

THE USE OF SOIL CONTAMINATION RECORD MANAGEMENT SYSTEM FOR EIA IN SOUTH KOREA

Jung-Auk Park

Korea Environment Corporation, Seo-gu, Incheon, 22689, South Korea

*e-mail : eflame@keco.or.kr

Introduction

- Excavation work on the soil is inevitably part of the land development process, and this leads to the import and export of soil from the planned development site.
- If contaminated soil is taken out or brought in from the subject site without any management, the people's living environment is likely to deteriorate gradually, so preliminary survey and evaluation for soil contamination are very important.
- A soil contamination survey requires a considerable period of time and is also a significant cost. Therefore, in order to conduct an environmental impact assessment that is efficient in terms of time and cost, it is important to utilize existing databases in the soil contamination field.

Methods

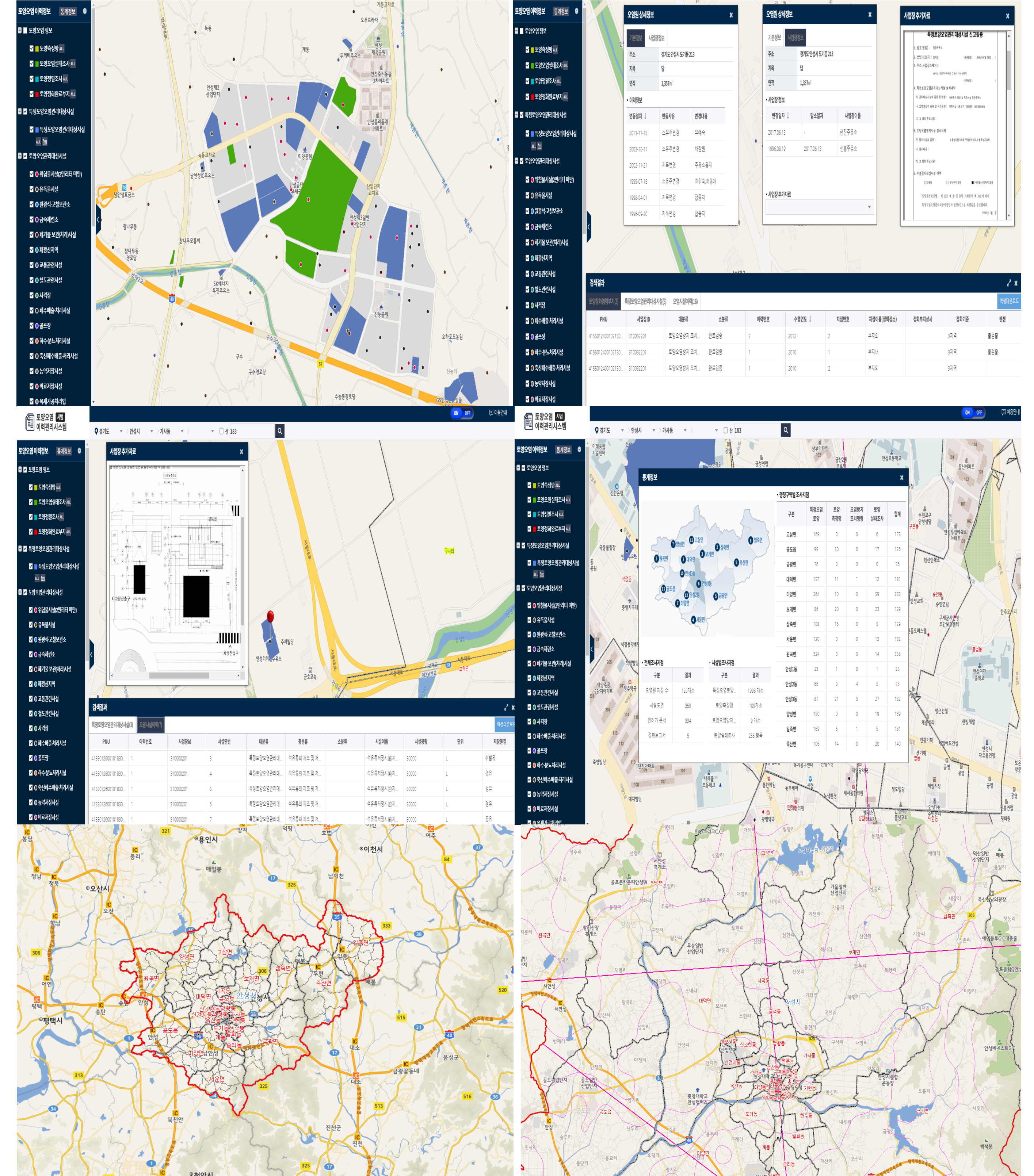
- The Ministry of Environment in South Korea(MOE) established the Soil and Groundwater Information System(SGIS) in 2005 and has been disclosing basic information related to soil and groundwater contamination.
- In 2011, MOE established a long-term plan to manage the information on soil contamination sources and soil contamination history data. Since 2012, MOE has collected the information of 27 types of soil contamination sources such as oil and hazardous chemical storage facilities, petroleum product pipelines, abandoned mine areas, waste storage facilities, wastewater discharge facilities, sites of contaminated and remediated soil, etc..
- And acquired about **1.46 million records** in its database.
- In addition, with the introduction of **the Soil Contamination Record Management System** in the Soil Environment Conservation Act of 2018, we are developing a database management system via our **Intranet and Internet** for inventories of major soil contamination sources, soil background concentrations, and site information for each land parcel, survey results of soil contamination and remediation.

Results & Discussion

- The SGIS provides the following information, and this information is used in environmental impact assessments to confirm the soil and groundwater contamination status of the evaluation site.
 - Nationwide soil background concentration measurement results
 - Soil contamination survey results and remediation status
 - Groundwater monitoring well and contamination status
 - Results of pesticide usage at golf courses nationwide, and etc.
- In 2017, a pilot project was conducted to build **a beta version of the soil contamination record management system** through collaboration among the central government and local government(Figure).
- The system was designed to provide comprehensive information by integrating results of nationwide soil quality monitoring, various soil contamination surveys, soil contamination remediation completion areas, and key soil contamination source information for each land parcel.
- Soil contamination records are classified into three information categories: basic information of land parcel, soil contamination information, and soil contamination probability information.
- And the structure of soil contamination record was designed to include detailed soil contamination information as well as to add reference data such as various reports, blueprints, permits, other administrative documents.

Results & Discussion

❖ Fig. Soil contamination record management system



❖ Table. Utilization plan for soil contamination record management system

Utilization area		Utilization	Target information
Public Sector (Intranet)	Central Government	- Trend analysis for soil quality to develop soil conservation policy - Selection of sites for a national priority list - Development of national soil management plan	All country Information
	Local Government	- Utilization as fundamental data to identify causes of contamination and responsible parties for remediation - Analysis of relationships between site conditions and soil contamination accidents - Trend analysis for contamination sources	
Private Sector (Internet)	Parties to a land transaction	- Evaluation of land value with soil contamination information - Promotion of transparent land transactions and resolution of disputes through disclosure of historical information	Target area (Site owner pre-approval required) overall statistical information
	General citizens	- Enhancement of autonomous soil contamination management for landowners by raising awareness of soil contamination - Reduction of public concerns about soil contamination through transparent disclosure of information	

Conclusions

- Once the official version the soil contamination record management system is developed, it is currently undergoing testing with a limited number of users.
- Information system related to soil and groundwater can be used as important basic data for efficient environmental impact assessment, and its utilization is expected to continue to expand.

References

- Soil Environment Conservation Act in South Korea