



Final Report

Rapid Environmental Assessment Demonstration Project in Russia

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List of Acronyms

ACAP	Arctic Contaminants Action Program
AMAP	Arctic Monitoring and Assessment Program
GPS	Global Positioning System
ISS	Initial Site Screening
mg / kg	milligrams per kilogram (same as ppm)
MAC	Maximum Allowable Concentration
PE	Pure Earth Blacksmith Institute
ppm	parts per million
REA	Rapid Environmental Assessment
TSIP	Toxic Sites Identification Program

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Introduction by the Chair of ACAP Expert Group on Waste

The Arctic Contaminants Action Plan (ACAP, which later became Arctic Contaminants Action Program in 2006) started working on safe storage of Northern Russian obsolete pesticides in 2001. The project addressed 13 regions of the Russian Federation that were either directly by the Arctic Ocean or had an indirect route to the Arctic via rivers. By 2013, 7 000 tonnes of pesticides had been repackaged where necessary and often removed into safer regional storages by the local experts.

The ACAP project on obsolete pesticides did not, however, address the legacy of thousands of storages where the pesticide stockpiles had previously been placed. These storages were of varying type and shape, from barns in former collective farms to simple shacks in the outskirts of human settlements. With improved packaging and removal of pesticides the main hazard was removed, but unknown amounts of pesticides had contaminated the building materials and leached into soils around storages.

The Rapid Environmental Assessment (REA) is a tool developed by the United Nations Food and Agriculture Organization (FAO) for prioritizing pesticide contaminated sites for further intervention. The ACAP REA project was initiated to demonstrate the use of this methodology and train experts to use it in three pilot regions: Arkhangelsk, Komi Republic and Krasnoyarsk. All these regions received support from ACAP for pesticide storage improvements between 2004-2012. The project built capacity to prioritize and identify storage sites where further intervention might be necessary through desk study, sampling and laboratory analysis, in a cost-efficient manner.

ACAP will continue to support the regions in dealing with the remaining problems of obsolete pesticides and seek solutions to environmentally sound final destruction.

Timo Seppälä

Chair of ACAP Expert Group on Waste

Executive Summary of Findings

In September-November 2020 the project teams in the Krasnoyarsk, Arkhangelsk and Komi regions did 9 rapid environmental assessments of sites potentially contaminated with pesticides. The objective of the project was to introduce United Nations Food and Agriculture Organization developed cost-effective Rapid Environmental Assessment technique to detect the remaining threat to human health or the environment from former obsolete pesticides storages. The obsolete pesticides have been removed from old and unsafe storage facilities in the ACAP project between the years 2004-2012.

Major findings:

- **The number of old and unsafe storage facilities are many in the Russian Federation in the Arctic region. The results indicate that the pesticides management activities provided results and that only limited pollution is detected in surroundings.**
- **The remaining pollution of the 2 analyzed groups of toxic substances (DDT and its transformation products and HCH and its isomers) at these 9 sites is mainly below the Russian limit values.**
- **The investigators found contamination that exceeded the safety standards established in Russia for DDD, a transformation product of DDT, only at one out of 9 assessed former pesticide storages.**
- **These results show that REA methods could be used to conduct inventory of sites potentially contaminated with pesticides at reasonable costs. The project demonstrated the use of the tools and trained experts to continue assessments of remaining storages in the regions.**
- **The pilot project should preferably be followed up at the national level with a specific program to clean-up similar sites by applying these tools.**

Tools and methods applied

The rapid environmental assessments followed REA and TSIP protocols. The investigators completed physical descriptions for each site, identified the sources of contamination, estimated the migration of the pollutants and exposure pathways, assessed population at risk. The investigators took topsoil samples at each site, recorded sampling coordinates, took photos and prepared maps. According to the protocol, pesticides that are suspected to be present at the site based on the desk study, are analyzed in the laboratory. If the investigators find some labels, particular colorations, smells that indicate particular pesticides left, during the fieldwork, tests are extended to those as well. Based on available information on the selected sites two groups of the most important typical organochlorine pesticides, DDT and HCH were analyzed. There might be other substances left, but the monitoring was limited to these substances. The descriptions of sites and documents were uploaded to the online database.

At the site **“Abandoned warehouse, Pezmeg Village, Kortkeros District, Komi Republic (RU-8441)”** investigators collected 10 soil samples that were analyzed for DDT, DDE, Lindane (γ -HCH). All samples showed concentrations below Maximum Allowable Concentrations (MAC) adopted in Russia – 0.1 mg/kg for DDT and 0.1 mg/kg for lindane. This indicates that the site that was previously cleaned up from pesticides is considered to not require further intervention based on the hazard assessment.

At the site **“Former pesticides warehouse, Mosha village, Nyandomsky District, Arkhangelsk Oblast (RU-8476)”** investigators collected 12 soil samples that were analyzed for DDT, DDE, Lindane (γ -HCH). All samples showed concentrations below MACs. This indicates that the site that was previously cleaned up from pesticides is considered to not require further intervention based on the hazard assessment.

At the site **“Former warehouse of toxic chemicals, Syktyvkar town, Komi Republic (RU-8502)”** investigators collected 10 soil samples that were analyzed for DDT, DDE, Lindane (γ -HCH). All samples showed concentrations below MACs. This indicates that the site that was previously cleaned up from pesticides is considered to not require further intervention based on the hazard assessment.

At the site “**Former pesticide warehouse, Vizinga Village of Sysolsky District, Komi Republic (RU-8513)**” investigators collected 10 soil samples that were analyzed for DDT, DDE, Lindane (γ -HCH). All samples showed concentrations below MACs. This indicates that the site that was previously cleaned up from pesticides is considered to not require further intervention based on the hazard assessment.

At the site “**Former pesticides warehouse, Prigorodny Village, Kargopol District, Arkhangelsk Oblast (RU-8530)**” investigators collected 12 soil samples that were analyzed for DDT, DDE, Lindane (γ -HCH). All samples showed concentrations below MACs. This indicates that the site that was previously cleaned up from pesticides is considered to not require further intervention based on the hazard assessment.

At the site “**Former pesticides warehouse, Rovdino Village, Shenkurskiy District, Arkhangelsk Oblast (RU-8531)**” investigators collected 12 soil samples that were analyzed for DDT, DDE, Lindane (γ -HCH). All samples showed concentrations below MACs. This indicates that the site that was previously cleaned up from pesticides is considered to not require further intervention based on the hazard assessment.

At the site “**Former warehouse of pesticides, Atomanovo Village, Sukhobuzimsky District, Krasnoyarsky kray (RU-8543)**” investigators collected 8 soil samples that were analyzed for DDT, DDD, DDE, Hexachlorobenzene (HCB), Lindane (γ -HCH), α -HCH. All samples showed concentrations below MACs. This indicates that the site that was previously cleaned up from pesticides is considered to not require further intervention based on the hazard assessment.

At the site “**Pesticide warehouse in Mokrushenskoye Village of Kazachinsky District, Krasnoyarsky kray (RU-8544)**” investigators collected 10 soil samples that were analyzed for DDT, DDD, DDE, HCB, Lindane (γ -HCH), α -HCH. 3 samples exceeded MACs for α -HCH, 2 samples exceeded MACs for lindane, 2 samples exceeded MACs for DDD. These results indicate that the site could be a source of health hazard and environmental contamination. A more detailed assessment is recommended in order to assess potential environmental and health risks and plan remediation.

At the site **“Former pesticide warehouse, Nakhvalskoe Village of Sukhobuzimsky District, Krasnoyarsky kray (RU-8546)”** investigators collected 12 soil samples that were analyzed for DDT, DDD, DDE, HCB, Lindane (γ -HCH), α -HCH. All samples showed concentrations below MACs. This indicates that the site that was previously cleaned up from pesticides is considered to not require further intervention based on the hazard assessment.

More detailed site descriptions and assessment reports are in Appendix 5.

Rapid Environmental Assessment Demonstration

Project Final Report

Project Overview

The project was successful in demonstration of REA and TSIP protocols and tools. 12 people were trained in REA methods in one training session. 9 REAs were completed, exceeding the objective of conducting 6 site assessments.

Project Goal

The goal of the project is to demonstrate the methods of Rapid Environmental Assessment for assessing sites contaminated with obsolete pesticides.

Sponsors and Participants

The project was initiated and supported by Arctic Contaminants Action Program (ACAP) of the Arctic Council. Arctic Council is the leading intergovernmental forum promoting cooperation, coordination and interaction among the Arctic States, Arctic Indigenous peoples and other Arctic inhabitants on common Arctic issues, in particular on issues of sustainable development and environmental protection in the Arctic. The project was implemented by Pure Earth Blacksmith Institute, New York in cooperation with specialists in Russia.

Problem Statement

Obsolete pesticides (OPs) pose a significant environmental and health concern in the region, stemming from overuse and mismanagement of pesticides during the Soviet era. Many of the chemicals of concern are now deregistered locally, banned internationally or unusable because of long-term storage leading to degradation. It is estimated that around half of the world's quantities of obsolete pesticides can be found in the former Soviet Union. In addition, some industrial sites in the region rank among the world's most polluted places, exposing the populations to pollution from hazardous chemicals and heavy metals. This pollution presents a transboundary issue as pollutants migrate across borders and spread in the Arctic Region.

Pure Earth (Blacksmith Institute)

Pure Earth (Formerly Blacksmith Institute) is an engineering-based charity with head offices in New York and London. Pure Earth is focused on mitigating health risks posed by poorly managed hazardous waste and hazardous chemical contamination in low- and medium-income countries. To date, Pure Earth has implemented more than 50 projects in 20 countries.

An important program of Pure Earth is the Toxic Sites Identification Program (TSIP). This program began in 2009 and is an effort implemented jointly by Blacksmith and the United Nations Industrial Development Organization (UNIDO). The goal of the TSIP program is to identify and rapidly assess contaminated sites that potentially pose human health risks. The TSIP has been supported by the European Commission, the World Bank, the Asian Development Bank and Green Cross Switzerland, among others. To date more than 3,000 contaminated sites have been visited and sampled by trained investigators.



Figure 1. Sites in TSIP database

Figure. 1 shows sites contained in Pure Earth's TSIP database. Blue dots indicate sites that have been visited by trained investigators. Black dots indicate sites that have been identified though not yet visited.

The TSIP utilizes a rapid risk assessment methodology to evaluate risks posed by contaminated sites. As part of an Initial Site Screening (ISS), trained investigators visit sites, collect samples, take photographs and document site history. Completed

ISSs are uploaded into a secure online database where they receive a relative risk ranking to aid in prioritization.

Methods

The Rapid Environmental Assessment (REA) is a tool developed by United Nations Food and Agriculture Organization (FAO) to prioritize pesticide contaminated sites for further intervention. Under contract with FAO in 2012, Pure Earth Blacksmith Institute modified the REA and carried out field trials on pesticide contamination sites in Vietnam. Five separate rapid assessment protocols, including the Blacksmith TSIP Initial Site Assessment, were reviewed. Where appropriate concepts from each were integrated into the REA.

The resulting product is comprised of two distinct phases. The first phase is a “Desk Screen”, that utilizes limited site information and pre-existing GIS layers to prioritize sites for visits. Information on the soil type, nearby populations, the slope of the area, pesticide type and quantity and other information are used in an algorithm to determine visit priority. The desk screen is necessary because government or other agencies generally will not have the funds or resources to do site visits and assessments at all sites, so need a way to focus their limited resources on the sites most likely to present significant risks.

The second phase, the REA, is comprised of a site visit and a site-specific sampling and assessment protocol. During a visit of typically 1-2 days, interviews are conducted with people knowledgeable of the site, and then samples are collected, photographs are taken, and a series of objective technical questions are answered in a uniform format. Completed REAs are uploaded into a secure online database. The database uses three separate algorithms to calculate relative risks; specifically risks related to Source, Pathway, and Receptor.

The project was conducted in three regions of Russian Federation: Krasnoyarsky Krai, Arkhangelsk Oblast and Komi Republic. The objective was to conduct at least two assessments in each region.

The project partners and potential investigators were identified in each region. The project started with a training workshop in Krasnoyarsk in order to introduce the

project and train investigators of all three regions. Appendixes 1 and 2 show the REA input fields and database screens.

After the workshop the investigators conducted the field assessments. The collected soil samples were submitted to a certified laboratory. The collected data and results of the analyses were uploaded to the REA Database maintained by FAO and also to the database of the Toxic Sites Identification Program maintained by Blacksmith Institute/Pure Earth. The data will be verified for the compliance with the REA protocol and assessments will be approved by qualified personnel of Blacksmith Institute Pure Earth.

Program and Action Plan

The main project activities and indicators are listed below.

1. One regional training workshop
2. At least 90 soil samples tested for obsolete pesticides in a certified laboratory
3. At least 6 site assessments according to REA protocol

Project Deliverables:

- 9 site assessments reports
- Project Narrative report
- Project Financial report

Project Background

Pure Earth Blacksmith Institute operated in Russia since 2004 and since 2009 implemented TSIP in Russia and assessed 175 sites contaminated with various persistent pollutants. In 2013-2015 Pure Earth Blacksmith Institute in collaboration with FAO implemented EU-funded project «Improving capacities to eliminate and prevent recurrence obsolete pesticides as a model for tackling unused hazardous chemicals in the former Soviet Union» (CP/RER/040/EC). This project included assessments of sites contaminated with obsolete pesticides and development of REA protocol for that purpose. The developed REA protocol was largely based on

TSIP ISS protocol for assessment of contaminated areas, but was designed to provide more accurate assessment of pesticide contamination.

Earlier in the Russian Federation, from 2001 to 2012, the ACAP / CMP Russia Program “Environmentally sound management of obsolete pesticides in the Russian Federation” was implemented. The Program included the inventory of prohibited and obsolete pesticides, their identification, repackaging, transportation to safe storage sites, repair and construction of new safe storage sites. This work was conducted in thirteen regions of Russian Federation. About 7000 tons of obsolete pesticide stocks, including DDT, were discovered. In some ways this work was similar to TSIP activities.

Based on the positive experience of project ACAP / Russia "Environmentally sound management of obsolete pesticides in the Russian Federation", it was decided to implement in Russia the demonstration project to train environmental specialists the internationally accepted REA site assessment protocol. This project was scheduled for implementation in 2020.

The ACAP/ Blacksmith Institute Rapid Environmental Assessment Demonstration Project included training of specialists and conducting assessments in 3 regions that participated in previous ACAP project (2001-20012): Arkhangelsk Oblast, Komi Republic and Krasnoyarskiy Krai.

Project Implementation

Preparatory Stage

Several agreements with the partners of the selected regions were signed to coordinate the project work. The project implementation was coordinated by Dr Petr Sharov, Regional Director of the Blacksmith Institute Program in Eastern Europe and Central Asia and Marina Klimova, Project Coordinator. The project preparations and implementation were coordinated with Timo Seppala, the Chairman of the ACAP Expert Group on waste.

It was decided to hold a two-day workshop in Krasnoyarsk. This region received the highest performance rating in ACAP/Russia Project (2001-2012). Also, it was logistically easier to gather workshop participants in Krasnoyarsk.

In the preparatory period Marina Klimova sent letters to the interested project participants and Aleksandr Pokhodin, First Vice Minister of Agriculture and Trade of Krasnoyarskiy Krai, to inform about the planned workshop, and to invite them to participate. After obtaining consent from officials to hold the workshop and practical training in Krasnoyarsk, the Workshop Agenda (Appendix 03) was developed and on July 2, 2019, invitation letters were sent to the selected regions of the Russian Federation with invitations to participate in the ACAP/Blacksmith Institute Project. At that time the main project participants had been identified; two of them were actively involved in the previous ACAP/Russia Project: Kuligin V.D. (Krasnoyarsk) and Shestopalova N.S. (Komi Republic), and Kosareva E.N. (Arkhangelsk, replaced the Director of the FGBU station of the agrochemical service "Arkhangelskaya" G.E. Antropova, who retired during the project preparation). The project participants received information letters, Workshop Agenda, and "Investigator's Guide to Rapid Environmental Assessment (REA)" in Russian.

As per ACAP recommendation the project team also invited E.V. Tretyakov (Director of the Regional Center of the Stockholm Convention in the Russian Federation, Deputy Director of the Novosibirsk Institute of Organic Chemistry N. N. Vorozhtsov Siberian Branch of the Russian Academy of Sciences, Novosibirsk) and A. A. Nefedov (Senior Researcher at Novosibirsk Institute of Organic Chemistry) to

participate in the workshop. It turned out because of their schedules and COVID complications they could not come in person, so they joined online using zoom.

Training Workshop

The ACAP “Rapid Environmental Assessment Demonstration Project” workshop was held on 23-24 August 2020 in Krasnoyarsk Hotel. The workshop organization followed Government and World Health Organization instructions regarding COVID safety. Everybody’s temperature was scanned and the room allowed enough space between people. In addition to main project participants the project team invited Krasnoyarsk specialists in agriculture and environmental assessment to participate. The full list of the workshop participants is presented in Appendix 4.

On the first day the participants learned about:

- the objectives, structure of the ACAP / Blacksmith Institute,
- the role of the Project participants and government agencies,
- REA methods
- current efforts and projects related to the safe management of stockpiles of obsolete pesticides: storage, disposal, impact on the environment and human health, cleanups.



Figure 2. Preparing for the workshop



Figure 3. Marina Klimova opens the workshop



Figure 4. Petr Sharov delivers a presentation at the workshop



Figure 5. Workshop participants



Figure 6. Demonstration of personal protective equipment

Workshop participants received in electronic and printed forms “Investigator's Guide to Rapid Environmental Assessment” and “TSIP Investigator's Handbook”. These documents describe the process of REA, collecting data and uploading to the online database.

There were 4 presentations of current efforts and projects on the problem of obsolete pesticides in different regions, including the overview of the ACAP/Russia project. After these presentations, the workshop participants actively discussed the problem of managing stocks of obsolete pesticides and agreed that presently there is no

proper control over the storage and movement of old stocks of pesticides and potential cleanups.

On the second day in the morning the participants went to Minino Village in Emelyanovsky District to practice field activities of site characterization, soil sampling, compliance with personal safety rules, etc. The participants were given protective suits, goggles, gloves, boots, shovels, and containers for soil sampling. Dr V.N. Romanov, Researcher of the "Krasnoyarsk Research Institute of Agriculture" provided physical and historical description of the site to the workshop participants. During the field session P. Sharov showed how to properly assess the site, assess migration of contaminants, exposure pathways, accessibility, roads, proximity to residential and industrial areas, water bodies, etc. He showed how to take coordinates of sample locations and sectors using Global Positioning System (GPS), how to define different sampling sectors, and showed techniques of collecting target and composite soil samples.



Figure 7. Workshop participants in the field



Figure 8. Taking soil samples



Figure 9. Writing sample log



Figure 10. Taking GPS coordinates of the soil sample and writing sample log

After the completion of the field work, the workshop participants visited the Accredited Laboratory of the Center for Environmental Research and Audit, which has all the necessary equipment for sampling and analysis of chemicals of any hazard class. This laboratory was later used to analyze the samples collected during assessments in Krasnoyarskiy kray.



Figure 11. Visiting the Laboratory of the Center for Environmental Research and Audit

In the afternoon the workshop was continued. Dr Sharov demonstrated how to upload the information obtained from the demo site assessment into the online database. At the end of the workshop the participants were given Certificates of Completion.



Figure 12. Distribution of Completion Certificates

Site Assessments

The next stage of the work was to identify sites for assessment in three selected regions of the Russian Federation and conduct the assessments. In each region three sites were selected and assessed. For selection of the sites the researchers used knowledge from the previous ACAP/Russia project “Environmentally sound

management of obsolete pesticides in the Russian Federation". The researchers found that there were significant changes over the past 8-10 years since the previous ACAP Project. Many pesticide storage sites, including warehouses, were destroyed, areas were leveled, often occupied by various buildings, pesticides were removed, the locations where the removed pesticides were taken often unknown.

When selecting sites the project participants used the guidance from the REA manuals, to take note of the following criteria:

- The presence of landfills, warehouses, including destroyed, former storage sites for stocks of obsolete pesticides;
- Stocks of obsolete pesticides in storage areas (warehouses, dumps, etc.);
- Information on the presence in the of pesticides, persistent organic pollutants, including DDT;
- Accessibility of sites for survey;

After conducting field assessments the collected soil samples were sent for analyses to two laboratories:

- FGBU State Agrochemical Service Center "Vologda" ACCREDITED TESTING LABORATORY (160555, city of Vologda, Student Street, 11, agrohim351@mail.ru.) Samples from the Komi Republic and Arkhangelsk Region were sent here.
- LLC "Center for Environmental Research and Audit" Accredited Testing Laboratory (660041, Krasnoyarsk Territory, Krasnoyarsk, Svobodny Ave., 72a, room 115, ceria@list.ru). Samples from the Krasnoyarsk Territory were sent here.

After the analyses of the soil samples were completed the site assessment information was finalized in the database and translated into English. The Site assessment reports are provided in Appendix 5.

Major findings

- The number of old and unsafe storage facilities are many in the Russian Federation in the Arctic region. The results indicate that the pesticides management activities provided results and that only limited pollution is detected in surroundings.
- The remaining pollution of the 2 analyzed groups of toxic substances (DDT and its transformation products and HCH and its isomers) at these 9 sites is mainly below the Russian limit values.
- The investigators found contamination that exceeded the safety standards established in Russia for DDD, a transformation product of DDT, only at one out of 9 assessed former pesticide storages.
- These results show that REA methods could be used to conduct inventory of sites potentially contaminated with pesticides at reasonable costs. The project demonstrated the use of the tools and trained experts to continue assessments of remaining storages in the regions.
- The pilot project should preferably be followed up at the national level with a specific program to clean-up similar sites by applying these tools.

Lessons Learned

The project showed that REA protocol could be used in Russia for assessment of sites contaminated with obsolete pesticides.

Next Steps

The next step is to conduct a close-out workshop in a different Arctic region of Russia to share the project results and provide additional training to more people.

Annex 1. REA field form (English and Russian)

Предварительное исследование

Desk Screen

Имя участка: _____

(Site Name)

Страна: _____

(Country)

Регион: _____

(Province)

Широта : _____

(Latitude)

Долгота: _____

(Longitude)

Основной пестицид: _____

(Suspected Primary Pesticide)

Загрязнитель 1 (Contaminant 1): _____

Проба# (Sample #)	Среда пробы (Sample Media)	Целевая/Сборная (Targeted/ Composite)	Результаты (Results)	Кол-во человек, подверженных рisku воздействия загрязнителей (Population at Risk)
Проба 1 (Sample 1)				
Проба 2 (Sample 2)				
Проба 5 (Sample 5)				
			Кол-во человек, которые также могут быть подвержены риску (Additional population at risk)	
			Суммарное кол-во человек (Total)	

Возможная среда пробы (Possible Sampling Media)

вода - питьевая (мкг/л)	почва – в сельскохозяйственной зоне (мг/кг)
вода - для рыбалки (мкг/л)	почва - в промышленной зоне (мг/кг)
вода - для ирригация (мкг/л)	моча (мкг/л)
воздух - наружный (мкг/м3)	кровь (мкг/л)
воздух - на рабочем месте (8 ч) (мкг/м3)	волосы (мг/кг)
почва - в жилой зоне (мг/кг)	еда (мг/кг)
<i>Water - Drinking (ug/l or ppb)</i>	<i>Soil - Agriculture (mg/kg or ppm)</i>
<i>Water - Fishing (ug/l or ppb)</i>	<i>Soil -Industrial (mg/kg or ppm)</i>
<i>Water - Irrigation (ug/l or ppb)</i>	<i>Urine (ug/l)</i>
<i>Air - Outside (ug/m3)</i>	<i>Blood (ug/dl)</i>
<i>Air - Workplace (8hrs) (ug/m3)</i>	<i>Hair (ppm)</i>
<i>Soil - Residential (mg/kg or ppm)</i>	<i>Food</i>

Время последнего использования пестицидов: _____
(*Last Time Pesticides were used*)

Частота использования пестицидов: _____
(*Frequency of Pesticide Use*)

Общее описание

General Background

Исследователь: _____
(*Site Investigator*)

(Количество исследований, проведенных вышеупомянутым исследователем) _____
(*Number of Investigations Completed Previously by Above Named Investigator*)

Дата оценки (день/месяц/год): _____
(*Investigation Date (DD/MM/YY)*)

Почему на этом участке предполагается загрязнение пестицидами?
(*For what reason is the site suspected to be contaminated with pesticides?*)

- ☐ Место утечки пестицидов (*Location of pesticide spillage*)
- ☐ Сельскохозяйственное производство (*Agricultural production*)
- ☐ Земля использовалась для хранения пестицидов
(*The land been used as a pesticide storage site*)
- ☐ Земля использовалась для формирования пестицидов
(*The land been used as a pesticide formulation site*)
- ☐ Земля использовалась для захоронения
(*The land been used as a burial site*)

Владельцы направления: _____

(Site Owner)

Контактная информация владельца участка:

(Site Owner Contact Information)

Ближайшая больница:

(Nearest Hospital/ Health Clinic)

дополнительная информация:

(Additional Information)

Тип и количество

(Type and Quantity)

Другие загрязнители

(Other Contaminants)

Время последнего использования пестицидов

(Last time pesticides were in use?)

- ☐ до 30 дней *(Within 30 days)*
- ☐ до 1 года *(Within 1 year)*
- ☐ 1-2 года *(1-2 years)*
- ☐ 2-5 лет *(2-5 years)*
- ☐ 5-10 лет *(5-10 years)*
- ☐ более 10 лет *(More than 10 years)*

Частота использования пестицидов?

(Frequency of pesticide use?)

- ☐ Однократно (*Only once*)
- ☐ Иногда (*Occasional use*)
- ☐ Часто (*Frequent use*)
- ☐ Участок использовался/используется для хранения пестицидов (*The site was / is used for storage of pesticides*)

Пестициды до сих пор используются ?

Are pesticides still used?

- ☐ Нет (*No*)
- ☐ Да (*Yes*)

Количество используемого пестицида?

(*What quantity of pesticides were used?*)

- ☐ Малое количество (*Small Quantity*)
- ☐ Средний Количество (*Medium Quantity*)
- ☐ большое количество (*Large Quantity*)
- ☐ Very Large quantity (*Very Large*)

Масштаб загрязнения на участке

(*Describe the extent of staining on the site*)

- ☐ Нет признаков пятен (*No sign of staining*)
- ☐ Небольшое окрашивание/пятнистость (*Surface slightly discoloured / stained*)
- ☐ Значительное окрашивание из-за пестицида (*Surface completely discoloured due to pesticide*)
- ☐ Поверхность видимо насыщена пестицидом (*Surface saturated with pesticide (visibly moist)*)

Примерная площадь загрязненной территории? _____ кв. м.

(*What is the approx. surface area in m2 suspected of being contaminated?*)

Глубина загрязнения (м)? _____

(*What is the estimated depth of contamination (in metres)?*)

Проводилась ли оценка глубины распространения загрязнения? _____ м

(*Was a test pit dug to determine depth of contamination?)*

- ☐ Нет (*No*)
- ☐ Да (*Yes*)

Распространено ли загрязнение на другие среды?

(Has the contamination spread into more than one media?)

☐ Нет (No)

☐ Да (Yes)

Присутствует ли сильный запах?

(Is there a strong smell associated with the site attributed to contamination?)

☐ Нет (No)

☐ Да (Yes)

Загрязнитель 2 (Contaminant 2): _____

Проба# (Sample #)	Среда пробы (Sample Media)	Целевые/Сборная (Targeted/ Composite)	Результаты (Result)	Кол-во человек, подверженных рisku воздействия загрязнителей (Population at Risk)
Проба 1 (Sample 1)				
Проба 2 (Sample 2)				
Проба 3 (Sample 3)				
Проба 4 (Sample 4)				
Проба 5 (Sample 5)				
			Кол-во человек, которые также могут быть подвержены рisku (Additional population at risk)	
			Суммарное кол-во человек (Total)	

Риск распространения

(Release Risk)

Введите среднее ежегодное количество осадков в мм (7500мм максимум) _____
(Enter annual average rainfall in mm (7500mm max))

Означает ежегодную среднюю скорость ветра (Mean Annual Wind speed)

- ☐ (низкая <4.5 м в секунду) (Low <4.5 m per sec)
- ☐ (средняя 4.5 - 7.5 м в секунду) (Medium 4.5 - 7.5 m per sec)
- ☐ (высокая >7.5 м в секунду) (High >7.5m per sec)

Средняя температура лета (Average temperature summer) _____

Средняя температура зимы (Average temperature winter) _____

Есть ли на участке постоянные водоемы? (Is there permanent surface water on the site i.e. pools or ponds?)

- ☐ Нет (No)
- ☐ Да (Yes)

Для чего используется сегодня? (What is it used for?)

- ☐ Другое (Other)
- ☐ Неизвестно (Unknown)
- ☐ Ирригация (Irrigation)
- ☐ Рыболовство (Fishing)
- ☐ Купание (Bathing/ Washing)
- ☐ Питьевая (Drinking)

Есть ли грунтовые воды?

(Is there evidence of a high water table or ground water?)

- ☐ Нет (No)
- ☐ Да (Yes)

Глубина до ближайшего водного слоя? _____ meters
(What is the depth to the top of the water table?)

Находится ли участок в пойме?

(Is the site in a flood plain?)

- ☐ Нет (No)
- ☐ Да (Yes)

Расстояние до ближайшего колодца?

(Where is the closest river or water body?)

- ☐ Нет воды поблизости *(No water source in vicinity)*
- ☐ В 500 м от загрязнения *(Within 500m of contamination)*
- ☐ В 100 м от загрязнения *(Within 100m of contamination)*
- ☐ В 50 м от загрязнения *(Within 50m of contamination)*
- ☐ Проходит через загрязненный участок *(Running through the contaminated site)*

Расстояние до ближайшего колодца?

(Where is the closest well?)

- ☐ Нет колодца поблизости *(No well in vicinity)*
- ☐ В пределах 500 м от загрязнения *(Within 500m of contamination)*
- ☐ В пределах 100 м от загрязнения *(Within 100m of contamination)*
- ☐ В пределах 50 м от загрязнения *(Within 50m of contamination)*

Направление?

(In which direction?)

- | | |
|---|---|
| <input type="radio"/> Север <i>(North)</i> | <input type="radio"/> Юг <i>(South)</i> |
| <input type="radio"/> Северо-восток
<i>(Northeast)</i> | <input type="radio"/> Юго-запад <i>(Southwest)</i> |
| <input type="radio"/> Восток <i>(East)</i> | <input type="radio"/> Запад <i>(West)</i> |
| <input type="radio"/> Юго-восток <i>(Southeast)</i> | <input type="radio"/> Северо-запад <i>(Northwest)</i> |

Известно ли или предполагается что грунтовые воды текут в сторону колодцев, рек, болот, угодий?

(Is ground water known or suspected to flow towards identified receptors eg wells, wetlands, rivers, fields etc.?)

- ☐ Не знаю *(Do Not Know)*
- ☐ Нет *(No)*
- ☐ Да *(Yes)*

Тип почвы

(What is the soil type?)

- | | |
|--|--|
| <input type="radio"/> Латериты <i>(Lateritic)</i> | <input type="radio"/> Суглинок <i>(Loam)</i> |
| <input type="radio"/> Глина <i>(Clay)</i> | <input type="radio"/> Песок <i>(Sandy)</i> |
| <input type="radio"/> Вулканические
<i>(Volcanic)</i> | <input type="radio"/> Галька <i>(Gravel)</i> |

Глубина почвенного слоя

(What is the depth of soil to the strata beneath?)

- ☐ 1m ☐ 5m ☐ >10m
- ☐ 3m ☐ 10m

Тип скалистого субстрата

(What is the bedrock type?)

- ☐ Осадочная (*Sedimentary rock*)
- ☐ Метаморфическая (*Metamorphic rock*)
- ☐ Вулканическая (*Igneous rock*)

Положение загрязнителей относительно склона

(Where is the position of the contaminant(s) relative to the slope?)

- ☐ Выше уровня земли и уклон крутой (*Contaminants above ground level and slope is steep*)
- ☐ На или ниже уровня земли и уклон крутой (*Contaminants at or below ground level and slope is steep*)
- ☐ Выше уровня земли и уклон средний (*Contaminants above ground level and slope is intermediate*)
- ☐ На или ниже уровня земли и уклон средний (*Contaminants at or below ground level and slope is intermediate*)
- ☐ Выше уровня земли и уклона нет (*Contaminants above ground level and slope is flat*)
- ☐ На или ниже уровня земли и уклона нет (*Contaminants at or below ground level and slope is flat*)
- ☐ Не знаю (*Do Not Know*)

Прокладывались ли в этом месте каналы, кабели, трубы и т.п. после появления загрязнения

(Has the ground surface been disturbed, for example, to install drainage channels, pipes, cables etc since contamination?)

