On the Influencing Factors and Improvement Strategies of Environmental Monitoring

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Abstract: With the continuous progress of social economy and the raise of people's living standard, the environmental pollution is becoming more and more serious, even threatening people's health. To improve the natural environment on which people depend and promote the sustainable and healthy progress of social economy, China has improved the monitoring of the environment to maximize the quality of the environment. Therefore, this paper analyzes the factors that affect the monitoring effect in environmental monitoring, and puts forward some improvement schemes, only for reference.

1. Introduction

The purpose of environmental monitoring is to make a real, effective and comprehensive assessment of the current environmental quality through collecting and integrating the monitoring data according to the monitoring labels, so as to improve the accuracy of the detection results. Meanwhile, it analyzes and traces the source of environmental pollution in combination with the pollution distribution, so as to provide more data basis for the normal and effective work of environmental pollution control and supervision [1]. By strengthening the monitoring of environmental quality, people can timely and effectively grasp whether the air environmental quality index of people's environment conforms to the national environmental standards, realize the rational use and progress of natural resources, increase the utilization rate of natural resources, and provide a good living environment for human beings.

2. Basic Process and Type Analysis of Environmental Monitoring

Firstly, the basic process of environmental monitoring is to collect, analyze and integrate environmental data and information, including the collection of data and information on geology, urban population distribution, climate, topography, hydrology and pollutant emission. Secondly, the monitoring program and technical route should be well planned, and the monitoring objectives, time, methods and frequency should be implemented. Finally, we should perfect the environmental quality assurance system, clear the purpose of good quality control work, do a good job in the later data collation and collection, make a comprehensive evaluation on the integrated data, and integrate all the relevant environmental monitoring information and materials for file entry, so as to facilitate the comparative use of later environmental monitoring [1].

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During effective monitoring of the environment, according to the different monitoring objects, combined with the characteristics of the environment, it can be roughly divided into water quality monitoring, air monitoring, solid waste monitoring, soil monitoring, biological monitoring and physical pollution monitoring and other types. No matter which type of environmental monitoring requires a lot of data information and materials as the basis of monitoring.

3. Influencing Factors of Environmental Monitoring

With the progress of social economy, science and technology, the factors that affect the environmental monitoring in China are as follows:

3.1 Environmental Monitoring Technology

During environmental monitoring, environmental monitoring technology plays a crucial role and is also one of the core factors affecting environmental monitoring. Owing to the progress of modernization, the information-based and intelligent environmental monitoring technology is more sensitive and more beneficial to the accuracy of environmental monitoring. Therefore, if staff want to ensure the timeliness of environmental monitoring and governance, get the relevant monitoring data information and materials more detailed and accurately, they must focus on the significance of monitoring technology. Only when the environmental monitoring is strengthened, can we obtain more information and data of different environmental monitoring data, so as to have a deep understanding and grasp of the environmental pollution situation. Meanwhile, with a full understanding of the environmental monitoring technology and equipment update, the data monitoring and material information collection, analysis and sorting of the environment can enhance the accuracy and efficiency of data information, and promote the completion of quality and quantity of environmental monitoring work.

Due to the fast progress of science and technology, environmental monitoring technology is more modern, intelligent and information-based. It realizes the automatic collection, analysis and sorting of environmental monitoring data, and realizes remote control of environmental monitoring equipment by Internet technology. It can be seen that with the progress of science and technology, people increasingly rely on and demand intelligent technology. The intelligent development of environmental monitoring technology helps the environmental monitoring work liberate a lot of labor force and promote the efficiency of environmental monitoring.

3.2 Low Comprehensive Quality of Monitoring Personnel

Environmental monitoring personnel need to have good technical level, theoretical basis, sense of responsibility, sufficient working experience and correct working attitude. Only if the above conditions are met, can the timeliness and performance of environmental monitoring results be guaranteed. Monitoring personnel's failure to understand and master the monitoring methods, technologies, standards and specifications due to their own mistakes and nonstandard operation will affect final results and quality of environmental monitoring. Especially at this stage, the government has issued some new standards and norms for environmental monitoring. Problems such as inaccurate environmental monitoring data due to abnormal conditions occur frequently. On the one hand, it is caused by the working attitude of the monitoring personnel, and on the other hand, it is determined by the comprehensive quality of the monitoring personnel. Therefore, the relevant environmental monitoring departments must focus on perfecting the staff's quality [2].

3.3 Monitoring Equipment and Sampling

Sampling is a crucial part of environmental monitoring. While sampling, the monitoring personnel will go to the outdoor for field sampling. Due to the difference of climate and environment in each region, the sampling results will change to different degrees with the sampling time. Even after the sampling, the sampling results will also vary due to the different storage mode and transportation time, affecting the monitoring results. Other acquisition instruments used in the acquisition process or the number of samples are significant factors affecting the results of sampling monitoring. Therefore, the inaccuracy of sampling monitoring results is not only due to the problems of the sample itself, but also due to the influence of external conditions. The sample collection personnel should work accurately in each work link, fundamentally eliminate problems, and provide professional personnel for irregular supervision and management, which plays a role of reminder in the transportation and storage of samples, so as to effectively ensure the accuracy of monitoring results and enhance the quality of sample monitoring. For environmental monitoring, in addition to the monitoring personnel's full grasp of good monitoring technology and theoretical knowledge, professional quality monitoring equipment is also necessary as support to achieve the data collection of each sample and link, increase the accuracy of the test results.