- ☐ Нет (*No*)
- ☐ Да (*Yes*)

Случались ли в этом месте аварии со значительным загрязнением среды?

(Have there been any significant releases such as accidents?)

- ☐ Нет (*No*)
- ☐ Да (*Yes*)

Как применялись пестициды?
(How were the pesticides applied?)

- ☐ вручную (By Hand)
☐ механически, укажите способ (Mechanically, specify machine)

Какое основное направление ветра?
(What is the prevailing wind direction?)

- | | |
|--|---|
| <input type="radio"/> Север (North) | <input type="radio"/> Юг (South) |
| <input type="radio"/> Северовосток (Northeast) | <input type="radio"/> Югозапад (Southwest) |
| <input type="radio"/> Восток (East) | <input type="radio"/> Запад (West) |
| <input type="radio"/> Юговосток (Southeast) | <input type="radio"/> Северозапад (Northwest) |

Загрязнитель 1 (Contaminant 1)

Если без контейнеров, то выберите
(Number of Containers): _____

Если свалено в груды, то оцените количество
(If no containers, select)

- ☐ кучи (Uncontained piles)
☐ Следы и остатки (Residue or spills only)

Если свалено в груды, то оцените количество
(If Uncontained piles, estimate quantity)

размер контейнеров (упаковки) (Size of Containers (in litres)) _____

тип контейнера (упаковки) (Type of Container)

- | | |
|---|---|
| <input type="radio"/> Метал или Бочка (Steel or metal drum) | <input type="radio"/> Пластик. Банка (Plastic pail) |
| <input type="radio"/> Метал или Банка (Metal can or pail) | <input type="radio"/> Картон (Paper container) |
| <input type="radio"/> Пластик. Бочка (Plastic drum) | <input type="radio"/> Другое (Other) |

формула (Formulation)

- ☐ Твердая (Solidified)
☐ Порошок (Powder)
☐ Жидкая (Liquid)

если раствор, то укажите растворитель: _____
(If Liquid, identify dilutant)

если известна, то укажите концентрацию пестицида: _____
(Specify concentration of Pesticide if known)

возраст контейнера
(Container Age)

- ☐ 1-5 года (years) ☐ 10-20 года (years)
☐ 5-10 года (years) ☐ >20 года (years)

состояние контейнера
(Container Condition)

- ☐ Отличное (Excellent) ☐ Плохое (Poor)
☐ Хорошее (Good) ☐ Очень плохое (Very Poor)
☐ Среднее (Moderate)

метод идентификации
(Identification Method)

- ☐ Хорошая, читаемая маркировка (Good, legible labels)
☐ Перечень, записи (Inventory or written records)
☐ Плохоразличимая маркировка (Unreliable labels)
☐ Словесное неофициальное описание (Verbal or informal records)

местонахождение
(Location)

- ☐ В здании с хорошей крышей (Inside building with good roof)
☐ В здании с плохой крышей (Inside building with poor roof)
☐ Снаружи (Outdoors)
☐ Под землей (Below ground)

если здание, выберите из списка
(If building, select)

- ☐ Хорошие стены (Good Walls)
☐ Слабые, полуразрушенные стены (Incomplete or poor walls)

если навес, выберите из списка
(If cover, select)

- ☐ Тарпаулин или пластик в хорошем состоянии
(Tarpaulin or plastic in good condition)
☐ Иное или плохой покров (Other or poor cover)
☐ Нет покрова (No cover)

Риск для здоровья

(Receptor Risk)

Тип землепользования в ближайшем будущем

(What is the land use for the foreseeable future?)

- ☐ Удаленная незастроенная территория *(Remote wilderness)*
- ☐ Промышленная - включая длительное использование пестицидов *(Industrial (inc. for continued use of pesticides))*
- ☐ Легкая промышленность/коммерция *(Light Industrial/Commercial)*
- ☐ Сельское хозяйство *(Agricultural)*
- ☐ Парк *(Parkland)*
- ☐ Жилая зона *(Housing / residential)*
- ☐ Школы, детские сады, больницы *(Critically Sensitive Receptors (Schools, Hospitals, etc))*

Укажите число людей в следующих категориях

(List the number of people in the following categories)

	На участке <i>(On Site)</i>	В пределах 50 м <i>(Within 50 Meters)</i>	В пределах 100 м <i>(Within 100 Meters)</i>	В пределах 500 м <i>(Within 500 Meters)</i>
Живут <i>(Live)</i>				
Работают <i>(Work)</i>				
Посещают <i>(Visit)</i>				

Доступность участка для сельскохозяйственных животных или охотничьей дичи?

(Is the site accessible to animals that are later consumed by humans?)

- ☐ с/х животные/рыба на участке *(food animals/ fish on site)*
- ☐ с/х животные/рыба в пределах 100 м от участка *(food animals/ fish within 100m)*
- ☐ есть доступ домашних животных *(accessible to occasional food animals)*

Расстояние до морской или пресноводной охраняемой территории?

What is the distance to a sensitive marine or freshwater ecological area?

- ☐ > 5 км *(> 5 km)*
- ☐ 1 км до 5 км *(1 km to 5 km)*
- ☐ 300 м до 1 км *(300 m to 1 km)*
- ☐ 0 до 300 м *(0 to 300 m)*

Расстояние до места забора питьевой или технической воды
(How close is water from the site to be used as source of potentially contaminated drinking or bathing water)

- ☐ > 5 км (> 5 km)
- ☐ 1 км до 5 км (1 km to 5 km)
- ☐ 300 м до 1 км (300 m to 1 km)
- ☐ 0 до 300 м (0 to 300 m)

В каком направлении? (In which direction?)

- ☐ Север (North)
- ☐ Северо-восток (Northeast)
- ☐ Восток (East)
- ☐ Юго-восток (Southeast)
- ☐ Юг (South)
- ☐ Юго-запад (Southwest)
- ☐ Запад (West)
- ☐ Северо-запад (Northwest)

Возможен ли контакт загрязненной почвы с людьми?
(What is the water used for?)

- ☐ Другое (Other)
- ☐ Неизвестно (Unknown)
- ☐ Ирригация (Irrigation)
- ☐ Рыболовство (Fishing)
- ☐ Купание (Bathing/ Washing)
- ☐ Питьевая (Drinking)

Возможен ли контакт загрязненной почвы с людьми?
(Is human ingestion of contaminated soils possible?)

- ☐ Нет (No)
- ☐ Да (Yes)

Опишите пастбище вокруг загрязненной территории
(Describe the grazing pattern around the contaminated area)

- ☐ Животные не пасутся в пределах 100 м от участка (No animals graze within 100m of the area)
- ☐ Животные пасутся в пределах 100 м от участка (Animals graze / feed within 100m of the area)
- ☐ Животные пасутся в пределах 10 м от участка (Animals graze / feed within 10m of the area)
- ☐ Животные пасутся на загрязненном участке (Animals graze / feed in the contaminated area)

Как далеко сельскохозяйственные поля от загрязненной территории
(Describe how far crops are produced from the contaminated area)

- ☐ Не расположены в пределах 100 м
(No crops are produced within 100m)
- ☐ Расположены в пределах 100 м (Crops are produced within 100m of the contaminated area)
- ☐ Расположены в пределах 10 м
(Crops are produced within 10m of the contaminated area)
- ☐ Расположены на загрязненной территории
(Crops are produced in the contaminated area)

В случае загрязнения воды, есть ли альтернативное водоснабжение?
(In the event that water on-site is contaminated, is an alternative water supply for drinking and bathing readily available?)

- ☐ Не подозревается загрязнение в воде (Water not suspected of being contaminated)
- ☐ Нет (No)
- ☐ Да (Yes)

Возможен ли кожный контакт с водой, осадками или почвой?
(Is dermal contact with contaminated surface water, groundwater, sediments or soils anticipated?)

- ☐ Нет (No)
- ☐ Да (Yes)

Как далеко сельскохозяйственные поля, животные или люди по направлению доминирующих ветров?
(How far away are crops, animals or humans downwind of the site?)

- ☐ Не расположены в пределах 100 м
(No crops are produced within 100m)
- ☐ Расположены в пределах 100 м (Crops are produced within 100m of the contaminated area)
- ☐ Расположены в пределах 10 м
(Crops are produced within 10m of the contaminated area)
- ☐ Расположены на загрязненной территории
(Crops are produced in the contaminated area)

Опишите доступность загрязненной территории для людей
(*What is the access to the contaminated area like?*)

- ☐ Контролируемый ограниченный доступ (*Controlled access; entry difficult*)
- ☐ Удаленная местность, менее доступна (*Remote locations; less accessible*)
- ☐ Умеренный доступ (*Moderate access; entry more difficult*)
- ☐ Легкий доступ (*Easy access; few barriers to entry*)

Насколько местное население зависит от местных природных ресурсов (вода, еда и т.п.)

(*Strength of reliance of local people on natural resources for survival (i.e., food, water, shelter, etc.)*)

- ☐ Люди используют ресурсы в пределах 200 м от участка (*People use resources from within 200m of the site*)
- ☐ Люди используют ресурсы в пределах 50 м от участка (*People use resources from within 50m of the site*)
- ☐ Люди используют ресурсы в пределах 20 м от участка (*People use resources from within 20m of the site*)
- ☐ Люди используют ресурсы на участке (*People use resources from the site*)

Опишите характер растительного покрова загрязненной территории
(*Describe the ground cover over the contaminated area*)

- ☐ Участок покрыт бетоном и т.п. (*The site is covered by a concrete slab or other type of engineering*)
- ☐ Трава и иная растительность (*There is complete grass cover and other vegetation*)
- ☐ Редкий травянистый покров (*There is sparse grass cover*)
- ☐ Голая земля (*The contaminated area is bare*)

Annex 2. REA Key Data Input Screens

Desk Screen

[Desk Screen](#)
[General Background](#)
[Type and Quantity](#)
[Release Risk](#)
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[Print View](#)
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INPUTS:

Site Name: Previous Vardenis selkhozkhimia storage (Mets Masrik.com)

Country: Armenia

Province: Gegharkunik

Latitude: 40.19526 Longitude: 45.76027

Suspected Primary Pesticide: DDT

Sample Sector	Sample Type Sampling Media	Population	Test Result Latitude Longitude	Units	Rec Level
1	composite Soil - Industrial	5	0.78580000 40.19343 44.50385	mg/kg or ppm	7
2	composite Soil - Industrial	2	0.79040000 40.19583 45.76125	mg/kg or ppm	7
3	composite Soil - Industrial	2	0.55420000 40.19510 45.76104	mg/kg or ppm	7
4	composite Soil - Agriculture	4	0.88100000 40.19507 45.76153	mg/kg or ppm	0.1
5	targeted Water - Irrigation/Bathing/Washing	1	9.51000000 40.19510 45.76153	ug/l or ppb	1
6	composite Soil - Industrial	9	0.70540000 40.19481 45.76054	mg/kg or ppm	7
7	composite Soil - Agriculture	8	0.12120000 40.19498 45.76010	mg/kg or ppm	0.1
8	composite Soil - Agriculture	5	0.08540000 40.19515 45.75998	mg/kg or ppm	0.1
9	composite Soil - Agriculture	2	0.10840000 40.19553 45.75478	mg/kg or ppm	0.1
10	composite Soil - Agriculture	4	0.18740000 40.14551 45.75829	mg/kg or ppm	0.1
Estimated additional population at risk:		240			
Total population at risk:		226			
Combine Population					

Last time pesticides were used: More than 10 years

Frequency of pesticide use: Present or former storage

Source Industry: Agriculture

RESULTS:

Risk: 12.34

Additional Risk (Sample): 4

Priority: HIGH

Water Solubility (mg/dl): 0.0055

Sorption Coefficient: 2,000,000

Landuse: Mosaic Vegetation/Croplands

Water within 0.5 km? No

DigitalGlobe, GeoEye, CNES/... esri

Altitude Map:

-7	-6	-3	-1	2
-8	-3	-3	1	2
-7	-3	1941	1	4
0	1	1	5	9
6	6	11	12	13

The value in the center represents the altitude of the site.
The other values represent the relative altitude of other areas in meters.
Each cell represents ~ 500 sq meters

General Background

[Desk Screen](#) [General Background](#) [Type and Quantity](#) [Release Risk](#) [Receptor Risk](#) [File Upload](#) [Print View](#) [Notes Box](#)

Name of Investigator	<input type="text" value="Ruzanna Grigoryan"/>
Number of REAs completed by investigator	<input type="text" value="2"/>
Investigation Date (DD/MM/YY)	<input type="text" value="27/08/14"/>
Why is the site believed to be contaminated?	<input type="text" value="The land has been used as a pesticide storage site"/>
Site Owner	<input type="text" value="Private"/>
Site Owner Contact Information	<input type="text" value="Not identified"/>
Nearest Hospital / Health Clinic	<input type="text" value="Vardenis hospital and Vardenis polioinic"/>
Is the REA complete?	<input type="text" value="Yes"/>
Has anyone conducted repackaging, remediation or other cleanup work at the site?	<input type="text" value="No"/>
Physical Description / Additional Information	<input type="text" value="Prior industrial area near the site, which is agricultural now. There are no walls or fences surrounding the ruins. There is some staining on the surface of the area (seems to be"/>

Type and Quantity

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Score - Priority

8 - LOW

Other Contaminants

Hexachlor (not in list), α -, β -, γ -HCH

Are pesticides still used?

No ▼

Quantity of pesticide use

Medium ▼

Extent of staining on the site

Surface slightly discolored / stained ▼

Approx surface area of the contaminated site

100 - 500 m2 ▼

Exact surface area (if known)

100.00 sq meters

Estimated depth of contamination

meters

Was a test pit dug to determine depth of contamination?

No ▼

Has the contamination spread into more than one media?

No ▼

Is there a strong smell associated with the site attributed to contamination?

No ▼

SAVE

RESET

Release Risk

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12 - MEDIUM

Annual Average Rainfall	453 mm (max 7500)
Mean Annual Windspeed	Low < 4.5 m per sec ▼
Average Temperature Summer	18 °C
Average Temperature Winter	-5 °C
Is there permanent surface water on the site (i.e. pools or ponds)	Yes ▼
What is it used for?	Irrigation ▼
Is there evidence of a high water table or ground water?	Yes ▼
Depth of the water table	▼
Exact depth (if known)	130 meters
Is the site in a flood plain?	No ▼
Location of closest river or water body	No water source in vicinity ▼
Location of closest well	No well in vicinity ▼
In which direction?	▼
Is ground water known or suspected to flow towards identified receptors, e.g. wells, wetlands, rivers, fields?	Yes ▼
Depth of soil to the strata beneath	▼
Bed Rock Type	▼
Position of the contaminant(s) relative to the slope	At or below ground level and slope is flat ▼
Has the ground surface been disturbed, for example, to install drainage channels, pipes, cables, etc. since contamination?	No ▼
Have there been any significant releases such as accidents?	No ▼
How were the pesticides applied?	By Hand ▼
What is the prevailing wind direction?	East ▼
What is the direction to nearest habitation?	Southwest ▼

Key Pollutant Details

DDT

Number of Containers	▼
If no containers, select	Uncontained piles ▼
If Uncontained piles, estimate quantity	▼ cubic meters
Size of Containers	▼ liters
Type of Container	▼
Container Age	▼
Container Condition	▼
Formulation	<input type="checkbox"/> Liquid <input type="checkbox"/> Powder <input type="checkbox"/> Solidified
If Liquid, identify dilutant	▼
Specify concentration of Pesticide if known	▼
Identification Method	▼
Location	▼
If building, select	▼
If cover, select	▼

[SAVE](#)
[RESET](#)

Receptor Risk

[Desk Screen](#) [General Background](#) [Type and Quantity](#) [Release Risk](#) [Receptor Risk](#) [File Upload](#) [Print View](#) [Notes Box](#)

Score - Priority

Land use for the foreseeable future

List the number of people in the following categories

Site accessibility to animals that are later consumed by humans

Distance to a sensitive marine or freshwater ecological area

Closeness of water from the site to be used as a source of potentially contaminated drinking or bathing water

In which direction?

What is it used for?

Is human ingestion of contaminated soils possible?

Describe the grazing pattern around the contaminated area

How far are crops produced from the contaminated area?

If water at the site is contaminated, is there another source of clean water available?

Is dermal contact with contaminated surface water, groundwater, sediments or soils anticipated?

How far away are crops, animals or humans downwind of the site?

Describe the access to the contaminated area

Strength of reliance of local people on natural resources for survival (i.e., food, water, shelter, etc.)

Describe the ground cover over the contaminated area

3 - LOW

- ☒ Agricultural
- ☐ Critically Sensitive Receptors (Schools, Hospitals, etc.)
- ☐ Housing / residential
- ☐ Industrial (inc. for continued use of pesticides)
- ☒ Light Industrial/Commercial
- ☐ Remote Area
- ☐ Vacant Land

	On Site	Within 50 meters	Within 100 meters	Within 500 meters
Live				
Work				80
Visit		10	30	160
Total	across all categories			280

food animals / fish on site ▼

> 5 km ▼

1 km to 5 km ▼

Northwest ▼

Unknown ▼

Yes ▼

Animals graze / feed within 100m of the area ▼

Crops are produced within 10m of the contaminated area ▼

No ▼

Yes ▼

Crops are produced within 10m of the contaminated area ▼

Easy access; few barrier to entry ▼

People use resources from within 20m of the site ▼

The site is covered by a concrete slab or other type of engineering ▼

[SAVE](#) [RESET](#)

File Upload

[Desk Screen](#)
[General Background](#)
[Type and Quantity](#)
[Release Risk](#)
[Receptor Risk](#)
[File Upload](#)

Upload any relevant files, reports or images (20 MB maximum):

File Type ☒ document ☐ image

File For Upload Файл не выбран

Description

note: changes will be saved if "Save" is clicked. To move through sections without saving, use the section index in the top screen.

15 Files already uploaded:

#	File Type	Description	Time Uploaded	Action
1	doc	sample_log	2015-06-18 12:36:14	view update delete
2	doc	Laboratory results- D	2015-06-12 09:00:42	view update delete
3	doc	Laboratory results- C	2015-06-12 09:00:25	view update delete
4	doc	Laboratory results- B	2015-06-12 09:00:11	view update delete
5	doc	Laboratory results- A	2015-06-12 08:59:55	view update delete
6	doc	Sampling map	2014-12-03 08:54:25	view update delete
7	image	Other constructions in the area	2014-11-05 04:19:50	view update delete
8	image	Fields surrounding the area and community in the distance	2014-11-05 04:12:53	view update delete
9	image	View of fields in proximity	2014-11-05 04:11:54	view update delete
10	image	Irrigation water running through the site	2014-11-05 04:10:06	view update delete
11	image	Vegetation covering the area	2014-11-05 04:08:01	view update delete
12	image	Collapsed buildings	2014-11-05 04:06:36	view update delete
13	image	Distant view of the site and buildings	2014-11-05 04:05:15	view update delete
14	image	Road from the site, surrounded by crops	2014-11-05 04:02:55	view update delete
15	image	View of the area	2014-11-05 04:00:41	view update delete

Annex 3. Training Workshop Agenda



AGENDA Technical Review Workshop



Arctic Contaminants Action Program (ACAP)

“Rapid Environmental Assessment Demonstration Project”

Date: August 23-24, 2020
Location: Krasnoyarsk, 94 Uritskogo St



August 23, 2020

Time	Topic	Reference material
10:00-10:15	<u>Introductions</u> Self Introduction Goals and structure of the workshop: Understand the project, role of government, Rapid Environmental Assessment methodology, conduct example site assessment, learn to use database	Meeting Agenda Klimova M. Sharov P.
10:15-10:45	<u>Project overview</u> Background: introduction to the project goals and structure, roles of participants Project Scope and Activities: geographic scope; types of pesticides; other project components Follow-up/feedback: What happens after Rapid Environmental Assessments? Using the Data: Prioritizing sites for remedial planning	Presentation Sharov P.
10:45-11:00	Tea Break	
11:00-11:30	<u>Previous/Ongoing Inventory & Clean-Up Projects</u> Review of ongoing efforts and projects regarding obsolete Pesticides: local, national and international programs to identify, assess, repackage and clean-up obsolete pesticides	Presentation Klimova M. Kuligin V. Shestopalova N. Kosareva E.

11:30-12:00	<u>Chemicals & Environmental Health</u> Review of relevant environmental health issues: <ul style="list-style-type: none"> • Hazards and risks • Types of pesticides • Pathways into the body • Dose response • Other environmental health issues related to pesticides 	Presentation Sharov P.
12:00-13:00	<u>Rapid Environmental Assessment (REA) Methodology</u> <u>TSIP methodology and database</u> Conducting Assessments: <ul style="list-style-type: none"> • Before the assessment (research and preparation) • Necessary equipment • During the assessment (collecting information) • After the assessment (entering information into database) 	Presentation & Investigator Handbook Sharov P.
13:00-14:30	Lunch Break	
14:30-16:00	<u>Sampling</u> Choosing a sampling method based on the site characteristics <ul style="list-style-type: none"> • Where to sample • Sampling equipment • How to take samples • How many samples to take • How to store samples • Where to send samples for analysis 	Presentation & Investigator Handbook Sharov P.
16:00-16:30	<u>Using the Online Database</u> Demonstration of how to enter site information into the online REA database	
16:30-16:45	Tea Break	
16:45-17:15	<u>Safety</u> Identifying hazards and risks Proper use of personal protective equipment (PPE) Proper handling and disposal of PPE	Presentation & Investigator Handbook Sharov P.
17:15-17:30	<u>Questions & Comments</u> Confirm details of day 2 site visit	

August 24, 2020

	<u>Gather & Prepare for Demonstration Site Assessment</u>	
09:30-14:30	<u>Site Visit & Demonstration Assessment</u>	Field demonstration

14:30-16:00	Database Exercise Practicing entering data from demonstration assessment into REA database	Sharov P.

ПРОГРАММА

"Демонстрация оценки устаревших пестицидов".

Дата: 23-24 августа 2020 г.

г. Красноярск, гостиница Красноярск

23 августа 2020

Время	Тема	Справочный материал
10:00-10:15	Введение Представление участников Цели и структура семинара: Ознакомление с проектом, с ролью государственных структур, методологией быстрой экологической оценки. Провести экспресс оценку участка, обучить использованию базы данных	Повестка дня Климова М.Ю. Шаров Петр
10:15-10:45	Справочная информация: знакомство с целями и структурой проекта, ролью участников Область действия и деятельность проекта: географический охват; виды пестицидов; другие компоненты проекта Последующая /обратная связь: Что происходит после быстрой экологической оценки? Использование данных: Выбор приоритетных участков для планирования деятельности по их восстановлению	Презентации Шаров Петр
10:45-11:00	Перерыв на чай	
11:00-11:30	Предыдущие/Текущие инвентаризации - Проекты очистки Обзор текущих усилий и проектов, касающихся устаревших пестицидов: местные, национальные и международные программы по выявлению, оценке, переупаковке устаревших пестицидов и очистке территорий	Презентации участников семинара Климова М.Ю. Кулигин В.Д. Шестопалова Н.С. Косарева Е.Н.
11:30-12:00	Химические вещества и охрана окружающей среды Обзор соответствующих вопросов охраны окружающей среды: <ul style="list-style-type: none"> • Опасности и риски • Виды пестицидов • Пути поступления в организмы • Доза ответ 	Презентации

	<ul style="list-style-type: none"> Другие вопросы охраны окружающей среды, связанные с пестицидами 	
12:00-13:00	Методика быстрой экологической оценки (REA) Проведение оценок: <ul style="list-style-type: none"> Перед оценкой (исследования и подготовка) Необходимое оборудование Во время оценки (сбор информации) После оценки (ввод информации в базу данных) 	Шаров Петр
13:00-14:30	Перерыв на обед	
14:30-16:00	Пробы Выбор метода отбора проб в зависимости от характеристики участка: <ul style="list-style-type: none"> Где брать пробы Оборудование для отбора проб Как взять пробы Сколько образцов взять Как хранить образцы Куда отправить образцы для проведения анализов 	Презентации И Руководство для исследователя Шаров Петр
16:00-16:30	Перерыв на чай	
16:45-17:15	Безопасность Определение опасности и рисков Правильное использование средств индивидуальной защиты (СИЗ) Надлежащая обработка и утилизация СИЗ	Презентации И Руководство для исследователя Шаров Петр
17:15-17:30	Вопросы и комментарии Разъяснения деталей посещения участка (практическое занятие) во 2 день.	

24 августа 2020

	Сбор для поездки на практическое занятие	
09:30-14:30	Посещение участка и демонстрационная оценка	Шаров П.
	Перерыв на обед	
16:00-17:30	Обучение заполнения базы данных Практика ввода информации, полученной из демонстрационной оценки участка, в базу данных REA	Шаров П.

Annex 4. List of Workshop Participants

Technical Review Workshop "Rapid Environmental Assessment Demonstration Project"

1	Alexander Alexandrovich Vasilenko	Assistant professor Federal State Budgetary Educational Institution of Higher Education "Krasnoyarsk State Agrarian University" 660049, Russia, 90, Mira Av., Krasnoyarsk Tel: +7 (950) 407-44-01 WasilenkoAA@yandex.ru
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3	Marina Yurievna Klimova	Regional Coordinator, Blacksmith Institute Russia, Moscow Tel.: +7 (916) 210-56-02, +7 (499) 610-75-87 klimova39@mail.ru
4	Elena Nikolaevna Kosareva	Acting Director Federal State Budgetary Institution "Station of the Agrochemical Service" Arkhangelskaya " 163062, Russia, Arkhangelsk, Nikitova St., 9 Tel.: +7 (8182) 68-66-80 agrohim_29@mail.ru
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6	Vasily Dmitrievich Kuligin	Director LLC "Siberian Scientific Research Institute of Hydraulic Engineering and Melioration" 660018, Krasnoyarsk, Krasnomoskovskaya st., 32-143 Tel.: +7 (913) 837-43-31

		kma@ptl-kras.ru kmvera@yandex.ru
7	Mikhail Arkadievich Mikhailets	Graduate student Federal Research Center "Krasnoyarsk Science Center of the Siberian Branch of the Russian Academy of Sciences" 660049, Russia, 90, Mira Av., Krasnoyarsk Department of Soil Science and Agrochemistry Tel.: +7(933) 333-09-16 mikhailets_ma@mail.ru
8	Olga Sergeevna Ofann	Head of the laboratory LLC "Center for Environmental Research and Audit" Krasnoyarsk Russia Tel.: +8 (953) 581-68-79 сот.; 8 (3112) 18-05-50 ceria@list.ru
9	Irina Yurievna Sochneva	Director LLC "Center for Environmental Research and Audit" Russia, Krasnoyarsk, Svobodniy Ave., 72A, office 115 Tel.: +8 (902) 924-24-11
10	Petr Olegovich Sharov	Regional Director Eastern Europe and Central Asia Program Blacksmith Institute for Pure Earth 475 Riverside Drive Suite 860, New York, NY 10115 Phone: +7-924-2325-784, +1(212) 870-3484 skype: petr.sharov www.pureearth.org petr@pureearth.org
11	Nina Semyonovna Shestopalova	Branch manager Branch of the federal state budgetary institution "Russian Agricultural Center in the Komi Republic" 167003, Syktyvkar, Rucheynaya st., 28 Komi Republic Russia Tel.: +7(8212) 31-93-06, 31-95-02, 8(912) 963- 93-09 rsc11@mail.ru

12	Konstantin Sergeevich Sochnev	Procurement Specialist LLC "Center for Environmental Research and Audit" Russia, Krasnoyarsk, Svobodniy Ave., 72A, office 115 Tel.: 8(913) 339-84-61
13	Malinnikov* Aleksi Valentinovich	Head of the Branch "Russian Agricultural Center of Krasnoyarskiy kray" 660049, г. Красноярск, ул. Сурикова д. 54в Россия Тел.: +7 (391) 227-74-96 krstazr@mail.ru
14	Nefedov* Andrei Alekseevich	Senior Researcher Novosibirsk Institute of Organic Chemistry N.N. Vorozhtsov of the Siberian Branch of Russian Academy of Sciences 630090, г. Новосибирск, проспект Академик Лаврентьева, д. 9 Россия Тел.: +7 (383)330-78-64 nefyodov@nioch.nsc.ru
15	Pokhodin* Aleksandr Nikolaevich	First Vice Minister of Agriculture and Trade of Krasnoyarskiy kray 660009, Красноярск, ул. Ленина, 125 Россия Тел.: +7 (391) 249-31-33 krasagro@krasagro.ru
16	Romanov** Vasiliy Nikolaevich	Head of Agricultural Technologies of the Krasnoyarsk Agriculture Research Institute SB RAS 660041, г. Красноярск, пр. Свободный, 66 Россия +7 (913) 0478951 romanov1948@yandex.ru
17	Temnikova* Alena Igorevna	Program Associate Eastern Europe and Central Asia Program Blacksmith Institute for Pure Earth alena@pureearth.org

Notes:

* Participated online using zoom

** Participated one day

Annex 5. Site Assessment Reports

In September-November 2020 the project teams in Krasnoyarsk, Arkhangelsk and Komi regions did 9 rapid environmental assessments of sites potentially contaminated with pesticides.

The rapid environmental assessments followed REA and TSIP protocols. The investigators completed physical descriptions for each site, identified the sources of contamination, estimated the migration of the pollutants and exposure pathways, assessed population at risk. The investigators took top soil samples at each site, recorded sampling coordinates, took photos and prepared maps. The descriptions of sites and documents were uploaded to the online database.

The investigators filled the information in Russian. Pure Earth staff reviewed the data to ensure that all required information is present and up to standards. Site descriptions were translated into English.

The map below shows the locations of sites assessed in 2020.



Site Assessment Report 1. RU-8441

Abandoned warehouse, Pezmeg Village, Kortkeros District, Komi Republic

Pezmeg Village is located in Kortkeros District of Komi Republic on the high right bank of the Vychegda River near the Pezmegty Lake.

The source of contamination is a former pesticide warehouse. The warehouse is located in Severnaya Niva LLC livestock farm. The agrochemicals warehouse was built in late 1960s. Pezmeg State Farm was the owner of the warehouse. In 1991-2007 there were 4 removals of obsolete pesticides from the site. The amount of the removed pesticides was 0.2 tons. The warehouse was decommissioned in 2007. The area of the former warehouse is 50 square meters.

The administrative building of Severnaya Niva LLC livestock farm is 300 meters south-west from the site. There are agricultural fields 20 meters to the south and east. Vegetables and perennial grasses for haymaking grow on the site. The nearest settlement is 2 km north.

The key suspected pollutants are organochlorine pesticides. Surface runoff could carry pesticides off-site. The dust contaminated with pesticides could be carried by wind. The site is easily accessible for people and animals. People could be exposed through inhalation of vapors, inhalation and ingestion of dust, and skin contact.

The conducted assessment did not confirm contamination on the site with pesticides.

Пезмег (Пезмог) - село в Корткеросском районе, расположенное на высоком правом берегу р. Вычегды у большого озера Пезмег-ты. Исследования проводились на территории ООО "Северная Нива" (животноводческое хозяйство).

Склад химикатов был построен в конце 60-х годов и принадлежал совхозу "Пезмег". С 1991 - 2007гг. проведены 4 утилизации устаревших пестицидов в количестве 0,2 тонны (выведен из эксплуатации в 2007г.).

1. Местоположение и географическое описание территории - территория с бывшим складом находится близ села Пезмег Корткеросского района Республики Коми. В 300 метрах к юго-западу находится административное здание животноводческого хозяйства ООО «Северная Нива». В 20 метрах на юг и восток от земельного участка, на котором располагался бывший склад с пестицидами, находятся поля сельскохозяйственного назначения, где выращиваются овощные культуры и многолетние травы на сенокос. Расстояние до центра населенного пункта больше 2км на север.

2. Источник загрязнения - склад для хранения пестицидов, располагается на земельном участке площадью 50 м. кв. Склад принадлежал совхозу "Пезмег".

Основные токсичные вещества - хлорорганические пестициды.

3. Способ миграции загрязняющих веществ - поверхностный смыв является средством переноса пестицидов по загрязненному участку, создавая риск загрязнения почвы и дальнейшего распространения с водой. Риск прямого воздействия на людей из-за содержания пестицидов в верхних слоях почвы или из-за распространения с участка посредством людей или ветра.

4. Пути экспозиции людей - попадание загрязнителя в организм человека при вдыхании пыли, употреблении загрязненной воды, пищи, выращенной на участке. Участок легко доступен для людей и домашних/диких животных.

5. Население, подвергающееся воздействию загрязнителя. Люди могут опосредованно контактировать с загрязнением, если они употребляют в пищу растения, а также животноводческую продукцию выращенных на загрязненной токсичными веществами почве

6. По результатам исследования в 2020 году подтвердилось отсутствие риска от воздействия загрязнителя.

Longitude	Latitude	Date	Town/Area Name	Description of the sampling spot	Sampler Full Name	DDT, ppm	Lindane, ppm
61.83219166666666	51.749948333333336	17.09.2020	Severnaya Niva LLC, Pezmeg Village	irrigation channel	Sergey Vladimirovich Peshkin	0,01	0,01
61.832169999999998	51.749899999999997	17.09.2020	Severnaya Niva LLC, Pezmeg Village	perennial grasses	Sergey Vladimirovich Peshkin	0,01	0,01
61.832484999999998	51.747948333333333	17.09.2020	Severnaya Niva LLC, Pezmeg Village	perennial grasses	Sergey Vladimirovich Peshkin	0,01	0,01
61.831575000000008	51.746994999999998	17.09.2020	Severnaya Niva LLC, Pezmeg Village	perennial grasses	Sergey Vladimirovich Peshkin	0,01	0,01
61.831391666666669	51.745580000000004	17.09.2020	Severnaya Niva LLC, Pezmeg Village	potato field	Sergey Vladimirovich Peshkin	0,01	0,01
61.830660000000002	51.744900000000008	17.09.2020	Severnaya Niva LLC, Pezmeg Village	next to the road	Sergey Vladimirovich Peshkin	0,01	0,01
61.830028333333331	51.745093333333337	17.09.2020	Severnaya Niva LLC, Pezmeg Village	next to the road	Sergey Vladimirovich Peshkin	0,01	0,01
61.830226666666675	51.741918333333324	17.09.2020	Severnaya Niva LLC, Pezmeg Village	30 meters from the warehouse building	Sergey Vladimirovich Peshkin	0,01	0,01
61.830384999999993	51.741716666666662	17.09.2020	Severnaya Niva LLC, Pezmeg Village	40 meters from the warehouse building	Sergey Vladimirovich Peshkin	0,0153	0,01
61.830448333333337	51.741405	17.09.2020	Severnaya Niva LLC, Pezmeg Village	Warehouse	Sergey Vladimirovich Peshkin	0,01	0,01

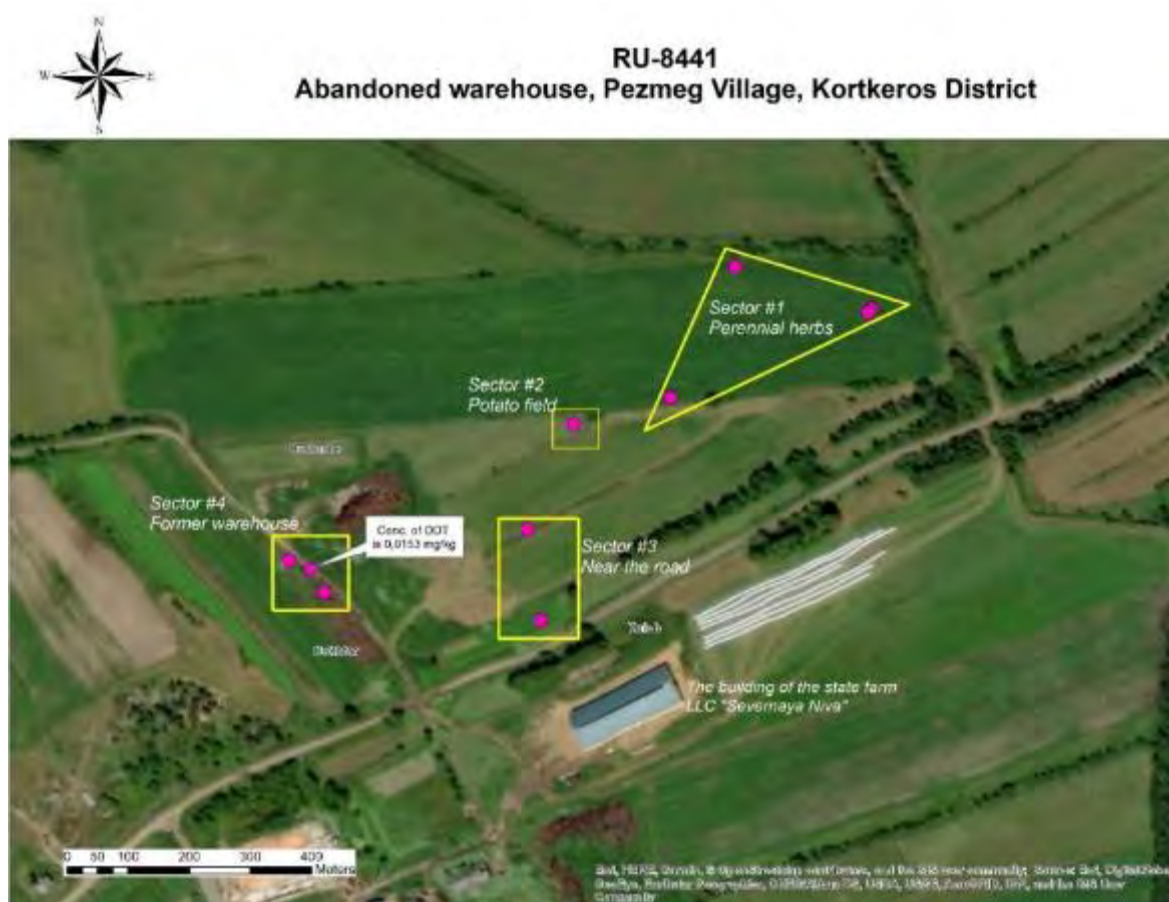


Figure 1. Map of the site RU-8441



Figure 2. General view of the warehouse



Figure 3. Sampling near the road of the warehouse



Figure 4. The building of the former warehouse

04.02.2021

<https://www.contaminatedsites.org/sa/8441/>

Toxic Sites Identification Program

Site RU-8441

Investigator Details

Oliga Lyseinkova

Department of the Federal Service for Veterinary and Phytosanitary Supervision in the Komi Republic

[View Investigator Profile](#)

This site was last update

Thursday 04 Feb 21 11:07:10 GMT

Would you like to continue editing?

[Edit](#) [Save](#) [New](#)

- [View Users](#)
- [View my sites](#)
- [Add new sites](#)
- [Logout](#)

ISA Status: Approved

Part 1 Screening Risk Assessment

Site Name

Abandoned warehouse, Pezneg Village, Kortkeros District

Region

Eastern Europe, Northern Eurasia & Central As

Country

Russia

State

R

<https://www.contaminatedsites.org/sa/8441/>

04.02.2021

<https://www.contaminatedsites.org/sa/8441/>

Toxic Sites Identification Program

Issue: ☐ Isolated site ☐ Regional problem

Key Pollutant:

Pesticides

Sub Pollutant:

DDT

Total population at risk:

300

Blacksmith Index

0



<https://www.contaminatedsites.org/sa/8441/>

Description

- [View Users](#)
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PART 1 Screening Risk Assessment

PART 2 Physical Description

PART 3 Release Rate

PART 4 Site Stakeholders

PART 5 Linked reports and images

2/16

04.02.2021

<https://www.contaminatedsites.org/site/6441/>

Toxic Sites Identification Program

Latitude:

61.8304093057174

Longitude:

51.7414810357187

Abstract

The source of contamination is a former pesticide warehouse. It is located in Pezmez Village, Korkeros District of Kon are organochlorine pesticides. Surface runoff could carry pesticides off-site. The dust contaminated with pesticides could be accessible for people and animals. People could be exposed through inhalation of vapors, inhalation and ingestion of d

Источник загрязнения - склад для хранения пестицидов тентовый, деревянный. Местонахождение с.Пезмег с чи. Путь распространения загрязняющих веществ - отвод воды через мелкоразветвленные каналы, поверхностный сток. Средством переноса пестицидов за пределы загрязненного участка, создавая риск загрязнения почвы и дальнейшее воздействие людей - участок легко доступен для людей и домашних/диких животных. Риск прямого воздействия за содержанием пестицидов в верхних слоях почвы или из-за распространения с участка посредством людей ил



<https://www.contaminatedsites.org/site/6441/>

04.02.2021

<https://www.contaminatedsites.org/site/6441/>

Toxic Sites Identification Program



Measurement above recommended level: 0-1x 1-2x 2-3x 3-5x 5-25x >25x

Sample Group ID: 1, Key Pollutant: DDT, Test Result: 0.01

Sample Sector: 1		Bt:	
Key Pollutant: Pesticides		Sub Pollutant: DDT	
Properties: Targeted		Test Result: 0.01	
Soil - Agriculture		Latitude: 61.8304093057174	
Longitude: 51.7414810357187		Rec Level: 0.01	

<https://www.contaminatedsites.org/site/6441/>

Description

View Users

View my sites

Add new sites

Logout

PART 1
Screening Risk Assessment

PART 2
Physical Description

PART 3
Release Risk

PART 4
Site Stakeholders

PART 5
Link and upload to all images

316

Description

View Users

View my sites

Add new sites

Logout

PART 1
Screening Risk Assessment

PART 2
Physical Description

PART 3
Release Risk

PART 4
Site Stakeholders

PART 5
Link and upload to all images

416

04.02.2021

<https://www.contaminatedsites.org/da/6411>

Toxic Sites Identification Program

Data Source Type:

☒ Investigator sampling (Lab or XRF)

Test Data Certainty:

☐ Low ☒ High

Data Source Description / Citation:

Certified Laboratory of Federal State Budgetary Institution "State Center of Agrochemical Service" Vologodsky". N/A
RU.0001.21ПЧ08. The protocol №0.2425

Федеральное государственное бюджетное учреждение
государственный центр агрохимической службы "Вологодский"
Аккредитованная Испытательная Лаборатория:
РОСС RU.0001.21ПЧ08
Протокол испытаний №0.2425

Population Estimate

15

Population estimate confirmed by local authority:

- ▶ Sample Group ID: 1, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0.01
- ▶ Sample Group ID: 1, Key Pollutant: DDT, Test Result: 0.01
- ▶ Sample Group ID: 1, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0.01
- ▶ Sample Group ID: 1, Key Pollutant: DDT, Test Result: 0.01
- ▶ Sample Group ID: 1, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0.01
- ▶ Sample Group ID: 1, Key Pollutant: DDT, Test Result: 0.01

<https://www.contaminatedsites.org/da/6411>

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<https://www.contaminatedsites.org/da/6411>

Toxic Sites Identification Program

▶ Sample Group ID: 2, Key Pollutant: DDT, Test Result: 0.01

- ▶ Sample Group ID: 2, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0.01
- ▶ Sample Group ID: 3, Key Pollutant: DDT, Test Result: 0.01
- ▶ Sample Group ID: 3, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0.01
- ▶ Sample Group ID: 3, Key Pollutant: DDT, Test Result: 0.01
- ▶ Sample Group ID: 3, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0.01
- ▶ Sample Group ID: 4, Key Pollutant: DDT, Test Result: 0.01
- ▶ Sample Group ID: 4, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0.01
- ▶ Sample Group ID: 4, Key Pollutant: DDT, Test Result: 0.02
- ▶ Sample Group ID: 4, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0.01
- ▶ Sample Group ID: 4, Key Pollutant: DDT, Test Result: 0.01
- ▶ Sample Group ID: 4, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0.01

Estimated additional population possibly at risk:

Physical Description

Location & Site Description:

<https://www.contaminatedsites.org/da/6411>

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<https://www.contaminatedsites.org.uk/5441/>

Toxic Sites Identification Program

It was built in late 1960s. Pezmag State Farm was the owner of the warehouse. In 1991-2007 there were 4 removals of amount of the removed pesticides was 0.2 tons. The warehouse was decommissioned in 2007. The area of the former The administrative building of Sovnaya Niva LLC livestock farm is 300 meters south-west from the site. There are ag and easi. Vegetables and perennial grasses for haymaking grow on the site. The nearest settlement is 2 km north. The key suspected pollutants are organochlorine pesticides. Surface runoff could carry pesticides off-site. The dust co carried by wind. The site is easily accessible for people and animals. People could be exposed though inhalation of va skin contact.

Size of Contaminated Area:

✚ 5,000 - 10,000 m² (1 hectare)

Estimated depth of contamination:

15

Was a test pit dug to determine depth of contamination?

↓ No

Is there a strong smell associated with the site attributed to contamination?

⊖ No

Soil Group

PODZOLS_HISTOSOLS

Soil Texture

Coarse

Clay Content:

18

Silt Content

% 43

Sand

% 40

Land Use:

Population Density

Elev.

<https://www.contaminatedsites.org.uk/5441/>

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<https://www.contaminatedsites.org.uk/5441/>

Toxic Sites Identification Program

Land Use:

Agriculture

👤 List the number of people in the following categories:

	On Site	Within 50 meters	Within 100 meters
Live	0	0	0
Work	0	2	2
Visit	0	5	5
Total across all cate			

Site accessibility to animals that are later consumed by humans:

🐷 Food animals / fish within 100m

How far are crops produced from the c

🌾 Within 100m of the contamin

<https://www.contaminatedsites.org.uk/5441/>

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<https://www.contaminatedsites.org/uk/S411/>

Toxic Sites Identification Program

Large River

No

What is the groundwater used for?

Not Known

If water at the site is contaminated, is there another source of clean water available?

No

Describe the access to the contaminated area:

Easy access, few barrier to entry

Describe the ground cover over the cor

There is complete grass cover /

Source Industry:

Agriculture

Active / Legacy

Legacy

Formal / Informal

Informal

Documented Health Effects: No

Describe credible health impact of pollutant. Append any existing studies (scan and pdf) to Part 6. Indicate anecdotal evidence c

<https://www.contaminatedsites.org/uk/S411/>

0210

04.02.2021

<https://www.contaminatedsites.org/uk/S411/>

Toxic Sites Identification Program

Достоверного воздействия загрязнителя на здоровье нет

Additional Notes:

Part 2: Release Risk

Is there permanent surface water on the site?

No

Is there evidence of a high water table or ground water?

No

Is the site in a flood plain?

What is it used for?

Select Date

Depth of the water table

Select a depth

<https://www.contaminatedsites.org/uk/S411/>

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<https://www.contaminatedsites.org.uk/5441/>

Toxic Sites Identification Program

Distance to the closest river or water body downstream of the contaminated site

↔ 1 km to 5 km

Distance to the closest well

↔ No well in vicinity

In which direction?

📍 Select a direction

Position of the contaminants relative to the slope

📍 Above ground level and slope is flat

Is this a storage facility for chemicals?

📍 No

Site Stakeholders

Number of stakeholders interviewed

↕ 1

Number of males

↕ Number of males

Num

Stakeholder Type

Other Agency 2

Name

<https://www.contaminatedsites.org.uk/5441/>

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<https://www.contaminatedsites.org.uk/5441/>

Toxic Sites Identification Program

Address

168041, Pechny-Bniva Komi, Sovkhozskaya ul., 2, село Печмез, Корткеросский район

168041, Komi Republic, Sovkhozskaya Street, 2, Pechmeg Village, Kortkeros District

Phone Number

7 82136 9 42 85

Email

n/a

Meeting Dates, Notes, & Key Findings

17.09.2020.
Galina Leonidovna Tarasovich told about the history of the warehouse
Пасека в районе деревни.

Linked reports and Images

📎 report N45.jpg (a) (b) (c) (d) (e) (f) (g) (h) (i) (j) (k) (l) (m) (n) (o) (p) (q) (r) (s) (t) (u) (v) (w) (x) (y) (z) (aa) (ab) (ac) (ad) (ae) (af) (ag) (ah) (ai) (aj) (ak) (al) (am) (an) (ao) (ap) (aq) (ar) (as) (at) (au) (av) (aw) (ax) (ay) (az) (ba) (bb) (bc) (bd) (be) (bf) (bg) (bh) (bi) (bj) (bk) (bl) (bm) (bn) (bo) (bp) (bq) (br) (bs) (bt) (bu) (bv) (bw) (bx) (by) (bz) (ca) (cb) (cc) (cd) (ce) (cf) (cg) (ch) (ci) (cj) (ck) (cl) (cm) (cn) (co) (cp) (cq) (cr) (cs) (ct) (cu) (cv) (cw) (cx) (cy) (cz) (da) (db) (dc) (dd) (de) (df) (dg) (dh) (di) (dj) (dk) (dl) (dm) (dn) (do) (dp) (dq) (dr) (ds) (dt) (du) (dv) (dw) (dx) (dy) (dz) (ea) (eb) (ec) (ed) (ee) (ef) (eg) (eh) (ei) (ej) (ek) (el) (em) (en) (eo) (ep) (eq) (er) (es) (et) (eu) (ev) (ew) (ex) (ey) (ez) (fa) (fb) (fc) (fd) (fe) (ff) (fg) (fh) (fi) (fj) (fk) (fl) (fm) (fn) (fo) (fp) (fq) (fr) (fs) (ft) (fu) (fv) (fw) (fx) (fy) (fz) (ga) (gb) (gc) (gd) (ge) (gf) (gg) (gh) (gi) (gj) (gk) (gl) (gm) (gn) (go) (gp) (gq) (gr) (gs) (gt) (gu) (gv) (gw) (gx) (gy) (gz) (ha) (hb) (hc) (hd) (he) (hf) (hg) (hh) (hi) (hj) (hk) (hl) (hm) (hn) (ho) (hp) (hq) (hr) (hs) (ht) (hu) (hv) (hw) (hx) (hy) (hz) (ia) (ib) (ic) (id) (ie) (if) (ig) (ih) (ii) (ij) (ik) (il) (im) (in) (io) (ip) (iq) (ir) (is) (it) (iu) (iv) (iw) (ix) (iy) (iz) (ja) (jb) (jc) (jd) (je) (jf) (jg) (jh) (ji) (jj) (jk) (jl) (jm) (jn) (jo) (jp) (jq) (jr) (js) (jt) (ju) (jv) (jw) (jx) (jy) (jz) (ka) (kb) (kc) (kd) (ke) (kf) (kg) (kh) (ki) (kj) (kk) (kl) (km) (kn) (ko) (kp) (kq) (kr) (ks) (kt) (ku) (kv) (kw) (kx) (ky) (kz) (la) (lb) (lc) (ld) (le) (lf) (lg) (lh) (li) (lj) (lk) (ll) (lm) (ln) (lo) (lp) (lq) (lr) (ls) (lt) (lu) (lv) (lw) (lx) (ly) (lz) (ma) (mb) (mc) (md) (me) (mf) (mg) (mh) (mi) (mj) (mk) (ml) (mm) (mn) (mo) (mp) (mq) (mr) (ms) (mt) (mu) (mv) (mw) (mx) (my) (mz) (na) (nb) (nc) (nd) (ne) (nf) (ng) (nh) (ni) (nj) (nk) (nl) (nm) (nn) (no) (np) (nq) (nr) (ns) (nt) (nu) (nv) (nw) (nx) (ny) (nz) (oa) (ob) (oc) (od) (oe) (of) (og) (oh) (oi) (oj) (ok) (ol) (om) (on) (oo) (op) (oq) (or) (os) (ot) (ou) (ov) (ow) (ox) (oy) (oz) (pa) (pb) (pc) (pd) (pe) (pf) (pg) (ph) (pi) (pj) (pk) (pl) (pm) (pn) (po) (pp) (pq) (pr) (ps) (pt) (pu) (pv) (pw) (px) (py) (pz) (qa) (qb) (qc) (qd) (qe) (qf) (qg) (qh) (qi) (qj) (qk) (ql) (qm) (qn) (qo) (qp) (qq) (qr) (qs) (qt) (qu) (qv) (qw) (qx) (qy) (qz) (ra) (rb) (rc) (rd) (re) (rf) (rg) (rh) (ri) (rj) (rk) (rl) (rm) (rn) (ro) (rp) (rq) (rr) (rs) (rt) (ru) (rv) (rw) (rx) (ry) (rz) (sa) (sb) (sc) (sd) (se) (sf) (sg) (sh) (si) (sj) (sk) (sl) (sm) (sn) (so) (sp) (sq) (sr) (ss) (st) (su) (sv) (sw) (sx) (sy) (sz) (ta) (tb) (tc) (td) (te) (tf) (tg) (th) (ti) (tj) (tk) (tl) (tm) (tn) (to) (tp) (tq) (tr) (ts) (tt) (tu) (tv) (tw) (tx) (ty) (tz) (ua) (ub) (uc) (ud) (ue) (uf) (ug) (uh) (ui) (uj) (uk) (ul) (um) (un) (uo) (up) (uq) (ur) (us) (ut) (uu) (uv) (uw) (ux) (uy) (uz) (va) (vb) (vc) (vd) (ve) (vf) (vg) (vh) (vi) (vj) (vk) (vl) (vm) (vn) (vo) (vp) (vq) (vr) (vs) (vt) (vu) (vv) (vw) (vx) (vy) (vz) (wa) (wb) (wc) (wd) (we) (wf) (wg) (wh) (wi) (wj) (wk) (wl) (wm) (wn) (wo) (wp) (wq) (wr) (ws) (wt) (wu) (wv) (ww) (wx) (wy) (wz) (xa) (xb) (xc) (xd) (xe) (xf) (xg) (xh) (xi) (xj) (xk) (xl) (xm) (xn) (xo) (xp) (xq) (xr) (xs) (xt) (xu) (xv) (xw) (xx) (xy) (xz) (ya) (yb) (yc) (yd) (ye) (yf) (yg) (yh) (yi) (yj) (yk) (yl) (ym) (yn) (yo) (yp) (yq) (yr) (ys) (yt) (yu) (yv) (yw) (yx) (yy) (yz) (za) (zb) (zc) (zd) (ze) (zf) (zg) (zh) (zi) (zj) (zk) (zl) (zm) (zn) (zo) (zp) (zq) (zr) (zs) (zt) (zu) (zv) (zw) (zx) (zy) (zz)

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Toxic Sites Identification Program

- [проба №3.jpg](#) lab protocol for sample#3
- [проба №4.jpg](#) lab protocol for sample#4
- [проба №5.jpg](#) lab protocol for sample#5
- [проба №6.jpg](#) lab protocol for sample#6
- [проба №7.jpg](#) lab protocol for sample#7
- [проба №8.jpg](#) lab protocol for sample#8
- [проба №9.jpg](#) lab protocol for sample#9
- [проба №10.jpg](#) lab protocol for sample#10
- [2020-11-24_13-54-59.png](#) map (Russian)
- [1 проба Кортхоросский район, п. Пезмег.jpg](#) sector 1 - general description
- [2 проба ООО_СЕВЕРНАЯНИВА_ Кортхоросский район, п. Пезмег.jpg](#) sector 2 - perennial grasses
- [3 проба ООО_СЕВЕРНАЯНИВА_ Кортхоросский район.jpg](#) sector 1 - perennial grasses
- [4 проба Кортхоросский район, п. Пезмег.jpg](#) sector 1 - perennial grasses
- [5 проба Кортхоросский район, п. Пезмег.jpg](#) sector 2 - potato field
- [6 проба Кортхоросский район, п. Пезмег.jpg](#) sector 3 - next to the road
- [7 проба Кортхоросский район, п. Пезмег.jpg](#) sector 3 - next to the road

Description

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Linked reports and images

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Toxic Sites Identification Program

- [проба 9 Кортхоросский район, п. Пезмег.jpg](#) sector 4 - pesticides warehouse
- [10 проба Кортхоросский район, п. Пезмег.jpg](#) sector 4 - pesticides warehouse
- [Протокол отбора проб с Пезмег.xlsx](#) sample log (Russian)
- [Pezmek.pdf](#) test results from environmental survey (all samples)
- [sample_log_5441_eng.xlsx](#) sample log english
- [map_eng.jpg](#) map (English)

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Part 6 Expected Intervention Description

Describe possible measure that could be taken to mitigate risk. Please include an estimated timeframe and key activities:

Estimated volume of contaminant: Enter an estimated volume in **m³**

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<https://www.contaminatedsites.org/ais/5441/>

Toxic Sites Identification Program

Describe long term intervention approach:

Note any physical, political or social barriers to the intervention:

Who is Local Champion? Provide contact details:

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Toxic Sites Identification Program

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Physical Contamination

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Release Risk

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Groundwater

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Contaminated Site History

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Release Risk

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Groundwater

PART 5
Contaminated Site History

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Site Assessment Report 2. RU-8476

Former pesticides warehouse, Mosha village, Nyandomsky District, Arkhangelsk Oblast

The former warehouse of obsolete pesticides is located in Mosha Village, Nyandomsky District of Arkhangelsk Region within the Mosha River Watershed.

The source of contamination is a typical brick warehouse building. The previous inventory of obsolete pesticides in Moshinsky state farm was conducted in 2003. During that inventory 1805 kg of obsolete organochlorine pesticides were found in the warehouse.

Pesticides were stored in broken containers inside the warehouse until June, 2004. In 2004 the slate roof of the building was removed, the brick wall was dismantled. Currently the warehouse building is in very poor condition and is partially destroyed.

The key contaminants are organochlorine pesticides.

The distance to the nearest farm is 1030 meters to the north. Livestock graze close to the warehouse. Farm animals have free access to the contaminated area. People may eat contaminated animal products or crops.

The largest lake Moshinskoe is located 730 meters to the northeast from the site. People use it as a recreation area. Runoff from the site may enter the lake.

The nearest residential buildings are within 1285 meters to the north from the site. The population uses water from a centralized water supply system. Children can enter the site. The residential area is downwind of the warehouse.

The dust contaminated with pesticides could be carried by wind. People could be exposed to inhalation of vapors, inhalation and ingestion of dust, and skin contact.

The conducted assessment did not confirm contamination on the site with pesticides.

1. Местонахождение и географическое описание территории - территория с бывшим складом находится в Няндомском муниципальном районе Архангельской области, на юго-востоке - бассейн реки Моша. В 730 метрах расположено крупнейшее озеро Мошинское. Расстояние до населенного пункта - 1030 метров (до фермы), 1285 метров до жилых домов.

2. Источник загрязнения - склад для хранения пестицидов типовой, кирпичный, из двух отделений, требовал ремонта.

Основные токсичные вещества - хлорорганические пестициды.

3. Способ миграции загрязняющих веществ - поверхностный смыв является средством переноса пестицидов по загрязненному участку, создавая риск загрязнения почвы и дальнейшего распространения с водой. Риск прямого воздействия на людей из-за содержания пестицидов в верхних слоях почвы или из-за распространения с участка посредством людей или ветра.

4. Пути экспозиции людей - попадание загрязнителя в организм человека при вдыхании пыли, употреблении загрязненной воды, пищи, выращенной на участке. Участок легко доступен для людей и домашних/диких животных.

5. Население, подвергающееся воздействию загрязнителя - сток с участка мог попадать с грунтовыми водами в озеро, на расстоянии до фермы пасли скот, домашних животных, в 1285 метрах - жилые дома, гуляют дети. Получают питьевую воду централизованно. У местных жителей дома в основном деревянные. Детей в основном по двое в семьях. Жилые зоны частично находятся с подветренной стороны от источника воздушного загрязнения. В настоящее время люди не проходят возле источника загрязнения по дороге на работу/школу. По территории поселения проходят автодороги общего пользования регионального значения.

6. По результатам исследования в 2020 году подтвердилось отсутствие риска от воздействия загрязнителя.

Longitude	Latitude	Date	Town/Area Name	Description of the sampling spot	Sampler Full Name	Organochlorine pesticides, ppm
40,84927	61,77622	03.10.2020	Mosha Village	Land area overgrown with weeds	A. Sverlov	<0.01
40,84921	61,77623	03.10.2020	Mosha Village	Land area overgrown with weeds	A. Sverlov	<0.01
40,84917	61,77625	03.10.2020	Mosha Village	Land area overgrown with weeds	A. Sverlov	<0.01
40,84914	61,77931	03.10.2020	Mosha Village	Land area overgrown with weeds	A. Sverlov	<0.01
40,84912	61,77635	03.10.2020	Mosha Village	Land area overgrown with weeds	A. Sverlov	<0.01
40,84912	61,77637	03.10.2020	Mosha Village	Land area overgrown with weeds	A. Sverlov	<0.01
40,84933	61,77622	03.10.2020	Mosha Village	Land area overgrown with weeds	A. Sverlov	<0.01
40,84942	61,77623	03.10.2020	Mosha Village	Land area overgrown with weeds	A. Sverlov	<0.01
40,84949	61,77624	03.10.2020	Mosha Village	Land area overgrown with weeds	A. Sverlov	<0.01
40,84957	61,77624	03.10.2020	Mosha Village	Land area overgrown with weeds	A. Sverlov	<0.01
40,84967	61,77625	03.10.2020	Mosha Village	Land area overgrown with weeds	A. Sverlov	<0.01

40,84975	61,77625	03.10.2020	Mosha Village	Land area overgrown with weeds	A. Sverlov	<0.01
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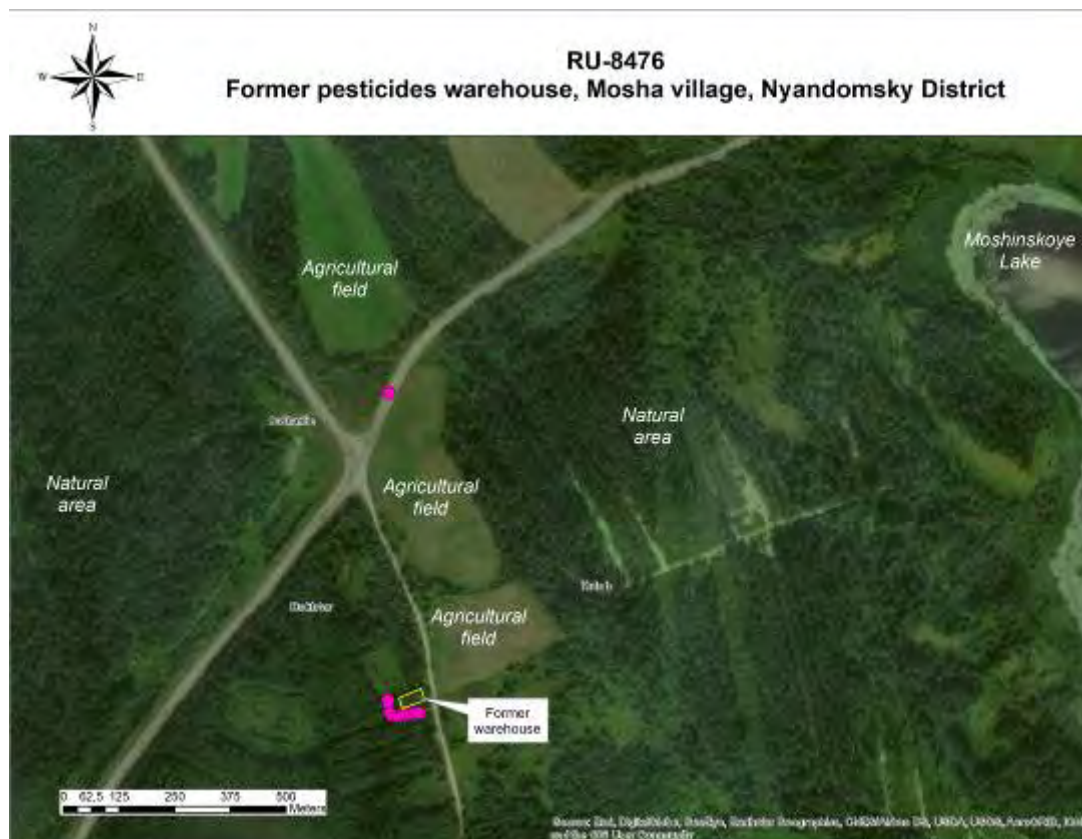


Figure 5. Map of the site RU-8476



Figure 6. The remains of the warehouse building



Figure 7. The road near the warehouse



Figure 8. Agricultural field near the warehouse

04.02.2021

<https://www.contaminatedsites.org/site/8476/>

Toxic Sites Identification Program

Site RU-8476

Investigator Details

Aleksandr Savelov

Private educational institution "Institute of Management"

+79115525660

asavelov@iadm.ru

This site was last update

Thursday, 04 February 2021 15:21:58

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ISA Status: Approved

1 Screening Risk Assessment

Site Name

Former pesticides warehouse, Mosha Village, Nyandomsky District

Region

Eastern Europe, Northern Eurasia & Central Asia

Country

Russia

State

Arkhangelsk

<https://www.contaminatedsites.org/site/8476/>

04.02.2021

<https://www.contaminatedsites.org/site/8476/>

Toxic Sites Identification Program

Issue: ☐ Isolated site ☐ Regional problem

Key Pollutant:

Pesticides

Sub Pollutant:

Organochlorine not otherwise specified

Total population at risk:

60

Blacksmith Index

0

Description

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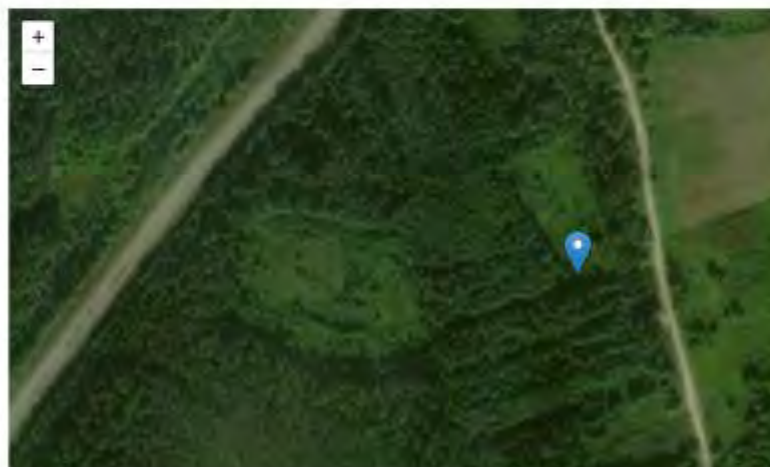
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<https://www.contaminatedsites.org/site/8476/>

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04.02.2021

<https://www.contaminatedsites.org/sku/5470/>

Toxic Sites Identification Program

Latitude:

61.77622

Longitude:

40.84924

Abstract

The former warehouse of obsolete pesticides is located in Mosha Village, Nyandomsky District of Arkhangelsk Region source of contamination is a typical brick warehouse building. The key contaminants are organochlorine pesticides. The dust contaminated with pesticides could be carried by wind. People could be exposed to inhalation of vapors, in the contact.