4. Improvement Strategies to Effectively Enhance Environmental Monitoring Quality

Owing to the progress of science and technology, the environment produces more and more influence on people's work and life. To accurately grasp the environment and enhance the quality of environmental monitoring, we have carried out in-depth research on the improvement methods of several main factors affecting the quality of environmental monitoring.

4.1 Sampling

Firstly, while sampling monitoring samples, the monitoring personnel should strictly follow the *Technical Specifications for Monitoring* to conduct step-by-step technical sampling, focus on the uniformity and rationality of distribution point arrangement, and also collect samples with good comparability and contrast. Secondly, the density, speed and flow rate of sampling are specified, and the sampling standards are strictly followed to ensure the accuracy, timeliness and safety of sample collection. Then, while sampling surface water, to ensure the accuracy and representativeness of sampling, the staff should constantly stir the sediment at the bottom of the water to ensure the uniformity of the data of the sampling water. For some rivers with serious pollution, the collector can clean up the surface pollutants first, and then take water samples. Finally, in the gas sampling stage, the reasonable sampling equipment and method are selected according to the formation of pollutants, and the air collection speed, power, production and time are strictly controlled, and then the selection of filler, absorption solution or various filter materials is carried out according to its physical properties. In addition, in the collection of samples, staff should also consider the influence of meteorological parameters. The results of a large number of pollutant diffusion tests show that under different meteorological conditions, when the same pollution source discharges pollutants on the ground, the concentration is different, which is several times or dozens of times, or even hundreds of times different from the daily pollutant concentration. Therefore, the monitoring personnel must focus more on it [3].

4.2 Optimize the Working Ability of Monitoring Personnel

As the core researchers of environmental monitoring, monitoring personnel are very crucial in environmental monitoring. Monitoring personnel play a key role in the collection of data and information on the quality of the natural environment and the collation of materials, such as the

field collection of experimental samples, the collection and collation of relevant data, and the extraction of analysis information of samples in the later stage. In addition to environmental monitoring equipment, the working ability and workload of monitoring personnel have a direct impact on the results and efficiency of environmental monitoring. In order to ensure the accuracy of monitoring results, during the in-depth pollutant sampling research and analysis of the causes of most environmental pollution accidents, the timeliness of pollutants is very crucial to avoid the form and concentration of pollutants from spreading too fast. Based on the technology of monitoring results, the staff conduct a rapid review of all the relevant contents in the monitoring process to ensure the accuracy of the monitoring results. In addition, we should constantly focus on enhancing the working ability and quality of the monitoring personnel, cultivate the innovation ability of the staff, optimize the traditional working mode and methods, fundamentally eliminate the occurrence of environmental problems, enhance the working ability and efficiency of the monitoring personnel, attach importance to the construction of the monitoring team and the training of the monitoring personnel, and train more reserve forces for later monitoring work.

4.3 Focus on the Update of Equipment

Due to the increasingly serious environmental problems, the types of projects to be monitored by monitoring departments gradually increase, which puts forward higher requirements for monitoring equipment. Relevant monitoring departments must focus more on monitoring equipment. Firstly, we should regularly check the performance of monitoring equipment to ensure the accuracy of monitoring data. Secondly, according to different standards of monitoring instruments, the monitoring standards of project verification are different. The national standard instruments can follow the national standard and non-national standard instruments should be verified according to the requirements of the manufacturer. Thirdly, in the process of environmental monitoring, monitoring equipment should be equipped with perfect supervision and management mechanism, and the responsibilities of each monitoring personnel should be clear. Fourthly, it is necessary to focus on the timely update of the equipment. In order to ensure the timeliness and accuracy of the monitoring results, scientific researchers should update the monitoring equipment regularly to improve the detection quality and work efficiency [4].

5. Conclusion

In conclusion, environmental problems are closely related to people's work and life. In order to ensure people's health, strengthening the quality monitoring of the environment and enhancing the improvement of the environment become particularly crucial. This paper analyzes some factors affecting the environmental monitoring, such as collection, equipment and monitoring personnel themselves. Through optimizing monitoring equipment, improving the quality of monitoring personnel and strictly following sampling standards, the results of environmental monitoring are improved, so as to provide various important basis and support to increase the accuracy and timeliness of environmental monitoring results in the future.

References

[1] Hu Yafen, Lu linling, Xu Yuanting. Exploring the Influencing Factors and Improvement Strategies of Environmental Monitoring. Green Building Materials, no.06, pp.33-34, 2021.

[2] Ye Yanghong, Liang Qingxun. Analysis on Quality Control Measures of Water Environment Monitoring. Resource Conservation and Environmental Protection, no.05, pp.36-37, 2021.

[3] Yu Chengpeng, Yu Fang. Influencing Factors and Details of Environmental Monitoring Field Sampling. Leather Making and Environmental Protection Technology, vol.2, no.06, pp.34-35, 2021.

[4] Yu Chengpeng, Yu Fang. Influencing Factors and Details of Environmental Monitoring Field Sampling. Leather Making and Environmental Protection Technology, vol.2, no.03, pp.31-32, 2021.