В комплексе "Мошкино" в 2003 году на момент инвентаризации числилось 1805 кг устаревших пестицидов. В 2010 крыша, разобрана кирпичная стена. До 06.2004 г пестициды находились в данном складе, нарушена целостность. Источники загрязнения - склад для хранения пестицидов типовой, кирпичный, из двух отделений, требует ремонт. Основные токсичные вещества - хлорорганические пестициды.



<https://www.contaminatedsites.org/sku/5470/>

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04.02.2021

<https://www.contaminatedsites.org/sku/5470/>

Toxic Sites Identification Program



Measurement above recommended level: 0-1x 1-2x 2-3x 3-5x 5-25x >25x

Sample Group ID: 1, Key Pollutant: Organochlorine not otherwise specified, Test Result: 0.01

Sample Sector: 1		Bi:	
Key Pollutant: Pesticides		Sub Pollutant: Organochlorine not otherwise specified	
Properties: Targeted		Test Result: 0.01	
Soil - Residential		Latitude: Long:	

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Toxic Sites Identification Program

Data Source Type:

☒ Investigator sampling (Lab or XRF)

Test Data Certainty:

☒ High

Data Source Description / Citation:

Certified Laboratory of Federal State Budgetary Institution "State Center of Agrochemical Service" Vologodsky
Lab protocol # 0.2742 of 11.11.2020

Протокол №0.2742 от 11.11.2020 г.

Population Estimate:

05

Population estimate confirmed by local authority:

- Sample Group ID: 2, Key Pollutant: Organochlorine not otherwise specified, Test Result: 0.01
- Sample Group ID: 3, Key Pollutant: Organochlorine not otherwise specified, Test Result: 0.01
- Sample Group ID: 4, Key Pollutant: Organochlorine not otherwise specified, Test Result: 0.01
- Sample Group ID: 5, Key Pollutant: Organochlorine not otherwise specified, Test Result: 0.01
- Sample Group ID: 6, Key Pollutant: Organochlorine not otherwise specified, Test Result: 0.01
- Sample Group ID: 7, Key Pollutant: Pesticides, Test Result: 0.01

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Toxic Sites Identification Program

- Sample Group ID: 8, Key Pollutant: Organochlorine not otherwise specified, Test Result: 0.01
- Sample Group ID: 10, Key Pollutant: Organochlorine not otherwise specified, Test Result: 0.01
- Sample Group ID: 11, Key Pollutant: Organochlorine not otherwise specified, Test Result: 0.01
- Sample Group ID: 12, Key Pollutant: Organochlorine not otherwise specified, Test Result: 0.01

Estimated additional population possibly at risk:

0

Physical Description

Location & Site Description:

The former warehouse of obsolete pesticides is located in Moshin Village, Nyandomsky District of Arkhangelsk Region. The source of contamination is a typical brick warehouse building. The previous inventory of obsolete pesticides in Mo 2003. During that inventory 1805 kg of obsolete organochlorine pesticides were found in the warehouse. Pesticides were stored in broken containers inside the warehouse until June, 2004. In 2004 the state roof of the building dismantled. Currently the warehouse building is in very poor condition and is partially destroyed. The key contaminants are organochlorine pesticides. The distance to the nearest farm is 1030 meters to the north. Livestock graze close to the warehouse. Farm animals may eat contaminated animal products or crops. The largest lake Moshinskoe is located 730 meters to the northeast from the site. People use it as a recreation area. R

Size of Contaminated Area:

< 100 m²

Estimated depth of contamination:

20

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<https://www.contaminatedsites.org.au/5476/>

Toxic Sites Identification Program

↓ No

Is there a strong smell associated with the site attributed to contamination?

⊙ No

Soil Group	Soil Texture	
PODZOLS_HISTOSOLS	Coarse	
Clay Content	Silt Content	Sand
17	% 46	% 37
Land Use	Population Density	Elev.
Forestry	per km ²	80

Land Use:

Agriculture

👤 List the number of people in the following categories:

<https://www.contaminatedsites.org.au/5476/>

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Toxic Sites Identification Program

Live	0	0	0
Work	0	3	5
Visit	0	2	1
			Total across all cate

Site accessibility to animals that are later consumed by humans:

🏠 Accessible to occasional food animals.

How far are crops produced from the c

📍 Within 100m of the contamina

Type of Water Body:

🌊 Large Lake (more than 10 hectares)

Is there possible groundwater contami

Yes

What is the groundwater used for?

🌊 Not Known

If water at the site is contaminated, is there another source of clean water available?

Yes

Describe the access to the contaminated area:

Describe the ground cover over the cor

<https://www.contaminatedsites.org.au/5476/>

3018

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<https://www.contaminatedsites.org/sa/s470/>

Toxic Sites Identification Program

Source Industry:

☒ Agriculture

Active / Legacy

☒ Legacy

Formal / Informal

☒ Formal

Documented Health Effects: ☒ No

Describe credible health impact of pollutant. Append any existing studies (scan and pdf) to Part 6. Indicate anecdotal evidence if investigators didn't find any evidences of pesticide exposure to humans

Поверхностный смыл, перенос пестицидов за пределы загрязненного участка, риск загрязнения почвы и др. Риск прямого воздействия на людей из-за содержания пестицидов в верхних слоях почвы или из-за распыления ветра.

Additional Notes:

<https://www.contaminatedsites.org/sa/s470/>

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<https://www.contaminatedsites.org/sa/s470/>

Toxic Sites Identification Program

Part 3 Release Risk

Is there permanent surface water on the site?

☒ No

What is it used for?

☒ Unknown

Is there evidence of a high water table or ground water?

☒ No

Depth of the water table

☒ Surface or near

Is the site in a flood plain?

☒ No

Distance to the closest river or water body downstream of the contaminated site

☒ 300 m to 1 km

Distance to the closest well

In which direction?

<https://www.contaminatedsites.org/sa/s470/>

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<https://www.contaminatedsites.org/sku5470/>

Toxic Sites Identification Program

Position of the contaminants relative to the slope

☒ Above ground level and slope is flat

Is this a storage facility for chemicals?

☒ No

Site Stakeholders

Number of stakeholders interviewed

add -

Number of males

0 Number of males

Num

Stakeholder Type

Other Agency 1

Name

former employees of the warehouse / Бывшие работники склада

Address

164224, Arkhangelsk region, Nyandomsky district, Makarovskaya
164224, Архангельской область, Нюндомский район, п/о Макаровское

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Toxic Sites Identification Program

Meeting Dates, Notes, & Key Findings

The meeting took place on 3rd October, 2020. The former employees of the warehouse told about the repackaging of
03.10.2020 г. Рассказ о месте и работе склада, перепакетировании пестицидов, объёмах

Linked reports and Images

- Протокол испытаний №0.2742 от 11.11.2020 г. pdf lab protocol sample # 1H
- Протокол испытаний №0.2743 от 11.11.2020 г. pdf lab protocol sample # 2H
- Протокол испытаний №0.2744 от 11.11.2020 г. pdf lab protocol sample # 3H
- Протокол испытаний №0.2745 от 11.11.2020 г. pdf lab protocol sample #4H
- Протокол испытаний №0.2746 от 11.11.2020 г. pdf lab protocol sample # 5H
- Протокол испытаний №0.2747 от 11.11.2020 г. pdf lab protocol sample # 6H
- Протокол испытаний №0.2748 от 11.11.2020 г. pdf lab protocol sample # 7H

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Toxic Sites Identification Program

- [Протокол испытаний № 0.2750 от 11.11.2020 г..pdf](#) [to protocol sample # 0H]
- [Протокол испытаний № 0.2752 от 11.11.2020 г..pdf](#) [to protocol sample # 1H]
- [Протокол испытаний № 0.2753 от 13.11.2020 г..pdf](#) [to protocol sample # 13]
- [Карта с местом бывшего склада пестицидов.JPG map.jpg](#)
- [samples_log_2020.xls sample_log \(Russian\)](#)
- [Протокол испытаний № 0.2751 от 11.11.2020 г..pdf](#) [to protocol sample # 10H]
- [Бывший склад пестицидов. Зарастание участка дравесно-кустарниковой растительностью.jpg](#) [to]
- [Бывший склад пестицидов. Местонахождение.jpg](#) [the area is overgrown with grass]
- [Бывший склад пестицидов. Определение координат.jpg](#) [coordinates]
- [Бывший склад пестицидов.jpg](#) [warehouse ruins]
- [Дорога к бывшему складу пестицидов.jpg](#) [the road to the warehouse]
- [Зарастание участка бывшего склада пестицидов малинником.jpg](#) [raspberry on the site of the former warehouse]
- [Низинный участок места бывшего склада пестицидов.jpg](#) [the area is overgrown with grass]
- [Низинный участок у места бывшего склада пестицидов.jpg](#) [agricultural field]
- [Отбор проб рядом с бывшим складом пестицидов.jpg](#) [the area is overgrown with grass]
- [Карта схема Ниндомский район.pdf](#) [map of the site] (Russian)

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Toxic Sites Identification Program

- [Moshu.pdf](#) [to protocol for taking Vtubes (all samples)]
- [Moshu_map.jpg](#) [map] (English)

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Part 1 Expected Intervention Description

Describe possible measure that could be taken to mitigate risk. Please include an estimated time frame and key activities:

Estimated volume of contaminant: Enter an estimated vol. m³

Initial intervention type: Select an intervention type

Describe long term intervention approach:

<https://www.contaminatedsites.org/site/5476/>

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https://www.contaminatedsites.org/site/54761

Toxic Sites Identification Program

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Note any physical, political or social barriers to the intervention:

Who is Local Champion? Provide contact details:

Activities carried out to date:

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Contaminant Pathways and Effects

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Site Assessment Report 3. RU-8502

Former warehouse of toxic chemicals, Syktyvkar town, Komi Republic

The former warehouse of obsolete pesticides is located in Syktyvkar city. The population of Syktyvkar city is 244,403 people. The warehouse was built in 1960s. The building of the warehouse was made of bricks.

The area of the warehouse is 50 square meters. The state farm Severnoye was the owner of the warehouse.

In 1993 0.4 tons of obsolete pesticides were removed from the site. The warehouse was not in use since 2007. It is partially destroyed.

There are agricultural fields at a distance of 20-40 meters around the warehouse. People grow vegetables and perennial grasses for hay on these fields. There are residential buildings within 800 meters north of the site.

The key pollutants are organochlorine pesticides.

Surface runoff could carry pesticides off-site. The dust contaminated with pesticides could be carried by wind.

Humans and domestic and wild animals can easily access to the area of the warehouse. People could be exposed through inhalation of vapors, inhalation and ingestion of dust, and skin contact.

The conducted assessment did not confirm contamination on the site with pesticides.

Исследования проводились на территории г. Сыктывкар. Склад химикатов был построен в 60-х годах. Проект типовой, кирпичный. С 1995 года проведены утилизации устаревших пестицидов в количестве 0,4 тонны. С 2007 года склад не функционирует (разобран).

1. Местоположение и географическое описание территории. Территория с бывшим складом находится близ города Сыктывкар Республики Коми. Со всех сторон на расстоянии от 20 до 40 метров окружен полями сельскохозяйственного назначения, где выращиваются овощные культуры и многолетние травы на сенокос. Расстояние до близ стоящих домов 0,8км к северу.

2. Источник загрязнения - склад для хранения пестицидов. Склад располагается на земельном участке площадью 50 м.кв. Склад принадлежал ОПХ "Северное".

Основные токсичные вещества - хлорорганические пестициды.

3. Способ миграции загрязняющих веществ. Поверхностный смыв является средством переноса пестицидов по загрязненному участку, создавая риск загрязнения почвы и дальнейшего распространения с водой. Риск прямого воздействия на людей из-за содержания пестицидов в верхних слоях почвы или из-за распространения с участка посредством людей или ветра.

4. Пути экспозиции людей - попадание загрязнителя в организм человека при вдыхании пыли, употреблении загрязненной воды, пищи, выращенной на участке. Участок легко доступен для людей и домашних/диких животных.

5. Население, подвергающееся воздействию загрязнителя. Люди могут опосредованно контактировать с загрязнением, если они употребляют в пищу растения, а также животноводческую продукцию выращенных на загрязненной токсичными веществами почве.

6. По результатам исследования в 2020 году подтвердилось отсутствие риска от воздействия загрязнителя.

Longitude	Latitude	Date	Town/Area Name	Description of the sampling spot	Sampler Full Name	DDT, ppm	Lindane, ppm
61.671680000000002	50.753308333333344	21.09.2020	Syktvkar	next to the irrigation channel	Sergey Vladimirovich Peshkin	0,01	0,01
61.671875	50.752821666666662	21.09.2020	Syktvkar	field with perennial grasses	Sergey Vladimirovich Peshkin	0,01	0,01
61.672263333333333	50.753429999999994	21.09.2020	Syktvkar	field with perennial grasses	Sergey Vladimirovich Peshkin	0,01	0,01
61.671563333333339	50.753926666666665	21.09.2020	Syktvkar	field with perennial grasses	Sergey Vladimirovich Peshkin	0,01	0,01
61.671331666666674	50.755028333333335	21.09.2020	Syktvkar	next to the irrigation channel	Sergey Vladimirovich Peshkin	0,01	0,01
61.671681666666672	50.752166666666668	21.09.2020	Syktvkar	near the warehouse building	Sergey Vladimirovich Peshkin	0,01	0,01
61.671473333333338	50.752550000000006	21.09.2020	Syktvkar	near the warehouse building	Sergey Vladimirovich Peshkin	0,01	0,01
61.671331666666674	50.752520000000004	21.09.2020	Syktvkar	next to the irrigation channel	Sergey Vladimirovich Peshkin	0,01	0,01
61.670974999999999	50.752250000000004	21.09.2020	Syktvkar	agricultural field	Sergey Vladimirovich Peshkin	0,01	0,01
61.670736666666667	50.753996666666673	21.09.2020	Syktvkar	agricultural field	Sergey Vladimirovich Peshkin	0,01	0,01



Figure 9. Map of the site RU-8502



Figure 10. Sampling on the agricultural field



Figure 11. Sampling on the agricultural field



Figure 12. An investigator makes takes GPS coordinates



Figure 13. Sampling near the remains of the warehouse building

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<https://www.contaminatedsites.org/site/8502/>

Toxic Sites Identification Program

Site RU-8502

Investigator Details

Oleg Lyashkov

Department of the Federal Service for Veterinary and Phytosanitary Supervision in the Komi Republic

oleg.lyashkov@fsvps.ru

This site was last update

Thursday, 04 Feb 2021 12:10 (UTC+7)

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ISA Status: Approved

Part 1 Screening Risk Assessment

Site Name

Former warehouse of toxic chemicals. Syktyvkar town, Komi Republic

Region

Eastern Europe, Northern Eurasia & Central Asia

Country

Russia

State

R

<https://www.contaminatedsites.org/site/8502/>

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<https://www.contaminatedsites.org/site/8502/>

Toxic Sites Identification Program

Issue: ☐ Isolated site ☐ Regional problem

Key Pollutant:

Pesticides

Sub Pollutant:

DDT

Total population at risk:

1000

Blacksmith Index

0

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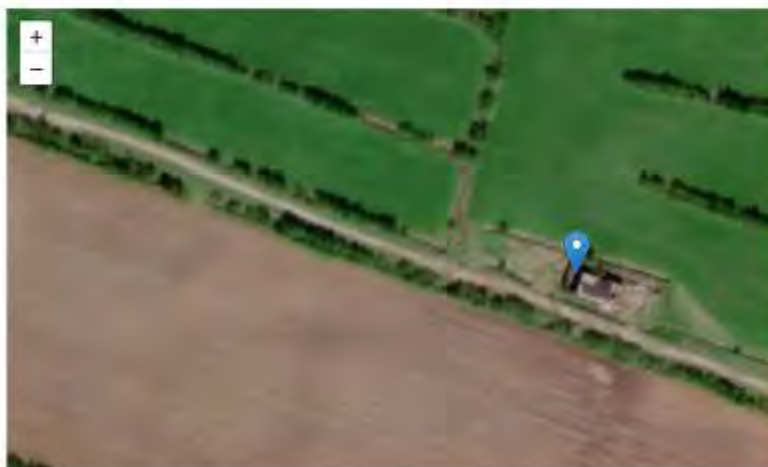
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Toxic Sites Identification Program

Latitude:

61.6716032640827

Longitude:

50.7526250483423

Abstract

The former warehouse of obsolete pesticides is located in Syktyvkar city. The population of Syktyvkar city is 244,403 in 1960s. There are residential buildings within 800 meters north of the site. The key pollutants are organochlorine pesticides off-site. The dust contaminated with pesticides could be carried by wind. Humans and domestic and wild animals can easily access to the area of the warehouse. People could be exposed to the ingestion of dust, and skin contact.

Источник загрязнения - склад для хранения пестицидов типовой, кирпичный. Местонахождение г. Сыктывкар с человеком. Путь распространения загрязняющих веществ - отвод воды через мелиоративные каналы, поверхность средством переноса пестицидов за пределы загрязненного участка, создавая риск загрязнения почвы и дальше.



<https://www.contaminatedsites.org/site/6502/>

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Toxic Sites Identification Program



Measurement above recommended level: 0-1x 1-2x 2-3x 3-5x 5-25x >25x

Sample Group ID: 1, Key Pollutant: DDT, Test Result: 0.01

Sample Sector: 1		Bt:	
Key Pollutant: Pesticides		Sub Pollutant: DDT	
Properties: Targeted		Test Result: 0.01	
Soil - Agriculture		Latitude: Long:	

<https://www.contaminatedsites.org/site/6502/>

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Toxic Sites Identification Program

Data Source Type:

☒ Investigator sampling (Lab or XRF)

Test Data Certainty:

☐ Low ☒ High

Data Source Description / Citation:

Certified Laboratory of Federal State Budgetary Institution "State Center of Agrochemical Service" Vologodsky". NIS RU.0001.21ПЧ08. The protocol №0.2435

Федеральное государственное бюджетное учреждение
государственный центр агрохимической службы "Вологодский"
Аккредитованная Испытательная Лаборатория:
РОСС RU.0001.21ПЧ08
Протокол испытаний №0.2435

Population Estimate

(Est. 50)

Population estimate confirmed by local authority:

- ▶ Sample Group ID: 1, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0.01
- ▶ Sample Group ID: 1, Key Pollutant: DDT, Test Result: 0.01
- ▶ Sample Group ID: 1, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0.01
- ▶ Sample Group ID: 1, Key Pollutant: DDT, Test Result: 0.01
- ▶ Sample Group ID: 1, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0.01
- ▶ Sample Group ID: 2, Key Pollutant: DDT, Test Result: 0.01

<https://www.contaminatedsites.org/site/8502/>

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Toxic Sites Identification Program

▶ Sample Group ID: 1, Key Pollutant: DDT, Test Result: 0.01

- ▶ Sample Group ID: 2, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0.01
- ▶ Sample Group ID: 2, Key Pollutant: DDT, Test Result: 0.01
- ▶ Sample Group ID: 2, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0.01
- ▶ Sample Group ID: 3, Key Pollutant: DDT, Test Result: 0.01
- ▶ Sample Group ID: 3, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0.01
- ▶ Sample Group ID: 3, Key Pollutant: DDT, Test Result: 0.01
- ▶ Sample Group ID: 3, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0.01
- ▶ Sample Group ID: 4, Key Pollutant: DDT, Test Result: 0.01
- ▶ Sample Group ID: 4, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0.01
- ▶ Sample Group ID: 4, Key Pollutant: DDT, Test Result: 0.01
- ▶ Sample Group ID: 4, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0.01

Estimated additional population possibly at risk:

Physical Description

Location & Site Description:

<https://www.contaminatedsites.org/site/8502/>

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<https://www.contaminatedsites.org.uk/BS02/>

Toxic Sites Identification Program

The area of the warehouse is 50 square meters. The state farm Severnaya was the owner of the warehouse. In 1993 0.4 tons of obsolete pesticides were removed from the site. The warehouse was not in use since 2007. It is possible that there are agricultural fields at a distance of 20-40 meters around the warehouse. People grow vegetables and perennials in residential buildings within 800 meters north of the site. The key pollutants are organochlorine pesticides. Surface runoff could carry pesticides off-site. The dust contaminated with pesticides could be carried by wind. Humans and domestic and wild animals can easily access to the area of the warehouse. People could be exposed to the dust.

Size of Contaminated Area:

5,000 - 10,000 m² (1 hectare)

Estimated depth of contamination:

15

Was a test pit dug to determine depth of contamination?

No

Is there a strong smell associated with the site attributed to contamination?

No

Soil Group

LUMISOLS, ALISOLS, RETISOLS

Soil Texture

Medium

Clay Content

14

Silt Content

% 49

Sand

% 31

Land Use

Population Density

Elev.

<https://www.contaminatedsites.org.uk/BS02/>

04.02.2021

<https://www.contaminatedsites.org.uk/BS02/>

Toxic Sites Identification Program

Land Use:

Agriculture

List the number of people in the following categories:

	On Site	Within 50 meters	Within 100 meters
Live	0	0	0
Work	0	3	10
Visit	0	3	10
Total across all categories			

Site accessibility to animals that are later consumed by humans:

Accessible to occasional food animals

How far are crops produced from the site?

Within 100m of the contamination

<https://www.contaminatedsites.org.uk/BS02/>

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<https://www.contaminatedsites.org/site/8502/>

Toxic Sites Identification Program

☒ Select one

No

1 Response

What is the groundwater used for?

☒ Select one

If water at the site is contaminated, is there another source of clean water available?

No

☒ Your location

☒ Moving site

☒ Add new site

☒ Logout

Describe the access to the contaminated area:

☒ Easy access, few barrier to entry

Describe the ground cover over the cor

☒ There is complete grass cover /

Source Industry:

☒ Agriculture

Active / Legacy:

☒ Legacy

Formal / Informal:

☒ Informal

PART 1
Screening Risk Assessment

PART 2
Detailed Contamination

PART 3
Release Risk

PART 4
Contaminated

PART 5
Contaminated Contaminated

Documented Health Effects: ☒ No

Describe credible health impact of pollutant. Append any existing studies (scan and pdf) to Part 6. Indicate anecdotal evidence c

<https://www.contaminatedsites.org/site/8502/>

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Toxic Sites Identification Program

Достоверного воздействия загрязнителя на здоровье нет

1 Response

Additional Notes:

☒ Your location

☒ Moving site

☒ Add new site

☒ Logout

Part 3: Release Risk

Is there permanent surface water on the site?

No

What is it used for?

☒ Select One

Is there evidence of a high water table or ground water?

No

Depth of the water table

☒ Select a depth

Is the site in a flood plain?

PART 3
Release Risk

PART 4
Contaminated

PART 5
Contaminated Contaminated

<https://www.contaminatedsites.org/site/8502/>

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<https://www.contaminatedsites.org/site/8502/>

Toxic Sites Identification Program

Distance to the closest river or water body downstream of the contaminated site

↔ 1 km to 5 km

Distance to the closest well

↔ No well in vicinity

In which direction?

Select a direction

Position of the contaminants relative to the slope

Above ground level and slope is flat

Is this a storage facility for chemicals?

No

Site Stakeholders

Number of stakeholders interviewed

1

Number of males

1

Num

Stakeholder Type

Business/Corporate Interest

Name

<https://www.contaminatedsites.org/site/8502/>

04.02.2021

<https://www.contaminatedsites.org/site/8502/>

Toxic Sites Identification Program

Address

Phone Number

89125620253

Email

n/a

Meeting Dates, Notes, & Key Findings

The meeting took place on September 21, 2020.
Former employee (Chief agronomist) of the LLC Severnoye told about the history of the warehouse.

21.09.2020. Бывший сотрудник (Главный агроном) ОПХ "Северное" Конин Павел Иванович. Рассказ о работе химикатов.

Linked reports and Images

2020-11-18_09-06-07.png (img) (1000x1000)

<https://www.contaminatedsites.org/site/8502/>

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<https://www.contaminatedsites.org/site/8502/>

Toxic Sites Identification Program

- [проба №12.jpg](#) lab protocol, sample #12
- [проба №13.jpg](#) lab protocol, sample #13
- [проба №14.jpg](#) lab protocol, sample #14
- [проба №15.jpg](#) lab protocol, sample #15
- [проба №16.jpg](#) lab protocol, sample #16
- [проба №17.jpg](#) lab protocol, sample #17
- [проба №18.jpg](#) lab protocol, sample #18
- [проба №19.jpg](#) lab protocol, sample #19
- [проба №20.jpg](#) lab protocol, sample #20
- [11 проба Сықтықтар, Ручейная.jpg](#) @ almagel11chymot, 1st the warehouse
- [12 проба Сықтықтар.jpg](#) warehouse building
- [13 проба Сықтықтар.jpg](#) field with perennial grasses
- [14 проба Сықтықтар.jpg](#) sampling
- [15 проба Сықтықтар.jpg](#) residential building (general view)
- [16 проба Сықтықтар.jpg](#) warehouse building
- [17 проба Сықтықтар.jpg](#) warehouse building

Description

- View Users
- View my sites
- Add new sites
- Logout

PART 1
Screening Risk Assessment

PART 2
Physical Description

PART 3
Release Data

PART 4
Groundwater

PART 5
Linked reports and images

<https://www.contaminatedsites.org/site/8502/>

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<https://www.contaminatedsites.org/site/8502/>

Toxic Sites Identification Program

- [19 проба Сықтықтар.jpg](#) agricultural field
- [20 проба Сықтықтар.jpg](#) sampling
- [20 проба Сықтықтар.jpg](#) sampling on the agricultural field
- [Protocol от проба проба 1. Сықтықтар.xlsx](#) sample log (kazakh)
- [sample_log_syktyktyr_eng.xlsx](#) sample log (english)
- [Syktyktyr.pdf](#) lab protocol (all samples)
- [syktyktyr_map.jpg](#) map (English)

Description

- View Users
- View my sites
- Add new sites
- Logout

PART 1
Screening Risk Assessment

PART 2
Physical Description

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PART 4
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PART 5
Linked reports and images

Part A Expected Intervention Description

Describe possible measure that could be taken to mitigate risk. Please include an estimated time frame and key activities:

Estimated volume of contaminant: Enter an estimated vol. m³

<https://www.contaminatedsites.org/site/8502/>

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<https://www.contaminatedsites.org/site/8502/>

Toxic Sites Identification Program

Describe long term intervention approach:

Note any physical, political or social barriers to the intervention:

Who is Local Champion? Provide contact details:

<https://www.contaminatedsites.org/site/8502/>

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<https://www.contaminatedsites.org/site/8502/>

Toxic Sites Identification Program

<https://www.contaminatedsites.org/site/8502/>

DESCRIPTION

- View Users
- View my site
- Add new site
- Logout

PART 1
Screening Risk Assessment

PART 2
Physical Contamination

PART 3
Release Risk

PART 4
Groundwater

PART 5
Contaminant Report and History

15/18

DESCRIPTION

- View Users
- View my site
- Add new site
- Logout

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Screening Risk Assessment

PART 2
Physical Contamination

PART 3
Release Risk

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Groundwater

PART 5
Contaminant Report and History

16/18

Site Assessment Report 4. RU-8513

Former pesticide warehouse, Vizinga Village of Sysolsky District, Komi Republic

The former pesticide warehouse is located in Vizinga Village of Sysolsky District, Komi Republic 77 km from Syktyvkar City. The village is located along the banks of the Bolshaya Vizinga River. The population of Vizinga Village is 7140 people.

The warehouse was built in late 1970s. Since 1991 to 2005 about 2 tons of obsolete pesticides were removed from the warehouse.

Industrial buildings are located 100 meters north from the site. A vegetable storehouse of the Federal State Budgetary Institution "Gossortkomissia" is within 100 meters west of the site. Private-sector fields with vegetable crops are within 60 meters south. The distance to the residential buildings is more than 500 meters to the west.

The area of the warehouse is 100 square meters. The state farm Sysolsky was the owner of the warehouse.

The key pollutants are organochlorine pesticides.

Surface runoff could carry pesticides off-site. The dust contaminated with pesticides could be carried by wind.

The site is easily accessible to humans and domestic and wild animals. People could be exposed though inhalation of vapors, inhalation and ingestion of dust, and skin contact or eating crops grown close to the site.

The conducted assessment did not confirm contamination on the site with pesticides.

Село Визинга – центр сельской администрации и Сысольского района, находится в 77 км от г. Сыктывкар. Расположено по берегам р. Большая Визинга. Склад был построен в конце 70-х годов. С 1991 года по 2005 год утилизировано около 2 тонн устаревших пестицидов.

1. Местоположение и географическое описание территории - территория с бывшим складом находится близ села Визинга Сысольского района Республики Коми. В 100 метрах к северу находятся промышленные здания. В 100 метрах на запад от земельного участка, на котором располагался бывший склад с пестицидами, находятся овощехранилище ФГБУ "Госсорткомиссия". В 60 метрах на юг располагаются поля частного сектора, где выращиваются овощные культуры. Расстояние до населенного пункта больше 0,5 км на запад.

2. Источник загрязнения - склад для хранения пестицидов, располагается на земельном участке площадью 100 м. кв. Склад принадлежал совхозу "Сысольский".

Основные токсичные вещества - хлорорганические пестициды.

3. Способ миграции загрязняющих веществ - поверхностный смыв является средством переноса пестицидов по загрязненному участку, создавая риск загрязнения почвы и дальнейшего распространения с водой. Риск прямого воздействия на людей из-за содержания пестицидов в верхних слоях почвы или из-за распространения с участка посредством людей или ветра.

4. Пути экспозиции людей - попадание загрязнителя в организм человека при вдыхании пыли, употреблении загрязненной воды, пищи, выращенной на участке. Участок легко доступен для людей и домашних/диких животных.

5. Население, подвергающееся воздействию загрязнителя. Люди могут опосредованно контактировать с загрязнением, если они употребляют в пищу растения, выращенные на загрязненной токсичными веществами почве.

6. По результатам исследования в 2020 году подтвердилось отсутствие риска от воздействия загрязнителя.

Longitude	Latitude	Date	Town/Area Name	Description of the sampling spot	Sampler Full Name	DDT, ppm	lindane, ppm
61.084596666666663	50.138418333333327	23.09.2020	Visinga Village	50 meters from the warehouse building	Sergey Vladimirovich Peshkin	0,01	0,01
61.084523333333333	50.138161666666669	23.09.2020	Visinga Village	3 meters from the warehouse building	Sergey Vladimirovich Peshkin	0,01	0,01
61.084471666666666	50.137588333333333	23.09.2020	Visinga Village	30 meters from the warehouse building	Sergey Vladimirovich Peshkin	0,01	0,01
61.084431666666666	50.137423333333331	23.09.2020	Visinga Village	agricultural field	Sergey Vladimirovich Peshkin	0,01	0,01
61.084701666666666	50.137393333333328	23.09.2020	Visinga Village	agricultural field	Sergey Vladimirovich Peshkin	0,01	0,01
61.084396666666663	50.138708333333334	23.09.2020	Visinga Village	drainage channel	Sergey Vladimirovich Peshkin	0,01	0,01
61.084078333333338	50.138288333333335	23.09.2020	Visinga Village	potato field	Sergey Vladimirovich Peshkin	0,01	0,01
61.084229999999998	50.137079999999997	23.09.2020	Visinga Village	potato field	Sergey Vladimirovich Peshkin	0,01	0,01
61.084346666666669	50.136479999999999	23.09.2020	Visinga Village	near forest plantations	Sergey Vladimirovich Peshkin	0,01	0,01
61.084244999999996	50.135908333333326	23.09.2020	Visinga Village	next to the road	Sergey Vladimirovich Peshkin	0,01	0,01

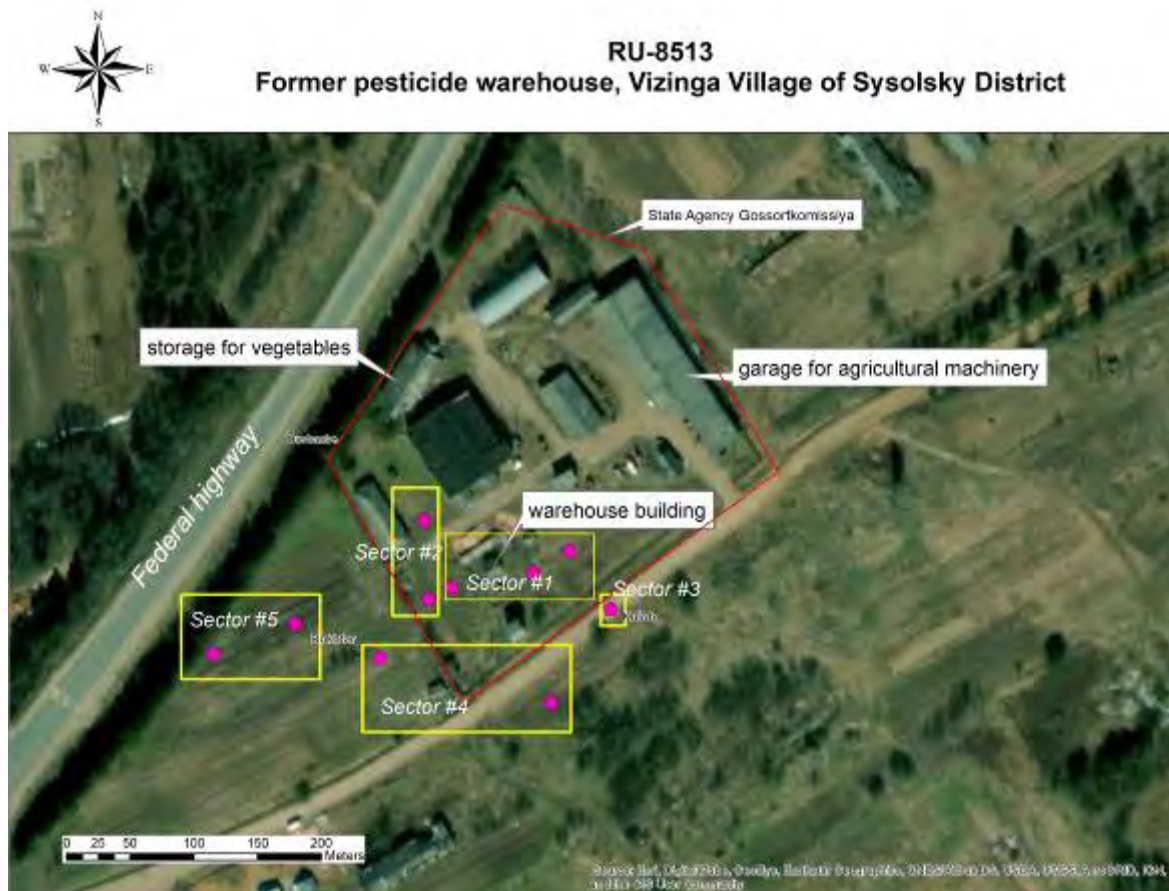


Figure 14. Map of the site RU-8513



Figure 15. Investigators working on the site



Figure 16. Sampling on the potato field



Figure 17. Sampling within 30 meters from the warehouse

04.02.2021

<https://www.contaminatedsites.org/site/8513/>

Toxic Sites Identification Program

Site RU-8513

Investigator Details

Oleg Lyashkov

Department of the Federal Service for Veterinary and Phytosanitary Supervision in the Komi Republic

ol@compsyamdis.ru

This site was last update

Thursday, 04 Feb 2021 12:32 PM GMT

Would you like to continue editing?

[Edit](#) [Save](#) [New](#)

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- [View my sites](#)
- [Add new sites](#)
- [Logout](#)

ISA Status: Approved

Part 1 Screening Risk Assessment

Site Name

Former pesticide warehouse, Vizinga Village of Sysolsky District

Region

Eastern Europe, Northern Eurasia & Central As

Country

Russia

State

R

<https://www.contaminatedsites.org/site/8513/>

04.02.2021

<https://www.contaminatedsites.org/site/8513/>

Toxic Sites Identification Program

Issue: ☐ Isolated site ☐ Regional problem

Key Pollutant:

Pesticides

Sub Pollutant:

DDT

Total population at risk:

240

Blacksmith Index

0



<https://www.contaminatedsites.org/site/8513/>

Description

- [View Users](#)
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PART 1 Screening Risk Assessment

PART 2 Physical Description

PART 3 Release Rate

PART 4 Site Stakeholders

PART 5 Linked reports and images

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<https://www.contaminatedsites.org/site/6513/>

Toxic Sites Identification Program

Latitude: Longitude:

Abstract

The former pesticide warehouse is located in Vizinga Village of Sysoisky District, Komi Republic 77 km from Syktyvkar. Private-sector fields with vegetable crops are within 60 meters south. The distance to the residential buildings is more. The site is easily accessible to humans and domestic and wild animals. People could be exposed through inhalation of and skin contact or eating crops grown close to the site.

Источник загрязнения - склад для хранения пестицидов типовой, деревянный. Местонахождение с.Визинга - с/х. Путь распространения загрязняющих веществ - отвод воды через мелиоративные каналы, поверхностный сток. Средством переноса пестицидов за пределы загрязненного участка, создавая риск загрязнения почвы и дальше.



<https://www.contaminatedsites.org/site/6513/>

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<https://www.contaminatedsites.org/site/6513/>

Toxic Sites Identification Program



Measurement above recommended level: 0-1x 1-2x 2-3x 3-5x 5-25x >25x

Sample Group ID: 1, Key Pollutant: DDT, Test Result: 0.01

Sample Sector: <input type="text" value="1"/>		Bt:	
Key Pollutant: <input type="text" value="Pesticides"/>		Sub Pollutant: <input type="text" value="DDT"/>	
Properties: <input type="text" value="Targeted"/>		Test Result: <input type="text" value="0.01"/>	
Soil - Agriculture: <input type="text" value=""/>		Latitude: <input type="text" value=""/>	
Rec Level: <input type="text" value="Level"/>		Longitude: <input type="text" value=""/>	

<https://www.contaminatedsites.org/site/6513/>

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<https://www.contaminatedsites.org/web5513/>

Toxic Sites Identification Program

Data Source Type:

☒ Investigator sampling (Lab or XRF)

Test Data Certainty:

☐ Low ☒ High

Data Source Description / Citation:

Certified Laboratory of Federal State Budgetary Institution "State Center of Agrochemical Service" Vologodsky". N/A
RU.0001.21ПЧ08. The protocol №0.2445

Федеральное государственное бюджетное учреждение
государственный центр агрохимической службы "Вологодский"
Аккредитованная Испытательная Лаборатория:
РОСС RU.0001.21ПЧ08
Протокол испытаний №0.2445

Population Estimate

12

Population estimate confirmed by local authority:

- ▶ Sample Group ID: 1, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0.01
- ▶ Sample Group ID: 1, Key Pollutant: DDT, Test Result: 0.01
- ▶ Sample Group ID: 1, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0.01
- ▶ Sample Group ID: 1, Key Pollutant: DDT, Test Result: 0.01
- ▶ Sample Group ID: 1, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0.01
- ▶ Sample Group ID: 2, Key Pollutant: DDT, Test Result: 0.01

<https://www.contaminatedsites.org/web5513/>

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Toxic Sites Identification Program

▶ Sample Group ID: 1, Key Pollutant: DDT, Test Result: 0.01

- ▶ Sample Group ID: 2, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0.01
- ▶ Sample Group ID: 3, Key Pollutant: DDT, Test Result: 0.01
- ▶ Sample Group ID: 3, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0.01
- ▶ Sample Group ID: 4, Key Pollutant: DDT, Test Result: 0.01
- ▶ Sample Group ID: 4, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0.01
- ▶ Sample Group ID: 4, Key Pollutant: DDT, Test Result: 0.01
- ▶ Sample Group ID: 4, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0.01
- ▶ Sample Group ID: 5, Key Pollutant: Pesticides, Test Result: 0.01
- ▶ Sample Group ID: 5, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0.01
- ▶ Sample Group ID: 5, Key Pollutant: DDT, Test Result: 0.01
- ▶ Sample Group ID: 5, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0.01

Estimated additional population possibly at risk:

Physical Description

Location & Site Description:

<https://www.contaminatedsites.org/web5513/>

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<https://www.contaminatedsites.org/site/6513/>

Toxic Sites Identification Program

The warehouse was built in late 1970s. Since 1991 to 2005 about 2 tons of obsolete pesticides were removed from the industrial buildings are located 100 meters north from the site. A vegetable storehouse of the Federal State Budgetary 100 meters west of the site. Private-sector fields with vegetable crops are within 80 meters south. The distance to the nearest residential area is 100 meters to the west.

The area of the warehouse is 100 square meters. The state farm Sysolsky was the owner of the warehouse. The key pollutants are organochlorine pesticides. Surface runoff could carry pesticides off-site. The dust contaminated with pesticides could be carried by wind.

Size of Contaminated Area:

5,000 - 10,000 m² (1 hectare)

Estimated depth of contamination:

15

Was a test pit dug to determine depth of contamination?

No

Is there a strong smell associated with the site attributed to contamination?

No

Soil Group

LUMISOLS, ALISOLS, RETISOLS

Soil Texture

Medium

Clay Content

19

Silt Content

% 49

Sand

% 31

Land Use

Population Density

Elev.

<https://www.contaminatedsites.org/site/6513/>

0/00

04.02.2021

<https://www.contaminatedsites.org/site/6513/>

Toxic Sites Identification Program

Land Use:

Agriculture

List the number of people in the following categories:

	On Site	Within 50 meters	Within 100 meters
Live	0	0	0
Work	0	0	6
Visit	0	0	6
Total across all categories			

Site accessibility to animals that are later consumed by humans:

Accessible to occasional food animals

How far are crops produced from the site?

Within 100m of the contamination

<https://www.contaminatedsites.org/site/6513/>

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<https://www.contaminatedsites.org.au/BS13/>

Toxic Sites Identification Program

Select one

No

1 Response

What is the groundwater used for?

Select one

If water at the site is contaminated, is there another source of clean water available?

No

Your choice

Move my site

Add new site

Login

Describe the access to the contaminated area:

Moderate access; entry more difficult

Describe the ground cover over the cor

There is complete grass cover

Source Industry:

Agriculture

Active / Legacy:

Legacy

Formal / Informal

Informal

PART 1
Screening Risk Assessment

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Detailed Assessment

PART 3
Release Risk

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Contaminated Sites

PART 5
Contaminated Sites

Documented Health Effects: No

Describe credible health impact of pollutant. Append any existing studies (scan and pdf) to Part 6. Indicate anecdotal evidence c

<https://www.contaminatedsites.org.au/BS13/>

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<https://www.contaminatedsites.org.au/BS13/>

Toxic Sites Identification Program

Additional Notes:

1 Response

Your choice

Move my site

Add new site

Login

PART 1
Screening Risk Assessment

PART 2
Detailed Assessment

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PART 4
Contaminated Sites

PART 5
Contaminated Sites

Part 3: Release Risk

Is there permanent surface water on the site?

No

What is it used for?

Select one

Is there evidence of a high water table or ground water?

No

Depth of the water table

Select a depth

Is the site in a flood plain?

<https://www.contaminatedsites.org.au/BS13/>

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04.02.2021

<https://www.contaminatedsites.org/site/6513/>

Toxic Sites Identification Program

Distance to the closest river or water body downstream of the contaminated site

↔ 1 km to 5 km

Distance to the closest well

↔ No well in vicinity

In which direction?

📍 Select a direction

Position of the contaminants relative to the slope

📍 Above ground level and slope is steep

Is this a storage facility for chemicals?

📍 No

Site Stakeholders

Number of stakeholders interviewed

↕ 1

Number of males

↕ Number of males

Num

Stakeholder Type

Other Agency 1

Name

<https://www.contaminatedsites.org/site/6513/>

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<https://www.contaminatedsites.org/site/6513/>

Toxic Sites Identification Program

Address

166100, Республика Коми, Сысольский район, с. Вишня, ул. Мира, д. 2а

166100, Komi Republic, Sysolsky district, Vizinga village, Mira street, building 2a

Phone Number

+7 82131 9-20-38

Email

komissiy@index.ru

Meeting Dates, Notes, & Key Findings

The meeting took place on September 23, 2020. Valentina Gabova told about the history of the warehouse
23.09.2020, встреча с работницей.

Linked reports and Images

📎 2020-11-19_15-10-44.png (1000x1000)

<https://www.contaminatedsites.org/site/6513/>

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<https://www.contaminatedsites.org/site/5513/>

Toxic Sites Identification Program

• [проба №22.jpg](#) lab protocol, sample # 22

• [проба №23.jpg](#) lab protocol, sample # 23

• [проба №24.jpg](#) lab protocol, sample # 24

• [проба №25.jpg](#) lab protocol, sample # 25

• [проба №26.jpg](#) lab protocol, sample # 26

• [проба №27.jpg](#) lab protocol, sample # 27

• [проба №28.jpg](#) lab protocol, sample # 28

• [проба №29.jpg](#) lab protocol, sample # 29

• [проба №30.jpg](#) lab protocol, sample # 30

• [21 проба Сысольский район, Вязинга.jpg](#) 50 meters from the warehouse building

• [22 проба Сысольский район, с. Вязинга.jpg](#) 3 meters from the warehouse building

• [23 проба Сысольский район, с. Вязинга.jpg](#) 30 meters from the warehouse building

• [24 проба Сысольский район, с. Вязинга.jpg](#) agricultural field

• [25 проба Сысольский район, с. Вязинга.jpg](#) agricultural field

• [26 проба Сысольский район, с. Вязинга.jpg](#) drainage channel

• [27 проба Сысольский район, с. Вязинга.jpg](#) potato field

Description

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PART 1
Screening Risk Assessment

PART 2
Physical Description

PART 3
Release Data

PART 4
Groundwater

PART 5
Linked reports and images

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<https://www.contaminatedsites.org/site/5513/>

Toxic Sites Identification Program

• [29 проба Сысольский район, с. Вязинга.jpg](#) new forest plantations

• [30 проба Сысольский район, с. Вязинга.jpg](#) next to the road

• [Протокол отбора проб с. Вязинга.xlsx](#) sample log (Russian)

• [Viaznga.pdf](#) test results (all samples)

• [sample_log_eng.xlsx](#) sample log (English)

• [viaznga_map.jpg](#) map (English)

Description

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Part 6 Expected Intervention Description

Describe possible measure that could be taken to mitigate risk. Please include an estimated timeframe and key activities:

Estimated volume of contaminant: Enter an estimated vo m²

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Screening Risk Assessment

PART 2
Physical Description

PART 3
Release Data

PART 4
Groundwater

PART 5
Linked reports and images

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Toxic Sites Identification Program

Describe long term intervention approach:

Note any physical, political or social barriers to the intervention:

Who is Local Champion? Provide contact details:

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Toxic Sites Identification Program

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Physical Contamination

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PART 5
Contaminated Site Management

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Site Assessment Report 5. RU-8530

Former pesticides warehouse, Prigorodny Village, Kargopol District, Arkhangelsk Oblast

The former pesticide warehouse is located near Prigorodny Village, Kargopol District of Arkhangelskaya Oblast.

The industrial zone is within 50 meters west from the warehouse. The nearest industrial building is within 150 meters southwest from the site. One- or two-story wooden residential buildings are within 65 meters east from the site. The distance to the center of the Prigorodny Village is 260 meters to the north.

The source of contamination is a former pesticide warehouse. The state farm Kargopol was the owner of the warehouse. The area of the former warehouse is 100 square meters. Nowadays the warehouse building is in poor condition.

In 2003-2004 JSC "Kargopol" repackaged the obsolete pesticides in five agricultural enterprises of the Kargopol District. The total amount of repackaged pesticides was 2298 kg.

The key pollutants are organochlorine pesticides.

People and animals can enter the site easily.

Surface runoff could carry pesticides off-site. The dust contaminated with pesticides could be carried by wind. People could be exposed to inhalation of vapors, inhalation and ingestion of dust, skin contact, or consumption animal products.

The conducted assessment did not confirm contamination on the site with pesticides.

1. Местоположение и географическое описание территории - территория с бывшим складом находится близ посёлка Пригородный Каргопольского района Архангельской области. В 150 метрах к юго-западу находится здание промышленного назначения. К западу от земельного участка в 50 м располагается промышленная зона. В 65 метрах на восток от земельного участка, на котором располагался склад с пестицидами, в настоящее время построены одно-двухэтажные деревянные жилые дома. Расстояние до центра населенного пункта - 260 метров на север.

2. Источник загрязнения - склад для хранения пестицидов. Склад располагается на земельном участке площадью 100 м. кв. Склад принадлежал ЗАО "Каргополь". Требовал ремонта.

Основные токсичные вещества - хлорорганические пестициды.

3. Способ миграции загрязняющих веществ - поверхностный смыв является средством переноса пестицидов по загрязненному участку, создавая риск загрязнения почвы и дальнейшего распространения с водой. Риск прямого воздействия на людей из-за содержания пестицидов в верхних слоях почвы или из-за распространения с участка посредством людей или ветра.

4. Пути экспозиции людей - попадание загрязнителя в организм человека при вдыхании пыли, употреблении загрязненной воды, пищи, выращенной на участке. Участок легко доступен для людей и домашних/диких животных.

5. Население, подвергающееся воздействию загрязнителя - сток с участка мог попадать с грунтовыми водами, на расстоянии до участка пасли скот, домашних животных, рядом жилые дома, гуляют дети. Получают питьевую воду централизованную. У местных жителей дома в основном деревянные. Детей в основном по двое в семьях. Жилые зоны частично находятся с подветренной стороны от источника воздушного загрязнения. В настоящее время люди не проходят возле источника загрязнения по дороге на работу/школу. По территории поселения проходят автодороги общего пользования.

6. По результатам исследования в 2020 году подтвердилось отсутствие риска от воздействия загрязнителя.

Longitude	Latitude	Date	Town/Area Name	Description of the sampling spot	Sampler Full Name	organochlorine pesticides, ppm
38,9117	61,5001	23.09.2020	Prigorodny Village	Land area overgrown with weeds	A. Sverlov	<0.01
38,91172	61,50008	23.09.2020	Prigorodny Village	Land area overgrown with weeds	A. Sverlov	<0.01
38,91177	61,50007	23.09.2020	Prigorodny Village	Land area overgrown with weeds	A. Sverlov	<0.01
38,91179	61,50003	23.09.2020	Prigorodny Village	Land area overgrown with weeds	A. Sverlov	<0.01
38,91183	61,5000	23.09.2020	Prigorodny Village	Land area overgrown with weeds	A. Sverlov	<0.01
38,91187	61,49997	23.09.2020	Prigorodny Village	Land area overgrown with weeds	A. Sverlov	<0.01
38,91175	61,5001	23.09.2020	Prigorodny Village	Land area overgrown with weeds	A. Sverlov	<0.01
38,91181	61,5001	23.09.2020	Prigorodny Village	Land area overgrown with weeds	A. Sverlov	<0.01
38,9119	61,50012	23.09.2020	Prigorodny Village	Land area overgrown with weeds	A. Sverlov	<0.01
38,91196	61,50012	23.09.2020	Prigorodny Village	Land area overgrown with weeds	A. Sverlov	<0.01
38,91206	61,50011	23.09.2020	Prigorodny Village	Land area overgrown with weeds	A. Sverlov	<0.01

38,9121	61,50013	23.09.2020	Prigorodny Village	Land area overgrown with weeds	A. Sverlov	<0.01
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Figure 18. Map of the site RU-8530



Figure 19. Residential buildings near the former warehouse



Figure 20. Sampling on the site



Figure 21. Residential buildings near the site

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<https://www.contaminatedsites.org/site/8530/>

Toxic Sites Identification Program

Site RU-8530

Investigator Details

Aleksandr Savelov

Private educational institution "Institute of Management"

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asavelov@iartecol.ru

This site was last update

Thursday, 04 February 2021 12:44:39 GMT

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ISA Status: Approved

Part 1 Screening Risk Assessment

Site Name

Former pesticides warehouse, Prigorodny Village, Kargopol District

Region

Eastern Europe, Northern Eurasia & Central Asia

Country

Russia

State

Arkhangel'skaya

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Toxic Sites Identification Program

Issue: ☐ Isolated site ☐ Regional problem

Key Pollutant:

Pesticides

Sub Pollutant:

Organochlorine not otherwise specified

Total population at risk:

617

Blacksmith Index

0

Description

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Screening Risk Assessment

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Release Rate

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Site Stakeholders

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Linked reports and images

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Toxic Sites Identification Program

Latitude:

61.50001

Longitude:

38.91169

Abstract

The former pesticide warehouse is located near Prigorodny Village, Kargopol District of Arkhangelskaya Oblast. One- or two-story wooden residential buildings are within 65 meters east from the site. The source of contamination is a former pesticide warehouse. The key pollutants are organochlorine pesticides. People and animals can enter the site easily. Surface runoff could carry pesticides off-site. The dust contaminated with pesticides could be carried by wind. People's inhalation and ingestion of dust, skin contact, or consumption animal products.

В ЗАО "Каргополь" в 2003-2004 гг были собраны устаревшие пестициды с пяти сельскохозяйственных предпри



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Toxic Sites Identification Program



Sample Group ID: 1, Key Pollutant: Organochlorine not otherwise specified, Test Result: 0.01

Sample Sector: 1		Key Pollutant: Pesticides		Sub Pollutant: Organochlorine not otherwise specified	
Properties: Targeted		Test Result: 0.01		Soil - Residential	
Bt:		Rec Level:		Latitude:	
		Level:		Longitude:	

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<https://www.contaminatedsites.org/ru/BS30/>

Toxic Sites Identification Program

Data Source Type:

☒ Investigator sampling (Lab or XRF)

Test Data Certainty:

☐ Low ☒ High

Data Source Description / Citation:

Certified Laboratory of Federal State Budgetary Institution "State Center of Agrochemical Service" Vologodsky". Nizhny Novgorod Region, RU.0001.21П408.
Lab protocol № 0.2754
Протокол №0.2754 от 13.11.2020 г.

Population Estimate

05 / 56

Population estimate confirmed by local authority:

- Sample Group ID: 2, Key Pollutant: Organochlorine not otherwise specified, Test Result: 0.01
- Sample Group ID: 3, Key Pollutant: Organochlorine not otherwise specified, Test Result: 0.01
- Sample Group ID: 4, Key Pollutant: Organochlorine not otherwise specified, Test Result: 0.01
- Sample Group ID: 5, Key Pollutant: Organochlorine not otherwise specified, Test Result: 0.01
- Sample Group ID: 6, Key Pollutant: Organochlorine not otherwise specified, Test Result: 0.01
- Sample Group ID: 7, Key Pollutant: Organochlorine not otherwise specified, Test Result: 0.01

<https://www.contaminatedsites.org/ru/BS30/>

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<https://www.contaminatedsites.org/ru/BS30/>

Toxic Sites Identification Program

- Sample Group ID: 8, Key Pollutant: Organochlorine not otherwise specified, Test Result: 0.01
- Sample Group ID: 10, Key Pollutant: Organochlorine not otherwise specified, Test Result: 0.01
- Sample Group ID: 11, Key Pollutant: Organochlorine not otherwise specified, Test Result: 0.01
- Sample Group ID: 12, Key Pollutant: Organochlorine not otherwise specified, Test Result: 0.01

Estimated additional population possibly at risk:

0.

Physical Description

Location & Site Description:

The former pesticide warehouse is located near Prigorodny Village, Kargopol District of Arkhangelskaya Oblast. The industrial zone is within 50 meters west from the warehouse. The nearest industrial building is within 150 meters is wooden residential buildings are within 65 meters east from the site. The distance to the center of the Prigorodny Village. The source of contamination is a former pesticide warehouse. The state farm Kargopol was the owner of the warehouse 100 square meters. Nowadays the warehouse building is in poor condition. In 2003-2004 JSC "Kargopol" repackaged the obsolete pesticides in five agricultural enterprises of the Kargopol District pesticides was 2296 kg. The key pollutants are organochlorine pesticides. People and animals can enter the site easily.

Size of Contaminated Area:

100 - 500 m²

Estimated depth of contamination:

20

<https://www.contaminatedsites.org/ru/BS30/>

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Toxic Sites Identification Program

↓ No

Is there a strong smell associated with the site attributed to contamination?

⊙ No

Soil Group

Soil Texture

Clay Content

Silt Content

Sand

%

%

Land Use

Population Density

Elev.

per km²

Land Use:

Natural Area %

👤 List the number of people in the following categories:

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Toxic Sites Identification Program

Live

0

0

30

Work

1

2

20

Visit

2

2

30

Total across all cate

Site accessibility to animals that are later consumed by humans:

🦋 Food animals / fish within 100m

How far are crops produced from the c

🌾 No crops are produced within

Type of Water Body:

💧 Small River / Stream

Is there possible groundwater contami

No

What is the groundwater used for?

💧 Not Known

If water at the site is contaminated, is there another source of clean water available?

Yes

Describe the access to the contaminated area:

Describe the ground cover over the cor

<https://www.contaminatedsites.org/site/5530/>

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<https://www.contaminatedsites.org/uk/BSQ/>

Toxic Sites Identification Program

Source Industry:

☒ Agriculture

Active / Legacy

☒ Legacy

Formal / Informal

☒ Formal

Documented Health Effects: ☒ No

Describe credible health impact of pollutant. Append any existing studies (scan and pdf) to Part 6. Indicate anecdotal evidence c

n/a

Данных о достоверном воздействии загрязнителя на здоровье человека не сохранилось. Склад хранения пк. Неофициальные данные о воздействии на здоровье человека: люди могли контактировать с загрязнением пт пыли или паров на загрязненной территории, через контакт с кожей или при потреблении воды с загрязнением. Люди могут опосредованно контактировать с загрязнением, если они употребляют в пищу растений, выращенных на загрязненной токсичными веществами почве.

Additional Notes:

<https://www.contaminatedsites.org/uk/BSQ/>

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<https://www.contaminatedsites.org/uk/BSQ/>

Toxic Sites Identification Program

Part 2 Release Risk

Is there permanent surface water on the site?

☒ No

What is it used for?

☒ Not Used

Is there evidence of a high water table or ground water?

☒ No

Depth of the water table

☒ Surface or near

Is the site in a flood plain?

☒ No

Distance to the closest river or water body downstream of the contaminated site

☒ 1 km to 5 km

Distance to the closest well

In which direction?

<https://www.contaminatedsites.org/uk/BSQ/>

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Toxic Sites Identification Program

Position of the contaminants relative to the slope

☒ Above ground level and slope is flat

Is this a storage facility for chemicals su

☒ No

Site Stakeholders

Number of stakeholders interviewed

Number of males

Num

Stakeholder Type

Other Agency 1

Name

Former warehouse employees

Address

Pavlovskoe rural settlement, 61°30'10" N; 38°54'59" E
Сельское поселение Павловское, 61°30'10" с. ш. 38°54'59" в. д.

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Toxic Sites Identification Program

Meeting Dates, Notes, & Key Findings

The meeting took place on September 23, 2020. Employees told about the repavage of the pesticides
23.09.2020 г. Рассказ о месте и работе склада, перетаривании пестицидов, складах.

Linked reports and Images

- ☐ [Протокол испытаний №0.2754 от 13.11.2020 г..pdf](#) lab protocol sample 34
- ☐ [Протокол испытаний №0.2755 от 13.11.2020 г..pdf](#) lab protocol sample 35
- ☐ [Протокол испытаний №0.2756 от 13.11.2020 г..pdf](#) lab protocol sample 36
- ☐ [Протокол испытаний №0.2757 от 13.11.2020 г..pdf](#) lab protocol sample 37
- ☐ [Протокол испытаний №0.2758 от 13.11.2020 г..pdf](#) lab protocol sample 38
- ☐ [Протокол испытаний №0.2759 от 13.11.2020 г..pdf](#) lab protocol sample 39
- ☐ [Протокол испытаний №0.2760 от 13.11.2020 г..pdf](#) lab protocol sample 70

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<https://www.contaminatedsites.org/site/6530/>

Toxic Sites Identification Program

- [Протокол испытаний № 0.2762 от 13.11.2020 г..pdf](#) lab protocol sample 9k
- [Протокол испытаний № 0.2763 от 13.11.2020 г..pdf](#) lab protocol sample 10k
- [Протокол испытаний № 0.2764 от 13.11.2020 г..pdf](#) lab protocol sample 11k
- [Протокол испытаний № 0.2765 от 13.11.2020 г..pdf](#) lab protocol sample 12k
- [samples_log_2020 Каргополь.Xls](#) sample log kinston
- [Бывший склад пестицидов. Жилые дома.jpg](#) residential buildings
- [Бывший склад пестицидов. Зарастание участка сорной растительностью.jpg](#) weeds on the site
- [Бывший склад пестицидов. Линия электрообеспечения.jpg](#) Power lines above the warehouse
- [Бывший склад пестицидов. Низинные места.jpg](#) weeds on the site
- [Бывший склад пестицидов. Определение координат.jpg](#) Finding coordinates
- [Бывший склад пестицидов. Отбор проб.jpg](#) sampling
- [Бывший склад пестицидов. Отбор проб.jpg](#) weeds on the site
- [Бывший склад пестицидов. Расстояние до жилых домов.jpg](#) residential buildings near the site
- [Бывший склад пестицидов. Расстояние до здания промышленного.jpg](#) industrial buildings
- [Бывший склад пестицидов. Рядом промзона.jpg](#) industrial zone near the site
- [Карта-схема Каргопольский район.pdf](#) map (Russian)

Description

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Toxic Sites Identification Program

- [Nuyordwiresk.pdf](#) lab protocol for Priigorodnyy Villages (English)
- [Priigorodnyy_mnq.jpg](#) map (English)

Description

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Unlinked reports and images

Part A Expected Intervention Description

Describe possible measure that could be taken to mitigate risk. Please include an estimated time frame and key activities:

Estimated volume of contaminant: Enter an estimated vol. m³

Initial intervention Type: Select an intervention type

Describe long term intervention approach:

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Contaminant Pathways

Note any physical, political or social barriers to the intervention:

Who is Local Champion? Provide contact details:

Activities carried out to date:

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Toxic Sites Identification Program

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Contaminant Pathways

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Site Assessment Report 6. RU-8531

Former pesticides warehouse, Rovdino Village, Shenkurskiy District, Arkhangelskaya Oblast

The source of contamination is a brick pesticide warehouse located in Shenkurskiy forestry enterprise, Shenkurskiy District of Arkhangelskaya Oblast. Currently the warehouse building is in ruins.

The last inventory of obsolete pesticides there was conducted in 2003. During that inventory 773 kg of obsolete pesticides were found.

The Puya River flows at a distance of 1 km from the site. There is industrial area within 400-600 meters from the site. The distance to the nearest settlement is 650 meters. The road is within 215 meters from the site.

The key pollutants are organochlorine pesticides.

Local residents do not have water supply and use drinking water from private wells.

Surface runoff could carry pesticides off-site. Residential areas are downwind of the site. The dust contaminated with pesticides could be carried by wind.

The site is easily accessible to people and animals. People could be exposed through inhalation of vapors, inhalation and ingestion of dust, skin contact or consumption of vegetables grown at the site.

The conducted assessment did not confirm contamination on the site with pesticides.

1. Местонахождение и географическое описание территории - территория Шенкурского лесхоза (лесопитомник), Шенкурского района. В настоящее время на участке склада нет. До реки Пуя 1 км, в 400-600 метрах - производственная зона, расстояние до населенного пункта Барановская - 650 метров.

2. Источник загрязнения - склад для хранения пестицидов типовой, кирпичный. В нем проходило перезатаривание устаревших пестицидов. Основные токсичные вещества - хлорорганические пестициды.

3. Способ миграции загрязняющих веществ - поверхностный смыв является средством переноса пестицидов за пределы загрязненного участка, создавая риск загрязнения почвы и дальнейшего распространения с водой. Риск прямого воздействия на людей из-за содержания пестицидов в верхних слоях почвы или из-за распространения с участка посредством людей или ветра.

4. Пути экспозиции людей - попадание загрязнителя в организм человека при вдыхании пыли, употреблении загрязненной воды, пищи, выращенной на участке. Участок легко доступен для людей и домашних/диких животных.

5. Население, подвергающееся воздействию загрязнителя - сток с участка мог попадать с грунтовыми водами в озеро, на расстоянии до жилой зоны пасли скот, в зоне жилых домов гуляют дети. Питьевая вода не централизованная. У местных жителей дома деревянные. Детей в основном по двое в семьях. Жилые зоны частично находятся с подветренной стороны от источника воздушного загрязнения. В настоящее время люди не проходят возле источника загрязнения по дороге на работу/школу. Расстояние до автотрассы 215 м.

6. По результатам исследования в 2020 году подтвердилось отсутствие риска от воздействия загрязнителя.

Longitude	Latitude	Date	Town/Area Name	Description of the sampling spot	Sampler Full Name	Organochlorine pesticides, ppm
42,50886	61,72452	07.10.2020	Rovdino Village	weeds on the site	A. Sverlov	<0.01
42,50882	61,72455	07.10.2020	Rovdino Village	weeds on the site	A. Sverlov	<0.01
42,50877	61,72458	07.10.2020	Rovdino Village	weeds on the site	A. Sverlov	<0.01
42,50873	61,72461	07.10.2020	Rovdino Village	weeds on the site	A. Sverlov	<0.01
42,5087	61,72466	07.10.2020	Rovdino Village	weeds on the site	A. Sverlov	<0.01
42,50866	61,72468	07.10.2020	Rovdino Village	weeds on the site	A. Sverlov	<0.01
42,50869	61,72445	07.10.2020	Rovdino Village	weeds on the site	A. Sverlov	<0.01
42,50866	61,72444	07.10.2020	Rovdino Village	weeds on the site	A. Sverlov	<0.01
42,50856	61,72442	07.10.2020	Rovdino Village	weeds on the site	A. Sverlov	<0.01
42,50844	61,7244	07.10.2020	Rovdino Village	weeds on the site	A. Sverlov	<0.01
42,50835	61,72438	07.10.2020	Rovdino Village	weeds on the site	A. Sverlov	<0.01
42,50829	61,72437	07.10.2020	Rovdino Village	weeds on the site	A. Sverlov	<0.01



Figure 22. Map of the site RU-8441



Figure 23. The ruins of the warehouse



Figure 24. Sampling on the site



Figure 25. Planting of the forestry enterprise and remains of the warehouse building

04.02.2021

<https://www.contaminatedsites.org/site/8531/>

Toxic Sites Identification Program

Site RU-8531

Investigator Details

Aleksandr Savelov

Private educational institution "Institute of Management"

+79115525660

asavelov@iartecol.ru

This site was last update

Thursday, 04 February 2021 13:08:01 GMT

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ISA Status: Approved

Part 1 Screening Risk Assessment

Site Name

Former pesticides warehouse, Roudino Village, Shenkurskiy District

Region

Eastern Europe, Northern Eurasia & Central As

Country

Russia

State

Ar

<https://www.contaminatedsites.org/site/8531/>

04.02.2021

<https://www.contaminatedsites.org/site/8531/>

Toxic Sites Identification Program

Issue: ☐ Isolated site ☐ Regional problem

Key Pollutant:

Pesticides

Sub Pollutant:

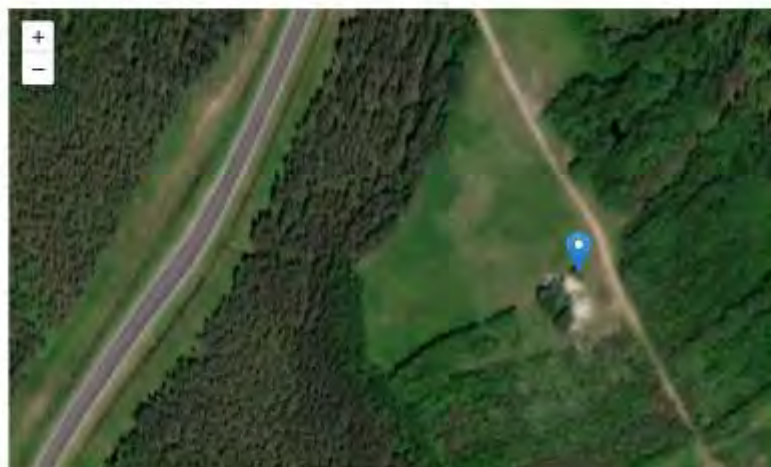
Organochlorine not otherwise spe

Total population at risk:

19

Blacksmith Index

0



<https://www.contaminatedsites.org/site/8531/>

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PART 5 Linked reports and images

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04.02.2021

<https://www.contaminatedsites.org/site/6531/>

Toxic Sites Identification Program

Latitude:

61.72452

Longitude:

42.50891

Abstract

The source of contamination is a brick pesticide warehouse located in Sherkurskiy forestry enterprise, Sherkurskiy Di the warehouse building is in ruins.
The key pollutants are organochlorine pesticides. Local residents do not have water supply and use drinking water from surface runoff could carry pesticides off-site. Residential areas are downwind of the site. The dust contaminated with pesticides is easily accessible to people and animals. People could be exposed through inhalation of vapors, inhalation and consumption of vegetables grown at the site.

В Шенкурском лесхозе (лесопитомник) Шенкурского района в 2003 году на момент инвентаризации числилось 7 г. пестициды находились лесхозе. Источник загрязнения - склад для хранения пестицидов туловой, кирпичный.



<https://www.contaminatedsites.org/site/6531/>

04.02.2021

<https://www.contaminatedsites.org/site/6531/>

Toxic Sites Identification Program



Measurement above recommended level: 0-1x 1-2x 2-3x 3-5x 5-25x >25x

Sample Group ID: 1, Key Pollutant: Organochlorine not otherwise specified, Test Result: 0.01

Sample Sector: 1		Bt:	
Key Pollutant: Pesticides		Sub Pollutant: Organochlorine not otherwise specified	
Properties: Targeted		Test Result: 0.01	
Soil - Residential		Latitude: Longitude:	

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<https://www.contaminatedsites.org/uk/BS11/>

Toxic Sites Identification Program

Data Source Type:

☒ Investigator sampling (Lab or XRF)

Test Data Certainty:

☐ Low ☒ High

Data Source Description / Citation:

Certified Laboratory of Federal State Budgetary Institution "State Center of Agrochemical Service" Vologodsky". N/A
RU.0001.21/1408. The protocol №0.2730

Протокол мониторинга № 0.2730 от 11.11.2020 г.

Population Estimate

☒ 2

Population estimate confirmed by local authority:

- Sample Group ID: 2, Key Pollutant: Organochlorine not otherwise specified, Test Result: 0.01
- Sample Group ID: 3, Key Pollutant: Organochlorine not otherwise specified, Test Result: 0.01
- Sample Group ID: 4, Key Pollutant: Organochlorine not otherwise specified, Test Result: 0.01
- Sample Group ID: 5, Key Pollutant: Organochlorine not otherwise specified, Test Result: 0.01
- Sample Group ID: 6, Key Pollutant: Organochlorine not otherwise specified, Test Result: 0.01
- Sample Group ID: 7, Key Pollutant: Organochlorine not otherwise specified, Test Result: 0.01

<https://www.contaminatedsites.org/uk/BS11/>

04.02.2021

<https://www.contaminatedsites.org/uk/BS11/>

Toxic Sites Identification Program

- Sample Group ID: 8, Key Pollutant: Organochlorine not otherwise specified, Test Result: 0.01
- Sample Group ID: 10, Key Pollutant: Organochlorine not otherwise specified, Test Result: 0.01
- Sample Group ID: 11, Key Pollutant: Organochlorine not otherwise specified, Test Result: 0.01
- Sample Group ID: 12, Key Pollutant: Organochlorine not otherwise specified, Test Result: 0.01

Estimated additional population possibly at risk:

0.

Physical Description

Location & Site Description:

The source of contamination is a brick pesticide warehouse located in Sherkurskiy forestry enterprise, Sherkurskiy Di the warehouse building is in ruins.

The last inventory of obsolete pesticides there was conducted in 2003. During that inventory 771 kg of obsolete pesticides. The Puya River flows at a distance of 1 km from the site. There is industrial area within 400-600 meters from the site. 650 meters. The road is within 215 meters from the site.

The key pollutants are organochlorine pesticides.

Local residents do not have water supply and use drinking water from private wells.

Surface runoff could carry pesticides off-site. Residential areas are downwind of the site. The dust contaminated with pesticides. The site is easily accessible to people and animals. People could be exposed through inhalation of vapors, inhalation of

Size of Contaminated Area:

☒ 100 - 500 m²

Estimated depth of contamination:

10

<https://www.contaminatedsites.org/uk/BS11/>

04.02.2021

<https://www.contaminatedsites.org/site/551/>

Toxic Sites Identification Program

↓ No

Is there a strong smell associated with the site attributed to contamination?

⦿ No

Soil Group	Soil Texture	
PODZOLS_HISTOSOLS	Coarse	
Clay Content	Silt Content	Sand
11	% 44	% 44
Land Use	Population Density	Elev.
Forestry		per km ² 6

Land Use:

Natural Area %

👤 List the number of people in the following categories:

<https://www.contaminatedsites.org/site/551/>

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<https://www.contaminatedsites.org/site/551/>

Toxic Sites Identification Program

Live	0	0	0
Work	0	1	2
Visit	0	0	3
Total across all cate			

Site accessibility to animals that are later consumed by humans:

🚶 Accessible to occasional food animals.

How far are crops produced from the c

🌾 Crops are produced in the cont

Type of Water Body:

🌊 Large River

Is there possible groundwater contami

Yes

What is the groundwater used for?

🌊 Not Known

If water at the site is contaminated, is there another source of clean water available?

Yes

Describe the access to the contaminated area:

Describe the ground cover over the cor

<https://www.contaminatedsites.org/site/551/>

3018

04.02.2021

https://www.contaminatedsites.org/uk/BS11/

Toxic Sites Identification Program

Source Industry:

☒ Naturally Occurring

Active / Legacy

☒ Legacy

Formal / Informal

☒ Formal

Documented Health Effects: ☒ No

Describe credible health impact of pollutant. Append any existing studies (scan and pdf) to Part 6. Indicate anecdotal evidence c
n/a

Достоверного воздействия загрязнителя на здоровье нет. Неофициальные данные о воздействии на здоровье
загрязняющих веществ - поверхностный слой является средством переноса пестицидов за пределы загрязн
загрязнения почвы и дальнейшего распространения с водой, риск прямого воздействия на людей из-за содер
почвы или из-за распространения с участка посредством людей или ветра.

Additional Notes:

https://www.contaminatedsites.org/uk/BS11/

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https://www.contaminatedsites.org/uk/BS11/

Toxic Sites Identification Program

Part 2 Release Risk

Is there permanent surface water on the site?

☒ No

What is it used for?

☒ Unknown

Is there evidence of a high water table or ground water?

☒ No

Depth of the water table

☒ Unknown

Is the site in a flood plain?

☒ No

Distance to the closest river or water body downstream of the contaminated site

☒ 300 m to 1 km

Distance to the closest well

In which direction?

https://www.contaminatedsites.org/uk/BS11/

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<https://www.contaminatedsites.org/site/6531/>

Toxic Sites Identification Program

Position of the contaminants relative to the slope

☒ Above ground level and slope is flat

Is this a storage facility for chemicals?

☒ No

Site Stakeholders

Number of stakeholders interviewed

Add -

Number of males

Number of males

Num

Stakeholder Type

Other Agency 1

Name

Forestry workers / Работники лесничества

Address

165160, Arkhangelskaya Oblast, the city of Shenkursk, Usadba Leskhoz street
165160, Архангельская область, город Шенкурск, улица Усадьба лесхоза

<https://www.contaminatedsites.org/site/6531/>

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04.02.2021

<https://www.contaminatedsites.org/site/6531/>

Toxic Sites Identification Program

Meeting Dates, Notes, & Key Findings

07.10.2020 r. The workers told the history of the warehouse

Рассказ о месте и работе склада, перепарнивании пестицидов, объемах.

Linked reports and Images

- ☒ [Протокол испытаний №0.2730 от 11.11.2020 г. pdf lab protocol/sample 10](#)
- ☒ [Протокол испытаний №0.2731 от 11.11.2020 г. pdf lab protocol/sample 11](#)
- ☒ [Протокол испытаний №0.2732 от 11.11.2020 г. pdf lab protocol/sample 12](#)
- ☒ [Протокол испытаний №0.2733 от 11.11.2020 г. pdf lab protocol/sample 13](#)
- ☒ [Протокол испытаний №0.2734 от 11.11.2020 г. pdf lab protocol/sample 14](#)
- ☒ [Протокол испытаний №0.2735 от 11.11.2020 г. pdf lab protocol/sample 15](#)
- ☒ [Протокол испытаний №0.2736 от 11.11.2020 г. pdf lab protocol/sample 16](#)

<https://www.contaminatedsites.org/site/6531/>

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<https://www.contaminatedsites.org/site/6531/>

Toxic Sites Identification Program

- [Протокол испытаний № 0.2738 от 11.11.2020 г..pdf](#) lab protocol sample 911
- [Протокол испытаний № 0.2739 от 11.11.2020 г..pdf](#) lab protocol sample 1011
- [Протокол испытаний № 0.2740 от 11.11.2020 г..pdf](#) lab protocol sample 1111
- [Протокол испытаний № 0.2741 от 13.11.2020 г..pdf](#) lab protocol sample 1211
- [samples_log_2020 Шенкурск.xls](#) sample log Russian
- [Бывший склад пестицидов. Дорога к складу.jpg](#) the road to the warehouse
- [Бывший склад пестицидов. Зарастание территории дравесно-кустарниковой растительностью.jpg](#)
- [Бывший склад пестицидов. Определение координат.jpg](#) taking coordinate
- [Бывший склад пестицидов. Остатки деревянных полов.jpg](#) ruins of the warehouse
- [Бывший склад пестицидов. Остатки кирпичных стен, заколоченного окна.jpg](#) ruins of the warehouse
- [Бывший склад пестицидов. Остатки разрушенной шиферной крыши.jpg](#) the main roof of the warehouse
- [Бывший склад пестицидов. Отбор проб.jpg](#) sampling
- [Бывший склад пестицидов. Посадки лесопитомника.jpg](#) forestry enterprise
- [Бывший склад пестицидов. Разрушен.jpg](#) ruins of the warehouse
- [Бывший склад пестицидов. Территория вокруг заросла сорной растительностью.jpg](#) for the warehouse
- [Бывший склад пестицидов. Фундамент.jpg](#) foundation of the warehouse building

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Toxic Sites Identification Program

- [Карты с/всел Шенкурский район.pdf](#) ruco Russian
- [Roadline.pdf](#) lab protocol for Roadline Village (all withpicall)
- [Roadline_map.jpg](#) map (English)

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Expected Intervention Description

Describe possible measure that could be taken to mitigate risk. Please include an estimated timeframe and key activities:

Estimated volume of contaminant: Enter amount in m³

Initial Intervention Type: Select an intervention type

Describe long term intervention approach:

<https://www.contaminatedsites.org/site/6531/>

1478

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<https://www.contaminatedsites.org.uk/b531/>

Toxic Sites Identification Program

Note any physical, political or social barriers to the intervention:

Who is Local Champion? Provide contact details:

Activities carried out to date:

<https://www.contaminatedsites.org.uk/b531/>

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<https://www.contaminatedsites.org.uk/b531/>

Toxic Sites Identification Program

15/03/2020

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Groundwater

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<https://www.contaminatedsites.org.uk/b531/>

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Site Assessment Report 7. RU-8543

Former warehouse of pesticides, Atamanovo Village, Sukhobuzimsky District

The former warehouse of pesticides is located next to the Children's Camp "Taezhny" in the village of Atamanovo, Sukhobuzimsky District. The camp is located in a pine forest on the bank of the Yenisei River 100 km north of Krasnoyarsk city.

The Atamanovo Village is located 400 meters from the warehouse. The Yenisei River flows southeast of the warehouse.

The village of Atamanovo is located 28 km from the regional center Sukhobuzimskoye Village. The population of Atamanovo Village is 1968 people. There is a school for 290 students in the village. About 1500 children come to the camp during the summer.

The central farmstead of the Taezhny breeding farm is located in Atamanovo Village. Residential buildings in the village are mostly wooden one-story houses with solid fuel stove heating. The water supply is centralized. Also there is a deep-water well and a water tower in the village.

The wooden warehouse building now is completely destroyed. Only the concrete foundation remains. The area of the warehouse building was 10*14 meters. The site is covered with rubble of the former warehouse building.

The last inventory of the warehouse was conducted during the ACAP project "Environmental justification for the management of the stock of obsolete pesticides in the Russian Federation" in 2008. The specialists found about 1 ton of pesticides that appeared to be DDT at the site. The powder was light gray in color with a specific odor packed in decayed paper bags with poorly readable labels.

The project team did not find traces of pesticides and didn't smell DDT during the site assessment in October 2020. The garbage and rubble of the warehouse building remained the same as in 2008.

The rainfall and wind could wash pesticides away and carry around the area.

The project team did not find evidence of human activities within 100 meters from the site.

The migration of pesticides to the residential areas is possible through air, by rain flow, with melt waters and by transport passing by. There is no curbstone on the asphalt road adjacent to the warehouse.

Former workers of Taezhny Camp said that DDT was used as an insecticide against flies, mosquitoes, gadflies. Workers pollinated forest areas and fields adjacent to the camp.

Former camp worker Vasily Savelyevich Kushnir (phone +7 323 305 59 69) confirmed the presence of DDT in the former warehouse. He said that it was used in the camp.

Former camp worker Olga Anatolyevna Takbilatova (phone +7 963 254 97 25) also confirmed the presence and use of pesticides.

They didn't have information that the pesticides were removed from the site and taken to a landfill.

The project team took samples from 3 sides of the warehouse. They also took line samples in two directions: towards the Yenisei River and towards the village of Atamanovo. The migration of pesticides in both directions is most likely with water and wind.

The soil at the site contains gravel has a high absorption capacity, so pollutants could penetrate deep into the soil.

The nearest residential building doesn't have central water supply. The residents bring water from a well for drinking. There was no evidence of pesticide poisoning among local population.

The area of the camp is fenced and guarded. The children cannot get to the warehouse.

There is very little traffic near the. During the three days visiting the site, the investigators recorded the one truck and two cars passing by.

The site assessment found trace amounts of organochlorine pesticides at the site.

Склад находится на территории Муниципального унитарного предприятия Детский спортивно-оздоровительный комплекс «Таежный» (МУП ДСОК «Таежный») в районе бывшего лагеря №4 в поселке Атаманово Сухобузимского района Красноярского края на берегу реки Енисей в сосновом бору. Участок расположен в 100 км от города Красноярска в северном направлении. Лагерь № 4 ликвидирован в порядке реконструкции. Поселок Атаманово находится в 28 км от районного центра с. Сухобузимское. Население поселка составляет 1968 человек. В поселке имеется общеобразовательная школа на 290 учеников. Детский оздоровительный лагерь «Таежный», принимает до 1500 детей за смену.

В п. Атаманово находится центральная усадьба племзавода «Таежный». Жилые дома в основном деревянные, одноэтажные с печным отоплением. Водоснабжение поселка централизовано, имеется глубоководная скважина, водонапорная башня.

На участке расположен деревянный склад размером 10 x 14 м, полностью разрушенный. От здания сохранился только бетонный пол, заваленный

мусором и остатками конструкций склада. В период проведения работ по углубленной инвентаризации запасов устаревших пестицидов, выполняемого в рамках проекта АКАП «Экологическое обоснование управление запасом устаревших пестицидов на территории Российской Федерации» в 2008 году, на развалинах склада в рассыпанном состоянии в полуистлевших бумажных пакетах и мешках с нечитающей маркировкой находился предположительно ДДТ светло-серого цвета около 1 тонны с сильным характерным запахом. Диаметр кучи составил диаметре 10 м. В период проведения экологической оценки участка в октябре 2020 г. запах не ощущался. Мусор и обломки склада находились на прежнем месте, видимых следов пестицидов не обнаружено. На территории, прилегающей к складу, находятся разрушенные производственные постройки. В 5 м от склада проходит асфальтированная дорога, идущая из поселка Атаманово к жилому дому на 3 квартиры на территории оздоровительного комплекса. В доме проживает 5 человек. Расстояние до склада 250 м.

При обследовании бывшего склада было сделано предположение, что ранее хранящиеся в нем пестициды препараты никуда не вывозились, а были размыты сезонными водами, дождевыми осадками и разнесены ветром.

Поселок Атаманово находится на расстоянии 400 метров от склада. Река Енисей протекает в юго-восточном направлении от склада. Тропинок и мест пребывания людей в радиусе 100 м от склада не установлено. Перенос пестицидов к зонам жилых застроек возможен по воздуху, а также дождевыми и талыми водами и проезжающим мимо автотранспортом. На прилегающей к складу асфальтированной дороге не имеется бордюрного камня.

Со слов бывших работников МУП ДСОК «Таежный», дуст ДДТ использовался в качестве инсектицида при борьбе с насекомыми (мухами, комарами, оводами). Им опыляли участки леса и поля, прилегающие к лагерю.

Бывший работник лагеря № 4 Кушнир Василий Савельевич (т. 8 323 305 59 69), подтвердил наличие в бывшем складе дуста ДДТ и его применение на территории лагеря. Бывший работник лагеря Такбылатова Ольга Анатольевна (т. 8 963 254 97 25) также подтвердила наличие и применение данного препарата. Сведений о возможном вывозе веществ с разрушенного склада на полигон длительного хранения не имеется.

Одна из сторон бывшего склада в северном направлении прилегала к производственной постройке с бетонным полом. Постройка в настоящее время полностью разрушена. Сетевые пробы отобраны с 3-х сторон склада, где имеется почвенный покров, а линейные пробы отобраны в двух направлениях: в сторону р. Енисей и в сторону п. Атаманово. Перенос пестицидов в обоих выбранных направлениях наиболее вероятен паводковыми водами и ветром. В летнее время перенос пестицидов дождевыми осадками маловероятен, т.к. грунты гравелистые, имеют высокую поглощающую способность, поэтому загрязняющие вещества могли проникнуть глубоко в почву. Ближайший жилой

дом не имеет центрального водоснабжения, вода привозная. Случаев отравления ядохимикатами среди местного населения не установлено.

Территория оздоровительного комплекса «Таежный» огорожена и охраняется. Каждый из имеющихся 6 лагерей также огорожен. Перемещения детей по территории бывшего лагеря №4 исключено.

Движения транспорта возле участка имеет случайный характер. В период проведения исследований за три дня нахождения исследователей в данном месте зафиксирован проезд трех единиц автотранспорта: 1 грузовая машина и 2 легковых.

Longitude	Latitude	Date	Town/Area Name	Description of the sampling spot	Sampler Full Name	4,4-DDT, Ppm	alpha-HCH, ppm	gamma-HCH (lindane), ppm	Hexachlorobenzene, ppm	DDD, ppm	DDE, ppm
93,666281	56,406402	24.10.2020	Atamanovo Village	The area of the warehouse	S. Kuligin V. Kolpashchikov	0,0031	0,0016	0,00023	0	0,0019	0,00064
93,667225	56,406449	24.10.2020	Atamanovo Village		S. Kuligin V. Kolpashchikov	0,017	0,00055	0,00025	0,0002	0,0064	0,0046
93,666169	56,406644	24.10.2020	Atamanovo Village		S. Kuligin V. Kolpashchikov	0,012	0,0007	0,00011	0,00038	0,0023	0,0073
93,667084	56,406707	24.10.2020	Atamanovo Village		S. Kuligin V. Kolpashchikov	0,0015	0,00022	0,00011	0	0	0,0014
93,664014	56,406691	24.10.2020	Atamanovo Village		S. Kuligin V. Kolpashchikov	0,013	0,0007	0,00011	0,0012	0,0019	0,011
93,662182	56,406613	24.10.2020	Atamanovo Village		S. Kuligin V. Kolpashchikov	0,02	0,0027	0,00054	0,0011	0,0017	0,009
93,666619	56,405575	24.10.2020	Atamanovo Village		S. Kuligin V. Kolpashchikov	0,014	0,00058	0,0007	0,00016	0,0014	0,011
93,666845	56,404583	24.10.2020	Atamanovo Village		S. Kuligin V. Kolpashchikov	0,028	0,009	0,0011	0,0008	0,0021	0,01





Figure 24. General view



Figure 25. The remains of the warehouse building

04.02.2021

<https://www.contaminatedsites.org/site/8543/>

Toxic Sites Identification Program

Site RU-8543

Investigator Details

Vasily Kuligin

Federal State Unitary Enterprise "Siberian Scientific and Research Institute of Engineering and Reclamation"

+7-913-637-43-33 or +7-391-244-39-09

vasil@engr.ru

This site was last update

Thu Feb 04 2021 13:16:01 GMT

Available Snapshots:

Wed Feb 03 2021 12:59:12 GMT

Would you like to continue edit?

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PART 1
Screening Risk Assessment

PART 2
Physical Description

PART 3
Release Data

PART 4
Site Stakeholders

PART 5
Linked reports and images

ISA Status: **Approved**

Part 1 Screening Risk Assessment

Site Name

Former warehouse of pesticides, Atomnovo Village, Sukhobuzimsky District

Region

Country

State

<https://www.contaminatedsites.org/site/8543/>

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Toxic Sites Identification Program

ISS Date

October 24, 2020

ISS Complete

☒ Yes

Issue: ☐ Isolated site ☐ Regional problem

Key Pollutant:

Pesticides

Sub Pollutant:

DDT

Total population at risk:

1887

Blacksmith Index

1

Description

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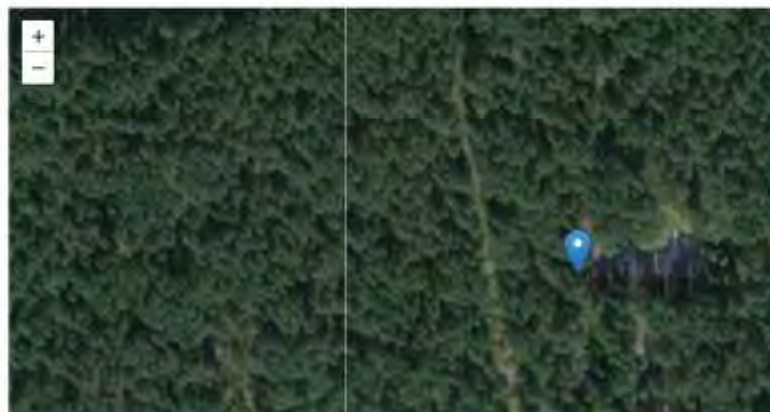
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Toxic Sites Identification Program



Latitude:

56.406402

Longitude:

93.666281

Abstract

The former warehouse of pesticides is located next to the Children's Camp "Taezhny" in the village of Atamanovo, Suk. The wooden warehouse building now is completely destroyed. Only the concrete foundation remains. The rainfall and wind could wash pesticides away and carry around the area. The migration of pesticides to the resider flow, with melt waters and by transport passing by. The site assessment found trace amounts of organochlorine pesticides at the site.

Бывший склад химикатов на территории МУП ДООК «Тазенчан», расположенный в п. Атаманово Сухобузимского (предположительно) в надушенных упаковках. Склад полностью разрушен. В связи с этим возможны способы с транспортом, дождевыми осадками, талыми водами. Расстояние до отдельно стоящего жилья – 250 м., до реки



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Toxic Sites Identification Program



Measurement above recommended level: 0-1x 1-2x 2-3x 3-5x 5-25x >25x

Sample Group ID: 1, Key Pollutant: DDT, Test Result: 0

Sample Sector: 1		BI: 0
Key Pollutant: Pesticides		Rec Level: 1.7
Sub Pollutant: DDT		Loca
Properties: Composite	Test Result: 0.0031	

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Toxic Sites Identification Program

Inhalation

56,406402

Data Source Type:

Investigator sampling (lab or XRF)

Test Data Certainty:

High

Data Source Description / Citation:

Certified laboratory "Center for environmental development and audit"
Protocol #02-164

Population Estimate

41

Population estimate confirmed by local authority

- Sample Group ID: 1, Key Pollutant: DDT, Test Result: 0.02
- Sample Group ID: 1, Key Pollutant: DDT, Test Result: 0.01
- Sample Group ID: 1, Key Pollutant: DDT, Test Result: 0
- Sample Group ID: 1, Key Pollutant: HCH (Hexachlorocyclohexane), Test Result: 0
- Sample Group ID: 1, Key Pollutant: HCH (Hexachlorocyclohexane), Test Result: 0

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Toxic Sites Identification Program

- Sample Group ID: 1, Key Pollutant: HCH (Hexachlorocyclohexane), Test Result: 0
- Sample Group ID: 1, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0
- Sample Group ID: 1, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0
- Sample Group ID: 1, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0
- Sample Group ID: 1, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0
- Sample Group ID: 1, Key Pollutant: Hexachlorobenzene (Benzene Hexachloride), Test Result: 0
- Sample Group ID: 1, Key Pollutant: Hexachlorobenzene (Benzene Hexachloride), Test Result: 0
- Sample Group ID: 1, Key Pollutant: Hexachlorobenzene (Benzene Hexachloride), Test Result: 0
- Sample Group ID: 1, Key Pollutant: Hexachlorobenzene (Benzene Hexachloride), Test Result: 0
- Sample Group ID: 1, Key Pollutant: Other, Test Result: 0
- Sample Group ID: 1, Key Pollutant: Other, Test Result: 0.01
- Sample Group ID: 1, Key Pollutant: Unspecified, Test Result: 0
- Sample Group ID: 1, Key Pollutant: Other, Test Result: 0
- Sample Group ID: 1, Key Pollutant: Other, Test Result: 0
- Sample Group ID: 1, Key Pollutant: Other, Test Result: 0
- Sample Group ID: 1, Key Pollutant: Other, Test Result: 0.01
- Sample Group ID: 1, Key Pollutant: Other, Test Result: 0
- Sample Group ID: 2, Key Pollutant: DDT, Test Result: 0.01
- Sample Group ID: 2, Key Pollutant: DDT, Test Result: 0.02
- Sample Group ID: 2, Key Pollutant: HCH (Hexachlorocyclohexane), Test Result: 0
- Sample Group ID: 2, Key Pollutant: HCH (Hexachlorocyclohexane), Test Result: 0

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Toxic Site Identification Program

- ▶ Sample Group ID: 1, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0
- ▶ Sample Group ID: 2, Key Pollutant: Hexachlorobenzene (Benzene Hexachloride), Test Result: 0
- ▶ Sample Group ID: 2, Key Pollutant: Hexachlorobenzene (Benzene Hexachloride), Test Result: 0
- ▶ Sample Group ID: 2, Key Pollutant: Other, Test Result: 0
- ▶ Sample Group ID: 2, Key Pollutant: Other, Test Result: 0
- ▶ Sample Group ID: 2, Key Pollutant: Other, Test Result: 0.01
- ▶ Sample Group ID: 2, Key Pollutant: Other, Test Result: 0.01
- ▶ Sample Group ID: 3, Key Pollutant: DDT, Test Result: 0.01
- ▶ Sample Group ID: 3, Key Pollutant: DDT, Test Result: 0.03
- ▶ Sample Group ID: 3, Key Pollutant: HCH (Hexachlorocyclohexane), Test Result: 0
- ▶ Sample Group ID: 3, Key Pollutant: HCH (Hexachlorocyclohexane), Test Result: 0.01
- ▶ Sample Group ID: 3, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0
- ▶ Sample Group ID: 3, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0
- ▶ Sample Group ID: 3, Key Pollutant: Hexachlorobenzene (Benzene Hexachloride), Test Result: 0
- ▶ Sample Group ID: 3, Key Pollutant: Hexachlorobenzene (Benzene Hexachloride), Test Result: 0
- ▶ Sample Group ID: 3, Key Pollutant: Other, Test Result: 0
- ▶ Sample Group ID: 3, Key Pollutant: Other, Test Result: 0
- ▶ Sample Group ID: 3, Key Pollutant: Other, Test Result: 0.01
- ▶ Sample Group ID: 3, Key Pollutant: Other, Test Result: 0.01

Estimated additional population possibly at risk:

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Toxic Site Identification Program

Physical Description

Location & Site Description:

The former warehouse of pesticides is located next to the Children's Camp "Taszhny" in the village of Atamanovo, Suk in a pine forest on the bank of the Yenisei River 100 km north of Krasnoyarsk city. The Atamanovo Village is located 400 meters from the warehouse. The Yenisei River flows southeast of the warehouse. The village of Atamanovo is located 28 km from the regional center Sukhobuzimskoye Village. The population of Atamanovo is 290 students in the village. About 1500 children come to the camp during the summer. The central farmstead of the Taszhny breeding farm is located in Atamanovo Village. Residential buildings in the village with solid fuel stove heating. The water supply is centralized. Also there is a deep-water well and a water tower in the village. The wooden warehouse building now is completely destroyed. Only the concrete foundation remains. The area of the site is covered with rubble of the former warehouse building.

Size of Contaminated Area:

✚ < 100 m²

Estimated depth of contamination:

(Estimated depth)

Was a test pit dug to determine depth of contamination?

↓ No

Is there a strong smell associated with the site attributed to contamination?

⊖ No

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Toxic Sites Identification Program

KASTANOZEMS, CHERNOZEMS, PHAEZOZEMS, LMBRISOLS

Medium

Use: 000000

Clay Content		Silt Content		Sand	
21	%	40	%	39	%
Land Use		Population Density		Elev:	
Urban		per km ²		1:	

- [View history](#)
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Land Use:

Natural Area ☒ Vacant Land ☒

List the number of people in the following categories:

	On Site	Within 50 meters	Within 100 meters
Live	0	76	331
Work	0	52	120
Total across all cate			

PART 1
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Impact Assessment

PART 3
Impact Plan

PART 4
Contaminated Site

PART 5
Contaminated Site

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Toxic Sites Identification Program

Visit	0	8	9
Total across all cate			

Use: 000000

Site accessibility to animals that are later consumed by humans:

Select one

How far are crops produced from the p

No crops are produced within

Type of Water Body:

Large River

Is there possible groundwater contami

No

What is the groundwater used for?

Not Known

If water at the site is contaminated, is there another source of clean water available?

No

Describe the access to the contaminated area:

Easy access, few barrier to entry

Describe the ground cover over the cor

The site is covered with concrete o condition

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Toxic Sites Identification Program

☒ Agriculture

Active / Legacy

☒ Legacy

Formal / Informal

☒ Formal

Documented Health Effects: ☒ No

Describe credible health impact of pollutant. Append any existing studies (scan and pdf) to Part 6. Indicate anecdotal evidence c
n/8

Случаев отравления ядохимикатами среди местного населения не установлено.

Additional Notes:

1 Response

View history

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PART 1
Location Risk Assessment

PART 2
Physical Contaminants

PART 3
Biological Risk

PART 4
Site Investigation

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Contaminant Assessment

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Toxic Sites Identification Program

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1 Response

Is there permanent surface water on the site?

☒ No

What is it used for?

Select a use

Is there evidence of a high water table or ground water?

☒ No

Depth of the water table

Select a depth

Is the site in a flood plain?

☒ No

Distance to the closest river or water body downstream of the contaminated site

Select a distance

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Location Risk Assessment

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Physical Contaminants

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Site Investigation

PART 5
Contaminant Assessment

Distance to the closest well

No well in vicinity

In which direction?

Select a direction

Position of the contaminants relative to the slope

Above ground level and slope is steep

Is this a storage facility for chemicals s

☒ No

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Toxic Sites Identification Program

Number of stakeholders interviewed: 2
Number of males: 1
Number of females: 1

Stakeholder Type

Other Agency 1

Name

Olga Anatolyevna Taktbilatova

Address

Phone Number

+7 963 254 97 25

Email

Meeting Dates, Notes, & Key Findings

<https://www.contaminatedsites.org/site/8543/>

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Toxic Sites Identification Program

Stakeholder Type

Other Agency 1

Name

Vasily Savelyevich Koshnir

Address

Phone Number

phone +7 323 305 59 69

Email

Meeting Dates, Notes, & Key Findings

<https://www.contaminatedsites.org/site/8543/>

Contaminated Sites

View Map

View my site

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PART 1
Toxic Site Risk Assessment

PART 2
Toxic Site Remediation

PART 3
Toxic Site

PART 4
Stakeholder

PART 5
Toxic Site Remediation

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Contaminated Sites

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Toxic Site Remediation

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Toxic Site

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PART 5
Toxic Site Remediation

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Toxic Sites Identification Program



Part 2: Linked reports and Images

- 01 Карта района обследования.PNG map—location of the site
- 02 Участок обследования (п. Атаманово).png section map Russian
- 03 Территория Вид разрушенного склада.JPG the ruins of the warehouse building
- 04 Территория разрушенного склада.JPG the ruins at the warehouse building
- 05 Территория разрушенного склада.JPG the area of the former warehouse
- 06 Территория разрушенного склада.jpg destruction of the warehouse building
- 07 Место отбора сетевых проб № 1А,2А.jpg general view
- 08 Точка отбора сетевой пробы.jpg soil on the site
- 09 Направление отбора линейных № 1П,А,2П,А (на р. Енисей).jpg general view

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Toxic Sites Identification Program

- 11 Дорога возле разрушенного склада.jpg the road near the warehouse
- 12 Схема отбора сетевых проб.pdf sampling scheme
- 13 Схема отбора линейных проб.pdf sampling scheme
- 14 Координаты точек отбора линейных проб.jpeg handwritten coordinates
- 15 Координаты точек отбора сетевых проб.jpeg handwritten coordinates
- Протокол отбора проб (п. Атаманово).xls sample log Russian
- 01.pdf lab protocol 02-164
- 02.pdf lab protocol 02-165
- 03.pdf lab protocol 02-166
- 04.pdf lab protocol 02-167
- 05.pdf lab protocol 02-168
- 06.pdf lab protocol 02-169
- 07.pdf lab protocol 02-170
- 1-0008.pdf lab protocol 02-171
- Atamanovo.pdf lab (protocol) for Atamanovo Village (all samples)
- sample_log_Atamanovo_eng.xls sample log english

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Toxic Sites Identification Program

Expected Intervention Description

Describe possible measure that could be taken to mitigate risk. Please include an estimated time frame and key activities:

Estimated volume of contaminant: m³

Initial intervention type:

Describe long term intervention approach:

<https://www.contaminatedsites.org/sa/8543/>

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Toxic Sites Identification Program

Note any physical, political or social barriers to the intervention:

Who is Local Champion? Provide contact details:

Activities carried out to date:

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1 background

View history

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Toxicity Risk Assessment

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Physical Contaminant

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Physical Risk

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Social Contaminant

PART 5
Contaminant Contamination

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1 background

View history

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Logout

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Toxicity Risk Assessment

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Physical Contaminant

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Physical Risk

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Social Contaminant

PART 5
Contaminant Contamination

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Toxic Sites Identification Program

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Screening Risk Assessment

PART 2
Physical Characterisation

PART 3
Receptor Risk

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Land Use/Receptors

PART 5
Contaminant Data Management

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Site Assessment Report 8. RU-8544

Pesticide warehouse in Mokrushenskoye Village of Kazachinsky District, Krasnoyarsky krai

The obsolete pesticide warehouse is located in Mokrushenskoye Village, Kazachinsky District, Krasnoyarsky krai. Currently the warehouse building belongs to local farm. The warehouse has not operated for about 25 years. The warehouse building is wooden and consists of two identical sections. The size of the building is 6 * 8 meters. The warehouse has a slate roof, which is partially destroyed. There are holes in the walls. The windows of the building are filled with boards. There are no locks on the wooden doors, the floor of the warehouse is ground.

The nearest residential buildings are located 120 m to the northwest. The distance to the forest is 200 m. The Yenisei River is within 1.2 km. The area of the warehouse is fenced.

In 2008 there was an inventory of the warehouse during the ACAP project "Environmental justification for the management of the stock of obsolete pesticides in the Russian Federation". The specialists found about 3,5 tons of obsolete pesticides including: tseb in tubes and in bulk - 285 kg, granosan in barrels - 825 kg, 2.4.5.-trichlorophenol TCP in bulk and in damaged bags - 105 kg, unknown mercury-containing powdery substance TMTD - 420 kg, phenoram – 370 kg, baytan – 25 kg, trialate – 400 l, hexochlorane – 120 kg, as well as an unknown powdery gray substance – about 1 ton.

The project team found about 500-600 kg of pesticides on the floor of the warehouse during the assessment. There was strong smell in the warehouse building. Local residents feel it in their homes at a distance of 120 m from the warehouse. The migration of pesticides from the warehouse is possible both through the air through cracks in the walls and windows, and through washing out by rainfall due to damage to the roof. The access of people into the warehouse is not possible. The door and windows are blocked.

During the implementation of the regional program "Waste management of the Krasnoyarsk Territory", the obsolete pesticides were removed from the warehouse and placed at the Serebristy landfill located in the suburbs of Krasnoyarsk. All of the paper, plastic, cardboard and metal containers with pesticides were damaged.

CJSC "Zeleny Gorod" implemented the cleanup. Unfortunately, the organization did not clean up the site thoroughly. The workers did not completely clean the spilled pesticides from the warehouse, did not excavate the soil from the warehouse building.

A local resident Alexander Alexandrovich Elistratov (tel. +7 933 328 04 48) lives at 9, Opitnaya Street. His house is within 120 meters from the warehouse. Alexander Elistratov smells pesticides when the western and southwestern winds blow.

Mikhail Vladimirovich Zhulikov (tel. +7 923 363 42 93) lives at 10, Opitnaya Street. He said that he also smells pesticides. The smell of chemicals spreads near the warehouse during calm weather.

Weeds grow around the warehouse area. There is noticeably less grass near the warehouse door. It is possible that the soil was heavily contaminated during the loading of pesticides in this place.

There is a path 20 meters from the warehouse. Employees of the farm walk on it every day.

The area of the site is flat. Investigators took linear samples towards residential buildings and down the ravine.

There is a deep water well in the village. Water from there is supplied to local residents by centralized water system. About 30% of the residents use wells in their private yards. People don't complain about the quality of the water.

Local residents mostly have one-story wooden houses. Residential buildings are located on the leeward side of the warehouse.

There is a road within 30 meters from the site. About 5-7 cars per day drive on that road. Transport can carry pollutants into the village.

The assessment found pesticide contamination at the site.

Бывший склад пестицидов находится на восточной окраине с. Мокрушинское на территории бывшего ОПХ «Мокрушинское», в настоящее время принадлежит фермерскому хозяйству. Склад не эксплуатируется около 25 лет. Склад построен из деревянных бревен. Размер склада 6 x 8 м, состоит из 2-х одинаковых отделений. Шиферная крыша частично разрушена. В стенах имеются отверстия, окна без стекол и забиты досками. Имеются большие щели между досками. Двери деревянные, без замков, пол земляной. В одном из отделений половина пола закрыта досками. Расстояние между складом и жилыми домами, находящимися в северо-западном направлении, составляет 120 м, расстояние до леса – 200 м. До ближайшего водного объекта (р. Енисей) 1,2 км. Территория, на которой находится склад, огорожена.

При инвентаризационном обследовании склада в рамках проекта АКАП «Экологически обоснованное управление запасами устаревших пестицидов на территории Российской Федерации» в 2008 г. в складе находилось около 3,5 тонн пестицидов, в т. ч. ценоб в тубах и россыпью – 285 кг., гранозан в бочках – 825 кг, 2.4.5. – трихлорфенол ТСР россыпью и в поврежденных мешках, 105 кг., неизвестное ртутьсодержащее порошкообразное вещество, ТМТД – 420 кг, фенорам 370, байтан – 25 кг, триалат 400 л, гексохлоран -120 кг, а также неизвестное порошкообразное вещество серого цвета около 1 т. Вся тара – бумажная, полиэтиленовая, картонная и металлическая, - повреждена. При

реализации краевой целевой программы «Обращение с отходами Красноярского края» устаревшие пестициды из склада были вывезены и размещены на полигоне «Серебристый», находящийся в пригороде г. Красноярска. Работа по вывозу пестицидов была возложена на подрядную организацию ЗАО «Зеленый город», которая не выполнила полную очистку склада от рассыпанных пестицидов, не произвела выемку грунта внутри склада, покрытого слоем рассыпанных пестицидов. Со слов местного жителя Елистратова Александра Александровича т. 8 933 328 04 48, проживающего в доме по ул. Опытная д. 9, находящегося на расстоянии 120 м от склада, запах дуста постоянно ощущается при западном и юго-западном ветре. Вторым местный житель, Жуликов Михаил Владимирович (т. 8 923 363 42 93), проживающий по адресу ул. Опытная д. 10 сообщил, что также ощущает данный запах. Запах химикатов распространяется возле склада и в безветренную погоду.

Перенос пестицидов, находящихся на складе возможен, как по воздуху через щели в стенах и окнах, так и вымываться дождевыми осадками из – за повреждения крыши. Проход посторонних лиц в склад в настоящее время исключен – дверь и окна забиты. Территория вокруг склада заросла бурьяном, со стороны дверей склада трава растет заметно слабее, что говорит о возможном сильном загрязнении почвы пестицидами в период проведения погрузо-разгрузочных работ. В 20 м от склада находится тропинка, по которой перемещаются работники фермерского хозяйства.

Местность, на которой расположен склад обладает неровным рельефом. Склад стоит на краю холма, поэтому при выборе направления для отбора линейных проб было выбрано два – одна линия была проложена в сторону жилых домов вниз по склону холма, другая была проложена вниз по ложине. Сетевые сборные пробы в количестве 6 штук отобраны вокруг склада.

Водоснабжение населенного пункта производится от глубинного водозабора, около 30 % жителей пользуются колодцами, вырытых на частных подворьях. Жалоб на плохое качество воды не имеется. Жилые дома расположены с подветренной стороны, постройки одноэтажные, деревянные. На расстоянии 40 м от склада у местных жителей имеются хозяйственные постройки, вдоль которых проложены тропинки. Так же за забором, огораживающим территорию, на расстоянии 30 м от склада проходит полевая дорога, по которой проходит 5 – 7 машин в день. Данное обстоятельство может приводить к переносу загрязненных веществ по всему с. Мокрушинское.

Longitude	Latitude	Date	Town/Area Name	Description of the sampling spot	Sampler Full Name	4,4-DDT, Ppm	alpha-HCH, ppm	gamma-HCH (lindane), ppm	Hexachloro benzene, ppm	DDD, ppm	DDE, ppm
93,202118	57,519597	20.10.2020	Mokrushinskoye Village	The area of the former	S. Kuligin V. Kolpashchikov	0,071	25	2,1	0,3	0,13	0

93,202282	57,519705	20.10.2020	Mokrushinskoye Village	warehouse	S. Kuligin V. Kolpashchikov	0,037	10	1,3	0,013	1,6	0
93,201879	57,519617	20.10.2020	Mokrushinskoye Village		S. Kuligin V. Kolpashchikov	0,03	0,25	0,08	0,0015	0,08	0,012
93,201854	57,519746	20.10.2020	Mokrushinskoye Village		S. Kuligin V. Kolpashchikov	0,0071	0,07	0,014	0,0008	0,01	0,0016
93,202018	57,519817	20.10.2020	Mokrushinskoye Village		S. Kuligin V. Kolpashchikov	0,0081	0,14	0,09	0,0034	0,015	0,00053
93,202206	57,519803	20.10.2020	Mokrushinskoye Village		S. Kuligin V. Kolpashchikov	0,007	0,026	0,0053	0,00024	0,0027	0,00036
93,202691	57,520084	28.10.2020	Mokrushinskoye Village		S. Kuligin V. Kolpashchikov	0,0036	0,018	0,0058	0,0013	0,0034	0,00049
93,203231	57,520483	28.10.2020	Mokrushinskoye Village		S. Kuligin V. Kolpashchikov	0,0014	0,019	0,032	0,001	0,0008	0
93,201533	57,520023	28.10.2020	Mokrushinskoye Village		S. Kuligin V. Kolpashchikov	0,0039	0,023	0,009	0	0,0005	0,00024
93,200898	57,52026	28.10.2020	Mokrushinskoye Village		S. Kuligin V. Kolpashchikov	0,0012	0,07	0,07	0	0,0009	0



RU-8544
Pesticide warehouse in Mokrushenskoye Village of Kazachinsky District



Figure 26. Map of the site RU-8544



Figure 27. Former warehouse building



Figure 28. Inside the warehouse building



Figure 29. Inside the warehouse building



Figure 30. Sampling near the warehouse building



Figure 31. Pesticide packaging – 12% DDT / Hexachlorocyclohexan

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https://www.contaminatedsites.org/site/8544/part1

Toxic Sites Identification Program

Site RU-8544

Investigator Details

Vasily Kuligin

Federal State Unitary Enterprise "Siberian Scientific and Research Institute of Engineering and Reclamation"

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info@eng.ru

This site was last update

Thu Feb 04 2021 13:49:02 GMT+0300

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Screening Risk Assessment

PART 2
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Release Rate

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PART 5
Linked requests and images

ISA Status: Approved

Part 1: Screening Risk Assessment

Site Name

Pesticide warehouse in Mokrushenskoye Village of Kazachinsky District

Region

Eastern Europe, Northern Eurasia & Central Asia

Country

Russia

State

X

https://www.contaminatedsites.org/site/8544/part1

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https://www.contaminatedsites.org/site/8544/part1

Toxic Sites Identification Program

Issue: ☐ Isolated site ☐ Regional problem

Key Pollutant:

Pesticides

Sub Pollutant:

Lindane (Hexachlorocyclohexane)

Total population at risk:

46471

Blacksmith Index

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Toxic Sites Identification Program

Latitude:

57.518274

Longitude:

93.196851

Abstract

The obsolete pesticide warehouse is located in Mokrushenskoye Village, Kazachinsky District, Krasnoyarsky kraj. The nearest residential buildings are located 120 m to the northwest. The distance to the forest is 200 m. The Yenisei warehouse is fenced. The project team found about 500-600 kg of pesticides on the floor of the warehouse during the the warehouse building. The migration of pesticides from the warehouse is possible both through the air through cracks in the walls and windows due to damage to the roof. The access of people into the warehouse is not possible. The door and windows are block. Заброшенный склад с остатками рассыпанных по полу пестицидов в количестве 500- 600 кг. Сильный запах хим. веществ и оконные проемы (без стекол), доходит до жилых построек, которые находятся в 120 м. от склада.



https://www.contaminatedsites.org/ta/5544/part1

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Toxic Sites Identification Program



Measurement above recommended level: 0-1x 1-2x 2-3x 3-5x 5-25x >25x

Sample Group ID: 1, Key Pollutant: DDT, Test Result: 0.07

Sample Sector: 1		Bt:	
Key Pollutant: Pesticides		Sub Pollutant: DDT	
Properties: Composite		Test Result: 0.071	
Soil - Agriculture		Latitude: Long:	
Rec Level: (Level)		Lot:	

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https://www.contaminatedsites.org/data/5443494811

Toxic Sites Identification Program

Data Source Type:

☒ Local organization/NGO

Test Data Certainty:

☒ High

Data Source Description / Citation:

Certified laboratory "Center for environmental development and audit"
Protocol # 02-172

Population Estimate

(N): 745

Population estimate confirmed by local authority:

- ▶ Sample Group ID: 1, Key Pollutant: HCH (Hexachlorocyclohexane), Test Result: 10
- ▶ Sample Group ID: 1, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 2.1
- ▶ Sample Group ID: 1, Key Pollutant: Hexachlorobenzene (Benzene Hexachloride), Test Result: 0.3
- ▶ Sample Group ID: 1, Key Pollutant: Other, Test Result: 0.13
- ▶ Sample Group ID: 1, Key Pollutant: Other, Test Result: 0
- ▶ Sample Group ID: 1, Key Pollutant: HCH (Hexachlorocyclohexane), Test Result: 25

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Toxic Sites Identification Program

- ▶ Sample Group ID: 1, Key Pollutant: HCH (Hexachlorocyclohexane), Test Result: 10
- ▶ Sample Group ID: 1, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 1.3
- ▶ Sample Group ID: 1, Key Pollutant: Hexachlorobenzene (Benzene Hexachloride), Test Result: 0.01
- ▶ Sample Group ID: 1, Key Pollutant: Other, Test Result: 1.6
- ▶ Sample Group ID: 1, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0
- ▶ Sample Group ID: 1, Key Pollutant: DDT, Test Result: 0.03
- ▶ Sample Group ID: 1, Key Pollutant: HCH (Hexachlorocyclohexane), Test Result: 0.25
- ▶ Sample Group ID: 1, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0.08
- ▶ Sample Group ID: 1, Key Pollutant: Hexachlorobenzene (Benzene Hexachloride), Test Result: 0
- ▶ Sample Group ID: 1, Key Pollutant: Other, Test Result: 0.08
- ▶ Sample Group ID: 1, Key Pollutant: Other, Test Result: 0.01
- ▶ Sample Group ID: 1, Key Pollutant: DDT, Test Result: 0.01
- ▶ Sample Group ID: 1, Key Pollutant: HCH (Hexachlorocyclohexane), Test Result: 0.07
- ▶ Sample Group ID: 1, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0.01
- ▶ Sample Group ID: 1, Key Pollutant: Hexachlorobenzene (Benzene Hexachloride), Test Result: 0
- ▶ Sample Group ID: 1, Key Pollutant: Other, Test Result: 0.01
- ▶ Sample Group ID: 1, Key Pollutant: Other, Test Result: 0
- ▶ Sample Group ID: 1, Key Pollutant: DDT, Test Result: 0.01
- ▶ Sample Group ID: 1, Key Pollutant: HCH (Hexachlorocyclohexane), Test Result: 0.14
- ▶ Sample Group ID: 1, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0.09
- ▶ Sample Group ID: 1, Key Pollutant: Hexachlorobenzene (Benzene Hexachloride), Test Result: 0

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https://www.contaminatedsites.org/ais/5543840411

Toxic Sites Identification Program

Sample Group ID: 1, Key Pollutant: Other, Test Result: 0

Sample Group ID: 1, Key Pollutant: DDT, Test Result: 0.01

Sample Group ID: 1, Key Pollutant: HCH (Hexachlorocyclohexane), Test Result: 0.03

Sample Group ID: 1, Key Pollutant: HCH (Hexachlorocyclohexane), Test Result: 0.03

Sample Group ID: 1, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0.01

Sample Group ID: 1, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0.01

Sample Group ID: 1, Key Pollutant: Hexachlorobenzene (Benzene Hexachloride), Test Result: 0

Sample Group ID: 1, Key Pollutant: Other, Test Result: 0

Sample Group ID: 1, Key Pollutant: Other, Test Result: 0

Sample Group ID: 2, Key Pollutant: Other, Test Result: 0

Sample Group ID: 2, Key Pollutant: Other, Test Result: 0

Sample Group ID: 2, Key Pollutant: Other, Test Result: 0

Sample Group ID: 2, Key Pollutant: Other, Test Result: 0

Sample Group ID: 2, Key Pollutant: DDT, Test Result: 0

Sample Group ID: 2, Key Pollutant: HCH (Hexachlorocyclohexane), Test Result: 0.02

Sample Group ID: 2, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0.03

Sample Group ID: 2, Key Pollutant: DDT, Test Result: 0

Sample Group ID: 2, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0

Sample Group ID: 2, Key Pollutant: DDT, Test Result: 0

Sample Group ID: 2, Key Pollutant: HCH (Hexachlorocyclohexane), Test Result: 0.07

Sample Group ID: 2, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0.07

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Toxic Sites Identification Program

Sample Group ID: 3, Key Pollutant: Other, Test Result: 0

Sample Group ID: 3, Key Pollutant: DDT, Test Result: 0

Sample Group ID: 3, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0

Sample Group ID: 3, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0.01

Sample Group ID: 3, Key Pollutant: Hexachlorobenzene (Benzene Hexachloride), Test Result: 0

Sample Group ID: 3, Key Pollutant: DDT, Test Result: 0.01

Sample Group ID: 3, Key Pollutant: HCH (Hexachlorocyclohexane), Test Result: 0.02

Sample Group ID: 3, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0.04

Sample Group ID: 3, Key Pollutant: Hexachlorobenzene (Benzene Hexachloride), Test Result: 0

Sample Group ID: 3, Key Pollutant: Other, Test Result: 0

Sample Group ID: 3, Key Pollutant: Other, Test Result: 0

Sample Group ID: 3, Key Pollutant: Other, Test Result: 0

Estimated additional population possibly at risk:

Physical Description

Location & Site Description:

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https://www.contaminatedsites.org.uk/55448part1

Toxic Sites Identification Program

building is 6 * 8 meters. The warehouse has a slate roof, which is partially destroyed. There are holes in the walls, the boards. There are no locks on the wooden doors, the floor of the warehouse is ground.

The nearest residential buildings are located 120 m to the northwest. The distance to the forest is 200 m. The Yeresel warehouse is fenced.

In 2008 there was an inventory of the warehouse during the ACAP project "Environmental justification for the manager the Russian Federation". The specialists found about 3,8 tons of obsolete pesticides including: tseb in tubes and in tui 2.4.5.-Dichlorophenol TCP in bulk and in damaged bags - 105 kg, unknown mercury-containing powdery substance 78

Size of Contaminated Area:

✚ <100 m²

Estimated depth of contamination:

15

Was a test pit dug to determine depth of contamination?

↓ No

Is there a strong smell associated with the site attributed to contamination?

☑ Yes

Soil Group	Soil Texture		
KASTANOZEMS_CHERNOZEMS_PHAEOZEMS_UMBRISOLS	Medium		
Clay Content	Silt Content		Sand
25	% 47	% 28	
Land Use	Population Density		Elev.

https://www.contaminatedsites.org.uk/55448part1

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Toxic Sites Identification Program

Land Use:

Choose one or more land uses:

👤 List the number of people in the following categories:

	On Site	Within 50 meters	Within 100 meters
Live	0	18	79
Work	32	45	61
Visit	2	4	10
Total across all cate			

Site accessibility to animals that are later consumed by humans:

🏠 Accessible to occasional food animals

How far are crops produced from the c

🚫 No crops are produced within

https://www.contaminatedsites.org.uk/55448part1

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<https://www.contaminatedsites.org/au/BSA4/Report/>

Toxic Sites Identification Program

Select one

No

Close report

What is the groundwater used for?

Select one

If water at the site is contaminated, is there another source of clean water available?

No

View history

Viewing site

Add new site

Login

Describe the access to the contaminated area:

Controlled access: entry difficult

Describe the ground cover over the cor

There is complete grass cover

Source Industry:

Agriculture

Active / Legacy

Legacy

Formal / Informal

Formal

Documented Health Effects: No

Describe credible health impact of pollutant. Append any existing studies (scan and pdf) to Part 6. Indicate anecdotal evidence c

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Contaminants

PART 5
Contaminant Management

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Toxic Sites Identification Program

Additional Notes:

Close report

View history

Viewing site

Add new site

Login

Part 3: Release Risk

Is there permanent surface water on the site?

No

What is it used for?

Select one

Is there evidence of a high water table or ground water?

No

Depth of the water table

Select a depth

Is the site in a flood plain?

PART 3
Release Risk

PART 4
Contaminants

PART 5
Contaminant Management

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Toxic Sites Identification Program

Distance to the closest river or water body downstream of the contaminated site

→ 300 m to 1 km

Distance to the closest well

→ Within 500m of contamination

In which direction?

Northwest

Position of the contaminants relative to the slope

Above ground level and slope is flat

Is this a storage facility for chemicals?

Yes

Number of containers on site

Containers on site

Other pollutant storage

Residue or spills only

Please list the primary chemicals stored at the site

tsob in tubes and in bulk - 285 kg, granosan in barrels - 825 kg, 2,4,5-trichlorophenol TCP in bulk and in damaged bags - 1

Specify the concentration of pesticide

Estimate (unit)

ppm

Identification Method

Inventory or written records

Location

Inside building with poor roof

Building Type

Incomplete or poor walls

Please describe the floor

Soil

Cover Type

Other or poor cover

https://www.contaminatedsites.org.uk/BSA4/Report1

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Toxic Sites Identification Program

Site Stakeholders

Number of stakeholders interviewed

Enter total interviewed

Number of males

2

Num

Stakeholder Type

Select type of stakeholder

Name

Alexander Alexandrovich Elistratov

Address

A local resident Alexander Alexandrovich Elistratov (tel. +7 933 328 04 46) lives at 9, Opitnaya Street.

Phone Number

+7 933 328 04 46

Email

Meeting Dates, Notes, & Key Findings

https://www.contaminatedsites.org.uk/BSA4/Report1

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Toxic Sites Identification Program

Stakeholder Type

Select type of stakeholder

Name

Mikhail Vladimirovich Zhulikov

Address

Mikhail Vladimirovich Zhulikov (tel. +7 923 363 42 93) lives at 10, Opinyaya Street

Phone Number

+7 923 363 42 93

Email

Meeting Dates, Notes, & Key Findings

https://www.contaminatedsites.org/site/5544/part1

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https://www.contaminatedsites.org/site/5544/part1

Toxic Sites Identification Program

Part 2 Linked reports and Images

- 01 Карта района обследования.PNG (source of trouble)
- 02 Участок обследования (с. Мокрушино).PNG source of trouble
- 03 Общий вид склада.JPG general view
- 04 Состояние стены и крыши склада.JPG the wall of the warehouse
- 05 Жилые дома возле склада.JPG residential buildings
- 06 Крыша склада.JPG the roof of the warehouse
- 07 Жилые дома за складом.JPG residential buildings behind the warehouse
- 08 Вид помещения внутри склада.JPG inside the warehouse
- 09 вид помещения внутри склада.JPG inside the warehouse

https://www.contaminatedsites.org/site/5544/part1

Close (x)

View Users

View my site

Add new site

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<https://www.contaminatedsites.org/ru/6544/vpart1>

Toxic Sites Identification Program

- 11 Сумажный пакет из под пестицидов.JPG paper bag from the pesticides
- 12 Рассыпанные пестициды внутри склада.JPG spilled pesticides inside the warehouse
- 13 Отбор линейных проб проб.JPG sampling
- 14 Отбор сетевых проб.JPG sampling
- 15 Схема отбора сетевых проб (с. Мокрушенское).pdf sampling scheme
- 16 Схема отбора линейных проб (с. Мокрушенское).pdf sampling scheme
- 17 Координаты точек отбора сетевых проб (с. Мокрушенское).pdf handwritten coordinates
- 18 Координаты линейных проб (с. Мокрушенское).pdf handwritten coordinates
- 01.pdf (all protocol 02-172)
- 02.pdf (all protocol 02-172)
- 03.pdf (all protocol 02-173)
- 04.pdf (all protocol 02-174)
- 05.pdf (all protocol 02-175)
- 06.pdf (all protocol 02-176)
- 07.pdf (all protocol 02-177)
- 08.pdf (all protocol 02-178)

Description

View Users

View my sites

Add new sites

Logout

PART 1
Screening Risk Assessment

PART 2
Physical Description

PART 3
Release Data

PART 4
Groundwater

PART 5
Linked reports and images

<https://www.contaminatedsites.org/ru/6544/vpart1>

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<https://www.contaminatedsites.org/ru/6544/vpart1>

Toxic Sites Identification Program

- 10.pdf (all protocol 02-169)
- 11.pdf (all protocol 02-181)
- Протокол отбора проб (с. Мокрушенское).xls sampling protocol
- Mokrushenskoye.pdf (all protocol for Mokrushenskoye Village (all samples)
- sample_log_Mokrushenskoye_eng.xls sample log english
- mokrushenskoye map.jpg map (English)

Description

View Users

View my sites

Add new sites

Logout

Part 6 Expected Intervention Description

Describe possible measure that could be taken to mitigate risk. Please include an estimated timeframe and key activities:

Estimated volume of contaminant: Enter an estimated vo m³

PART 1
Screening Risk Assessment

PART 2
Physical Description

PART 3
Release Data

PART 4
Groundwater

PART 5
Linked reports and images

<https://www.contaminatedsites.org/ru/6544/vpart1>

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Toxic Sites Identification Program

Describe long term intervention approach:

Note any physical, political or social barriers to the intervention:

Who is Local Champion? Provide contact details:

<https://www.contaminatedsites.org/site/5544/part1>

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<https://www.contaminatedsites.org/site/5544/part1>

Toxic Sites Identification Program

<https://www.contaminatedsites.org/site/5544/part1>

1920

2020

Site Assessment Report 9. RU-8546

Former pesticide warehouse, Nakhvalskoe Village of Sukhobuzimsky District, Krasnoyarsky kray

The former pesticides warehouse is located on the lands of the former state farm "Gorsky". The state farm is located on the northern outskirts of Nakhvalskoe Village of Sukhobuzimsky District, Krasnoyarsk Region. The village of Nakhvalskoye is located 105 km northeastern from Krasnoyarsk city on the bank of Buzim River 8 km from its confluence with the Yenisei River.

The residential buildings are within 300 meters from the site. Forest is within 300 meters from the site. The nearest watercourse is within 500 meters.

The population of the village is 1771 people. There is an elementary school in the village.

The warehouse belonged to Gorsky state farm until 1992. In 2000-s the state farm ran bankrupt. The household and industrial buildings were dismantled. The pesticide warehouse building was completely destroyed.

In 2008 there was an inventory of obsolete pesticides. It was found that there were about 10 tons of various pesticides in poor containers including old metal drums in the site. The pesticides were located in the open air without any shed. There were granosan, phenoram, simazine, as well as an unidentified organic compounds. Pesticides were stored there until 2010.

The employees of the state farm used those pesticides in agriculture.

The project team visited the site in October, 2020. Weeds and small bushes grow around the warehouse. The size of the warehouse is 20 * 80 meters. Only the foundation and destroyed support beams remain of the warehouse building. There is a pile of soil 6-7 meters in diameter to the west side of the warehouse.

Local residents said that the pesticide residues were removed from the site in 2012, and then the area of the warehouse was leveled with a bulldozer.

The project team believes that the area of the warehouse is still contaminated with pesticides.

The area of the site is flat. The team took linear samples over 100 m sections towards the agricultural fields and towards the water tower which is within 250 from the site. The terrain of the site is flat.

Weeds and small bushes grow everywhere on the site. There are abandoned garage and boiler room near the warehouse building.

Livestock may enter to the site occasionally.

Local residents set up an electric fence around the warehouse. They are afraid that the animals could be poisoned by pesticides.

However, the project team couldn't get any information about poisoning of animals or people on the site. Nobody complained about it.

The obsolete pesticides were stored uncovered in destroyed packages for 10 years. They were exposed to atmospheric precipitation, extreme temperatures, wind, and could be carried to the village by domestic cattle and passing vehicles.

The project team took linear samples based on the relief of the site.

During cleaning in 2012 the topsoil was not removed to the landfill. This soil was just moved to a nearby dump. Investigators took a soil sample from this dump.

People can be exposed to inhalation of vapors and contaminated dust, possible dermal contact.

Organochlorine pesticides were found in all soils samples taken at the site.

Бывший склад пестицидов расположен на территории производственной базы центрального отделения бывшего совхоза "Горский" на северной окраине с. Нахвальское Сухобузимского района Красноярского края.

Село Нахвальское находится в 105 км от г. Красноярск в северо-восточном направлении, а р. Бузим в 8 км от её впадения в р. Енисей в урочище Нахвальском. Предположительно ранее на месте села находилось русло р. Енисей. Население села составляет 1771 человек. Имеется общеобразовательная школа. Глава муниципального образования Гимбал Наталья Ивановна т. (39199)3-342.

Совхоз «Горский», центральная усадьба которого до 1992 г. находилась в с. Нахвальское, обанкротился в начале 2000-годов. Хозяйственные и производственные помещения были разобраны или разрушены. Склад пестицидов был полностью разрушен.

На момент инвентаризационного обследования в 2008 г., на месте склада под открытым небом находилось около 10 т. различных пестицидов в разрушенной и полуразрушенной таре, в т. ч. в металлических бочках. Ранее эти пестициды использовались в сельскохозяйственном производстве.

На момент проведения исследования в октябре 2020г. склад представлял собой участок земли, заросший травой и мелким кустарником. От склада, размером 20 x 80 м, сохранились остатки фундамента, спилены опорных балок. Видимых остатков брошенных пестицидов не обнаружено. С западной стороны территории склада имеется куча грунта диаметром 6 - 7 метров.

Со слов местных жителей остатки пестицидов были вывезены в 2012 году, а территория склада выровнена бульдозером. Вероятность нахождения остатков устаревших пестицидов на месте нахождения склада и в рядом находящейся куче грунта достаточно высока. Сетевые пробы была взяты на участке нахождения бывшего склада, а линейные пробы - на отрезках по 100 м по двум направлениям - в сторону сельхозполей по микропонижению рельефа и в сторону водонапорной башни, находящейся на расстоянии 250 м от исследуемого участка. Вся территория бывшей производственной базы представляет собой заросшую травой и кустарником площадь с остатками строений (склад, гараж, котельная). Рельеф местности равнинный. На территорию где был склад, периодически заходит крупный рогатый скот местных жителей. Жителями самостоятельно установлена электроизгородь вокруг участка склада из-за имеющихся опасений отравления скота. Установить факт отравления людей или животных не удалось. Вероятность загрязнения почвы участка, где находился склад пестицидов и возле него высока. В течении 10 лет устаревшие пестициды находились в разрушенных упаковках под открытым небом, подвергались воздействию атмосферных осадков, температурным перепадам, ветровому воздействию, могли переноситься домашним крупнорогатым скотом и проезжающим автотранспортом, т.к. через территорию бывшего склада проходит несколько грунтовых дорог. Поскольку пол в складе отсутствовал, весьма вероятно попадание пестицидов в земляное основание, поэтому земляные пробы брали на участке бывшего склада. Линейные пробы отбирались по направлению, где наиболее высока вероятность переноса пестицидов ветром и дождевыми осадками, по выраженному микропонижению рельефа. После перемещения устаревших пестицидов в место длительного хранения в 2012 году (г. Красноярск, полигон "Серебристый") верхний слой грунта не вывозился, а был перемещен в рядом находившийся отвал, с которого была отобрана сборная проба, а также проба из середины отвала на глубине 1м.

Согласно результатам проведенного химического анализа почвенных проб исследуемого участка, во всех отобранных образцах выявлено наличие пестицидов, в т. ч. хлорорганических.

Longitude	Latitude	Date	Town/Area Name	Description of the sampling spot	Sampler Full Name	4,4-DDT, Ppm	alpha-HCH, ppm	gamma-HCH (lindane), ppm	Hexachloro benzene, ppm	DDD, ppm	DDE, ppm
93,567734	56,671547	17.10.2020	Nakhvalinskoye Village	The former production base overgrown with grass	S. Kuligin V. Kolpashchikov	0,003	0,0008	0,00022	0	0,00049	0,00055
93,567734	56,671547	17.10.2020	Nakhvalinskoye Village		S. Kuligin V. Kolpashchikov	0,0037	0,0012	0,00038	0	0,0009	0,00061

93,568628	56,671677	17.10.2020	Nakhvalinskoye Village	and shrubs	S. Kuligin V. Kolpashchikov	0,001	0,001	0,0008	0	0,001	0,00024
93,568408	56,671723	17.10.2020	Nakhvalinskoye Village		S. Kuligin V. Kolpashchikov	0,0048	0,0012	0,0007	0	0,0008	0,00019
93,568395	56,67163	17.10.2020	Nakhvalinskoye Village		S. Kuligin V. Kolpashchikov	0,012	0,007	0,0027	0,00022	0,0027	0,00075
93,568226	56,671687	17.10.2020	Nakhvalinskoye Village		S. Kuligin V. Kolpashchikov	0,0033	0,00045	0,00031	0	0,00061	0,00014
93,568232	56,671573	17.10.2020	Nakhvalinskoye Village		S. Kuligin V. Kolpashchikov	0,0047	0,0013	0,0009	0	0,0011	0,00031
93,567999	56,671641	17.10.2020	Nakhvalinskoye Village		S. Kuligin V. Kolpashchikov	0,0087	0,0011	0,00058	0	0,002	0,00058
93,569485	56,671591	18.10.2020	Nakhvalinskoye Village		S. Kuligin V. Kolpashchikov	0,0078	0,0016	0,00015	0	0,02	0,001
93,570797	56,671605	18.10.2020	Nakhvalinskoye Village		S. Kuligin V. Kolpashchikov	0,0014	0,0016	0,00015	0,0001	0,0015	0,0002
93,568239	56,67133	18.10.2020	Nakhvalinskoye Village		S. Kuligin V. Kolpashchikov	0,024	0,0027	0,00062	0	0,0049	0,0043
93,56881	56,670655	18.10.2020	Nakhvalinskoye Village		S. Kuligin V. Kolpashchikov	0,024	0,0014	0,0007	0,0002	0,0017	0,0047

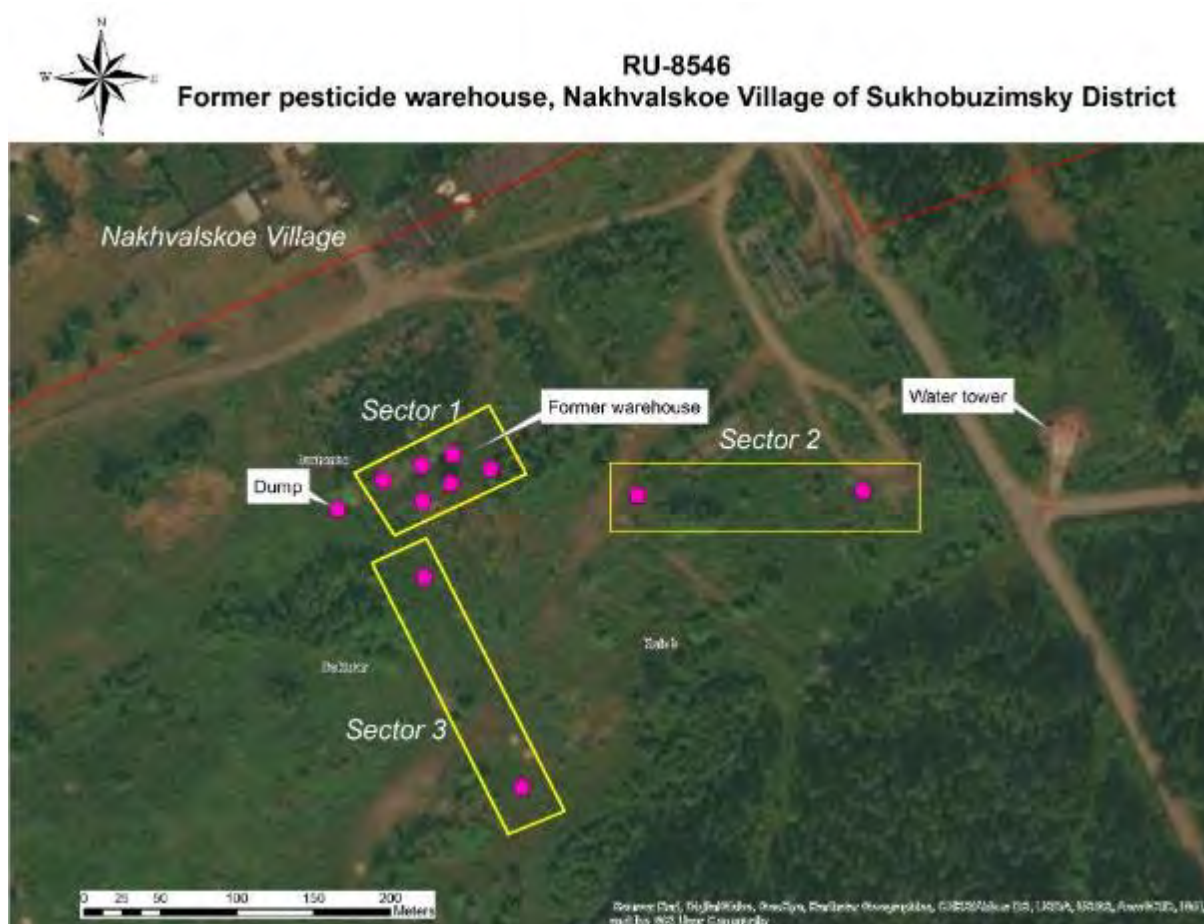


Figure 32. Map of the site RU-8544



Figure 33. General view



Figure 34. Sampling on the site



Figure 35. Testing dig



Figure 36. Sampling on the site

05.02.2021

<https://www.contaminatedsites.org/site/8546/>

Toxic Sites Identification Program

Site RU-8546

Investigator Details

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vasily.kuligin@yandex.ru

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Thu Feb 04 2021 13:23:50 GMT

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New

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ISA Status: Approved

Part 1: Screening Risk Assessment

Site Name

Former pesticide warehouse, Nakhvalskoe Village of Sukhobuzemsky District

Region

Eastern Europe, Northern Eurasia & Central As

Country

Russia

State

X

<https://www.contaminatedsites.org/site/8546/>

1/19

05.02.2021

<https://www.contaminatedsites.org/site/8546/>

Toxic Sites Identification Program

Issue: ☐ Isolated site ☐ Regional problem

Key Pollutant:

Pesticides

Sub Pollutant:

DDT

Total population at risk:

125741

Blacksmith Index

0



<https://www.contaminatedsites.org/site/8546/>

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Description

[View Users](#)

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[Add new sites](#)

[Logout](#)

PART 1
Screening Risk Assessment

PART 2
Physical Description

PART 3
Release Rate

PART 4
Site Stakeholders

PART 5
Linked reports and images

05.02.2021

<https://www.contaminatedsites.org/site/6548/>

Toxic Sites Identification Program

Latitude:

56.674767

Longitude:

93.573649

Abstract

The former pesticides warehouse is located on the lands of the former state farm "Gorsky". The state farm is located o Village of Sukhobuzimsky District, Krasnoyarsk Region. Only the foundation and destroyed support beams remain of the warehouse building. The obsolete pesticides were stored uncovered in destroyed packages for 10 years. They were exposed to atmosphere wind, and could be carried to the village by domestic cattle and passing vehicles. People can be exposed to inhalation of vapors and contaminated dust, possible dermal contact. Organochlorine pesticides were found in all soils samples taken at the site.



<https://www.contaminatedsites.org/site/6548/>

Description

View Users

View my sites

Add new sites

Logout

PART 1
Screening Risk Assessment

PART 2
Physical Description

PART 3
Release Risk

PART 4
Site Stakeholders

PART 5
Link to reports and findings

3/19

05.02.2021

<https://www.contaminatedsites.org/site/6548/>

Toxic Sites Identification Program



Measurement above recommended level: 0-1x 1-2x 2-3x 3-5x 5-25x >25x

Sample Group ID: 1, Key Pollutant: DDT, Test Result: 0

Sample Sector: 1		Bt:	
Key Pollutant: Pesticides		Sub Pollutant: DDT	
Properties: Composite		Test Result: 0.0037	
Soil - Agriculture		Latitude: Longitude:	
Rec Level: Level		Lot:	

Description

View Users

View my sites

Add new sites

Logout

PART 1
Screening Risk Assessment

PART 2
Physical Description

PART 3
Release Risk

PART 4
Site Stakeholders

PART 5
Link to reports and findings

<https://www.contaminatedsites.org/site/6548/>

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05/02/2021

<https://www.contaminatedsites.org/data/55451>

Toxic Sites Identification Program

Data Source Type:

☒ Investigator sampling (Lab or XRF)

Test Data Certainty:

☒ High

Data Source Description / Citation:

Certified laboratory "Center for environmental development and audit"
Protocol #02-193

Population Estimate

(Est. 1,271)

Population estimate confirmed by local authority:

- ▶ Sample Group ID: 1, Key Pollutant: HCH (Hexachlorocyclohexane), Test Result: 0
- ▶ Sample Group ID: 1, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0
- ▶ Sample Group ID: 1, Key Pollutant: Hexachlorobenzene (Benzene Hexachloride), Test Result: 0
- ▶ Sample Group ID: 1, Key Pollutant: Other, Test Result: 0
- ▶ Sample Group ID: 1, Key Pollutant: Other, Test Result: 0
- ▶ Sample Group ID: 1, Key Pollutant: DDT, Test Result: 0

<https://www.contaminatedsites.org/data/55451>

05/02/2021

<https://www.contaminatedsites.org/data/55451>

Toxic Sites Identification Program

- ▶ Sample Group ID: 1, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0
- ▶ Sample Group ID: 1, Key Pollutant: Hexachlorobenzene (Benzene Hexachloride), Test Result: 0
- ▶ Sample Group ID: 1, Key Pollutant: Other, Test Result: 0
- ▶ Sample Group ID: 1, Key Pollutant: Other, Test Result: 0
- ▶ Sample Group ID: 1, Key Pollutant: DDT, Test Result: 0
- ▶ Sample Group ID: 1, Key Pollutant: HCH (Hexachlorocyclohexane), Test Result: 0
- ▶ Sample Group ID: 1, Key Pollutant: Hexachlorobenzene (Benzene Hexachloride), Test Result: 0
- ▶ Sample Group ID: 1, Key Pollutant: Other, Test Result: 0
- ▶ Sample Group ID: 1, Key Pollutant: Other, Test Result: 0
- ▶ Sample Group ID: 1, Key Pollutant: DDT, Test Result: 0.01
- ▶ Sample Group ID: 1, Key Pollutant: HCH (Hexachlorocyclohexane), Test Result: 0.01
- ▶ Sample Group ID: 1, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0
- ▶ Sample Group ID: 1, Key Pollutant: Hexachlorobenzene (Benzene Hexachloride), Test Result: 0
- ▶ Sample Group ID: 1, Key Pollutant: Other, Test Result: 0
- ▶ Sample Group ID: 1, Key Pollutant: Other, Test Result: 0
- ▶ Sample Group ID: 1, Key Pollutant: DDT, Test Result: 0
- ▶ Sample Group ID: 1, Key Pollutant: HCH (Hexachlorocyclohexane), Test Result: 0
- ▶ Sample Group ID: 1, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0
- ▶ Sample Group ID: 1, Key Pollutant: Hexachlorobenzene (Benzene Hexachloride), Test Result: 0
- ▶ Sample Group ID: 1, Key Pollutant: Other, Test Result: 0
- ▶ Sample Group ID: 1, Key Pollutant: Other, Test Result: 0

<https://www.contaminatedsites.org/data/55451>

15 (2/2021)

<https://www.contaminatedsites.org/wiki/541/>

Toxic Risks Identification Program

Sample Group ID: 1, Key Pollutant: Other, Test Result: 0

- Sample Group ID: 1, Key Pollutant: DDT, Test Result: 0
- Sample Group ID: 1, Key Pollutant: HCH (Hexachlorocyclohexane), Test Result: 0
- Sample Group ID: 1, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0
- Sample Group ID: 1, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0
- Sample Group ID: 1, Key Pollutant: Hexachlorobenzene (Benzene Hexachloride), Test Result: 0
- Sample Group ID: 1, Key Pollutant: Pesticides (Total), Test Result: 0
- Sample Group ID: 1, Key Pollutant: Pesticides (Total), Test Result: 0
- Sample Group ID: 1, Key Pollutant: DDT, Test Result: 0.01
- Sample Group ID: 1, Key Pollutant: HCH (Hexachlorocyclohexane), Test Result: 0
- Sample Group ID: 1, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0
- Sample Group ID: 1, Key Pollutant: Hexachlorobenzene (Benzene Hexachloride), Test Result: 0
- Sample Group ID: 1, Key Pollutant: Pesticides (Total), Test Result: 0
- Sample Group ID: 2, Key Pollutant: DDT, Test Result: 0.01
- Sample Group ID: 2, Key Pollutant: HCH (Hexachlorocyclohexane), Test Result: 0
- Sample Group ID: 2, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0
- Sample Group ID: 2, Key Pollutant: Hexachlorobenzene (Benzene Hexachloride), Test Result: 0
- Sample Group ID: 2, Key Pollutant: Other, Test Result: 0.02
- Sample Group ID: 2, Key Pollutant: Other, Test Result: 0
- Sample Group ID: 2, Key Pollutant: DDT, Test Result: 0
- Sample Group ID: 2, Key Pollutant: HCH (Hexachlorocyclohexane), Test Result: 0

<https://www.contaminatedsites.org/wiki/541/>

15 (2/2021)

<https://www.contaminatedsites.org/wiki/541/>

Toxic Risks Identification Program

Sample Group ID: 2, Key Pollutant: Hexachlorobenzene (Benzene Hexachloride), Test Result: 0

- Sample Group ID: 2, Key Pollutant: Other, Test Result: 0
- Sample Group ID: 2, Key Pollutant: Other, Test Result: 0
- Sample Group ID: 2, Key Pollutant: DDT, Test Result: 0
- Sample Group ID: 2, Key Pollutant: HCH (Hexachlorocyclohexane), Test Result: 0
- Sample Group ID: 2, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0
- Sample Group ID: 2, Key Pollutant: Hexachlorobenzene (Benzene Hexachloride), Test Result: 0
- Sample Group ID: 2, Key Pollutant: Other, Test Result: 0
- Sample Group ID: 2, Key Pollutant: Other, Test Result: 0
- Sample Group ID: 3, Key Pollutant: DDT, Test Result: 0.02
- Sample Group ID: 3, Key Pollutant: HCH (Hexachlorocyclohexane), Test Result: 0
- Sample Group ID: 3, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0
- Sample Group ID: 3, Key Pollutant: Hexachlorobenzene (Benzene Hexachloride), Test Result: 0
- Sample Group ID: 3, Key Pollutant: Other, Test Result: 0
- Sample Group ID: 3, Key Pollutant: Other, Test Result: 0
- Sample Group ID: 3, Key Pollutant: DDT, Test Result: 0.02
- Sample Group ID: 3, Key Pollutant: HCH (Hexachlorocyclohexane), Test Result: 0
- Sample Group ID: 3, Key Pollutant: Lindane (Hexachlorocyclohexane all forms), Test Result: 0
- Sample Group ID: 3, Key Pollutant: Hexachlorobenzene (Benzene Hexachloride), Test Result: 0
- Sample Group ID: 3, Key Pollutant: Other, Test Result: 0
- Sample Group ID: 3, Key Pollutant: Other, Test Result: 0

<https://www.contaminatedsites.org/wiki/541/>

05.02.2021

<https://www.contaminatedsites.org/site/5546/>

Toxic Sites Identification Program

Physical Description

Location & Site Description:

The former pesticides warehouse is located on the lands of the former state farm "Gorsky". The state farm is located in Village of Sudzhubuzimsky District, Krasnoyarsk Region. The village of Nakhvaskoye is located 105 km north-eastern in Buzim River 8 km from its confluence with the Yenisei River.

The residential buildings are within 300 meters from the site. Forest is within 300 meters from the site. The nearest village population of the village is 1771 people. There is an elementary school in the village.

The warehouse belonged to Gorsky state farm until 1992. In 2000-s the state farm ran bankrupt. The household and a pesticide warehouse building was completely destroyed.

In 2008 there was an inventory of obsolete pesticides. It was found that there were about 10 tons of various pesticides remains in the site. The pesticides were located in the open air without any shed. There were granosan, phoronam, siml

Size of Contaminated Area:

300 - 500 m²

Estimated depth of contamination:

15

Was a test pit dug to determine depth of contamination?

No

Is there a strong smell associated with the site attributed to contamination?

No

<https://www.contaminatedsites.org/site/5546/>

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<https://www.contaminatedsites.org/site/5546/>

Toxic Sites Identification Program

Soil Group

KASTANOZEM5_CHERNOZEM5_PHAEOZEM5_UMBRISOL5

Soil texture

Medium

Clay Content

19

Silt Content

46

Sand

31

Land Use

Commercial/Agricultural

Population Density

per km²

Elev:

11

Land Use:

Industrial (vacant or closed facility) ☐ Vacant Land ☒

List the number of people in the following categories:

	On Site	Within 50 meters	Within 100 meters
Live	0	0	736
Work	0	0	57
Total across all cate			

<https://www.contaminatedsites.org/site/5546/>

10/19

10131219

05.02.2021

<https://www.contaminatedsites.org/ab/b54d/>

Toxic Sites Identification Program

Is there permanent surface water on the site?

No

What is it used for?

Select one

Is there evidence of a high water table or ground water?

No

Depth of the water table

Select a depth

Is the site in a flood plain?

No

Distance to the closest river or water body downstream of the contaminated site

Select a distance

Distance to the closest well

Within 500m of contamination

In which direction?

Northeast

Position of the contaminants relative to the slope

At or below ground level and slope is flat

Is this a storage facility for chemicals?

Yes

Number of containers on site

Containers on site

Other pollutant storage

Select one

Please list the primary chemicals stored at the site

<https://www.contaminatedsites.org/ab/b54d/>

05.02.2021

<https://www.contaminatedsites.org/ab/b54d/>

Toxic Sites Identification Program

Specify the concentration of pesticide

Estimate quantity

ppm

Identification Method

Inventory or written records

Location

Outdoors

Building Type

Not applicable (Outside)

Please describe the floor

Soil

Cover Type

No cover

Site Stakeholders

Number of stakeholders interviewed

1

Number of males

Number of males

Num

Stakeholder Type

Municipal Authority (Mayor, etc)

Name

Natalya Ivanovna Gimbal

Address

<https://www.contaminatedsites.org/ab/b54d/>

13/19

14/19

05.02.2021

<https://www.contaminatedsites.org/site/5545/>

Toxic Sites Identification Program

Phone Number

+7391993-342

Email

Meeting Dates, Notes, & Key Findings

Head of the Municipal Formation of Nakhvatskoe Village is Natalya Ivanovna Gimbal (tel. +7391993-342).

View 1 Linked reports and Images

- 01 Карта района обследования.PNG map of the site
- 02 Участок обследования (с. Навальское).png site map
- 03 Вид территории бывшего склада.jpg general view

<https://www.contaminatedsites.org/site/5545/>

15/19

05.02.2021

<https://www.contaminatedsites.org/site/5545/>

Toxic Sites Identification Program

- 05 Вид на с. Навальское с территории склада.jpg general view
- 06 Отвал грунта возле склада.JPG dump of the ground next to the warehouse
- 07 Проложенная дорога возле бывшего склада.JPG general view
- 08 Отбор ленточных проб.jpg sampling
- 09 Отбор точечной пробы на отвале грунта.JPG testing dig
- 10 Электроизгородь вокруг территории бывшего склада.JPG Electric fence
- 11 Направление отбора ленточных проб в сторону водонапорной башни.jpg general view
- 12 Отбор сетевых проб.jpg sampling of surface samples
- 13 Следы КРС на территории склада.jpg sampling
- 14 Схема отбора сетевых проб (с. Навальское).pdf sampling scheme
- 15 Схема отбора ленточных проб (с. Навальское).pdf sampling scheme
- 16 Координаты точек отбора сетевых проб возле бывшего склада пестицидов (с. Навальское).pdf handwritten coordinates
- 17 Координаты точек отбора ленточных проб (с. Навальское).pdf handwritten coordinates
- 01.pdf full protocol 02-103
- 02.pdf full protocol 02-104
- 03.pdf full protocol 02-105

<https://www.contaminatedsites.org/site/5545/>

16/19

05/02/2021

<https://www.contaminatedsites.org/site/65461>

Toxic Sites Identification Program

- 05.pdf (air protocol 02-106)
- 06.pdf (air protocol 02-108)
- 08.pdf (air protocol 02-170)
- 09.pdf (air protocol 02-191)
- 10.pdf (air protocol 02-192)
- 11.pdf (air protocol 02-193)
- 07.pdf (air protocol 02-189)
- Nakhvalinskoye.pdf (air protocol for Nakhvalinskoye Village, 500m radius)
- sample_log_Nakhvalinskoye_eng.xls, sample_log_explicit
- nakhvalinskoye_mba.jpg, mba (English)

1/20/2020

- View Users
- View my data
- Add new sites
- Logout

PART 1
Screening Risk Assessment

PART 2
Physical Contamination

PART 3
Release Risk

PART 4
Groundwater

PART 5
Contaminant Pathways

Part 6 Expected Intervention Description

Describe possible measure that could be taken to mitigate risk. Please include an estimated time frame and key activities:

<https://www.contaminatedsites.org/site/65461>

1/19

05/02/2021

<https://www.contaminatedsites.org/site/65461>

Toxic Sites Identification Program

Estimated volume of contaminant: Enter an estimated vol. m³

Initial Intervention Type: Select an intervention type

1/20/2020

- View Users
- View my data
- Add new sites
- Logout

PART 1
Screening Risk Assessment

PART 2
Physical Contamination

PART 3
Release Risk

PART 4
Groundwater

PART 5
Contaminant Pathways

Describe long term intervention approach:

Note any physical, political or social barriers to the intervention:

<https://www.contaminatedsites.org/site/65461>

18/19

05/02/2021

<https://www.contaminatedsites.org/site/8548/>

Toxic Sites Identification Program

1/20/2020 10:00

Who is Local Champion? Provide contact details:

 View Users

 View my sites

 Add new sites

 Logout

Activities carried out to date:

PART 1
Screening Risk Assessment

PART 2
Detailed Assessment

PART 3
Recovery Plan

PART 4
Green Remediation

PART 5
Contaminated Sites Register

<https://www.contaminatedsites.org/site/8548/>

12/19

Example Laboratory Analysis Result for one soil sample:

Общество с ограниченной ответственностью "Центр экологических разработок и аудита"
Аккредитованная испытательная лаборатория

Юридический адрес: 660041, Красноярский край, г. Красноярск, пр. Свободный, 72а, пом. 115, тел/факс 291-34-44, E-mail: ceria@list.ru
Адрес Испытательной лаборатории: 660061, Красноярский край, г. Красноярск, ул. Калинина, 84"Д", пом. 10, тел.(391) 218-08-28, E-mail: cer.lab@list.ru
Номер записи в Реестре аккредитованных лиц № RA.RU.21AT40, дата внесения в Реестр аккредитованных лиц 29.11.2016

ПРОТОКОЛ ЛАБОРАТОРНЫХ ИССЛЕДОВАНИЙ № 02 -182 от 2 декабря 2020 г.

Наименование заявителя: Кулигин Василий Дмитриевич

Юридический адрес: г. Красноярск, ул. Красномосковская, д. 32

Наименование объекта (организации), где произведен отбор: совхоз "Горский"

Адрес: Красноярский край, Сухобузимский район, с. Нахвальское

Наименование образца: почва

Количество образца: 350 г

Дата и время отбора: 18.10.2020

Отбор произвел заказчик, акт отбора от 18.10.2020

НД на методы отбора: ГОСТ 17.4.4.02-2017 "Методы отбора и подготовки проб для химического, бактериологического, гельминтологического анализа"

Основание для отбора: договор № ИЛ ЦЭРиА/64-2020

При отборе присутствовал: -

Условия доставки соблюдены

Доставлен в ИЛ 3.11.20 13:00

Дополнительные сведения: Хозяйственная база (разрушенная) бывшего совхоза "Горский". Территория бывшего склада химикатов. Проба 001.Н, глубина отбора 1 м.

Ответственность за отбор, доставку проб и предоставленную информацию несет заказчик. Результаты выданы на представленный образец.

Нормативные документы, регламентирующие значения характеристик и показателей: —

Код образца: 02 -182-20

Наименование показателей, ед. измерения	Результаты испытаний	НД на методы испытаний
Образец поступил 3.11.20 15:00		
4,4-ДДТ, мг/кг	0,0030 ±0,0012	МУ 1766-77 Методические указания по определению остаточных количеств хлорсодержащих пестицидов в почве методом газо-жидкостной хроматографии
альфа-ГХЦГ, мг/кг	0,0008 ±0,0004	МУ 1766-77 Методические указания по определению остаточных количеств хлорсодержащих пестицидов в почве методом газо-жидкостной хроматографии
гамма-ГХЦГ (линдан), мг/кг	0,00022 ±0,00012	МУ 1766-77 Методические указания по определению остаточных количеств хлорсодержащих пестицидов в почве методом газо-жидкостной хроматографии
Гексахлорбензол, мг/кг	<0,0001	МУ 1766-77 Методические указания по определению остаточных количеств хлорсодержащих пестицидов в почве методом газо-жидкостной хроматографии
ДДД, мг/кг	0,00049 ±0,00022	МУ 1766-77 Методические указания по определению остаточных количеств хлорсодержащих пестицидов в почве методом газо-жидкостной хроматографии
ДДЭ, мг/кг	0,00055 ±0,00025	МУ 1766-77 Методические указания по определению остаточных количеств хлорсодержащих пестицидов в почве методом газо-жидкостной хроматографии

Протокол подготовил

Л.Ф. Дмитриева



Л.Ф. Дмитриева

О.С. Оффан