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The Impact of the Existence of the Blang Bintang Final Processing Site on Environmental Conditions

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Abstract

The purpose of this study is to determine the impact of the existence of the final processing site of Blang Bintang on environmental conditions. A qualitative approach with a descriptive type used in this study. The data collection technique uses observation at the landfill location and interviews with landfill management informants and the community who are active around the Blang Bintang landfill. The research location is at the Blang Bintang Landfill, Aceh Besar Regency. The data analysis techniques used data reduction, data display*, and conclusion or verification. The results of the study show that the final processing site is a place where waste is safely isolated so as not to cause disturbances to the surrounding environment. The Blang Bintang Landfill is a new landfill that was built after the tsunami as an urgent need for a waste shelter and replacement for the old landfill in Gampong Jawa, Banda Aceh City, which was damaged and full. Then, the impact on the environment caused by landfill activities such as the impact of water, air and soil pollution is still relatively low, however, the potential for pollution remains, especially surface water pollution such as reservoirs and rivers that occur during the rainy season.*

Keywords*: impact; final processing site, environment*

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INTRODUCTION

Indonesia is an archipelagic country that has the 4th largest population in the world after India, China and the United States. Therefore, Indonesia is also one of the largest waste contributors in the world, based on data from the National Waste Management System (SIPSN) in 2022, the amount of waste in Indonesia every day reaches 95,500 tons. Waste is a consequence of human activities. Every human activity must produce waste or waste. The amount or volume of waste is proportional to the level of human consumption of goods/materials used daily. Likewise with the type of waste, it depends on the type of material consumed. Therefore, waste management cannot be separated from the management of people's lifestyles (Kasam, 2011).

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The impact according to the Great Dictionary of the Indonesian Language is a collision, an influence that brings both positive and negative consequences. The definition of impact in general, impact is everything that is caused by the existence of 'something'. Impact also means consequences before and after the existence of 'something'. According to this understanding, something is a landfill, and the consequences before and after something are the existence of waste and its impact on the surrounding environment, both the natural environment and the social community (Solikhah et al., 2011) so that based on the 2009 Environmental Law (UULH), article 16 is: "Every plan that is estimated to have an important impact on the environment must be completed with an analysis of environmental impacts whose implementation is regulated by government regulations"

The impact of the amount of waste that increases every day is that the Indonesian government issued regulations contained in the Law of the Republic of Indonesia. Waste management has been regulated in Law No. 18 of 2008. A Final Processing Site (TPA) is a place to process and return waste to environmental media safely for humans and the environment. Waste processing is preceded by changing the characteristics, composition, and amount or volume of waste. The provision of landfills in big cities faces land limitations. Therefore, regional landfill management is more needed. The implementation of waste management includes the provision of waste shelters, waste transportation facilities, temporary shelters, and integrated waste processing sites (Mahyudin, 2017).

Tuuk et al., (2023) said that Final Processing Sites (TPA) are places used to dispose of waste that can no longer be processed. Given the magnitude of the potential disturbance caused to the environment, the selection of landfill locations must be done carefully and carefully. This is shown by the very detailed requirements for landfill locations as listed in the SNI on the procedures for selecting landfill locations in the regional criteria listed: not geological prone areas (fault areas, landslide-prone areas, earthquake-prone areas, etc.), not hydrogeological prone areas, namely areas with groundwater depth conditions of less than 3 meters, soil types that are easy to absorb water, close to water sources (in the event that it is not met, technological input must be carried out), not topographically prone areas (land slope of more than 20%), not areas prone to aviation activities at airports (minimum distance of 1.5 - 3 km), not areas/areas protected by Final Processing Sites (TPA).

The environment of an organism is everything that is present around the organism, which affects the existence of the organism in question. Organisms are everything that lives, both macrobiological and microbiological, from the world of fauna and the world of flora. Everything that is present around the organism includes, various forms of objects (inorganic), the organism itself, natural processes and phenomena such as rain, wind, mountain eruptions, flowing water, erosion, landslides, water, air, climate, temperature, sea, beaches, lakes, mountains, hills, valleys, etc. (Mutakin, 2018). In the Law on environmental protection and management, namely Law No. 32 of 2009, the environment is a spatial unit with all objects, powers, circumstances and living things, including humans and their behavior, which affect the continuity of life and the welfare of humans and other living beings. Sodikin, (2007) said that environmental pollution is one of the causes of environmental damage. Humans are components of the natural environment that together with other natural components, live together and manage the environment. Basically, all development businesses and activities have an impact on the environment. The initial planning of a business or development activity must contain an estimate of its impact on the environment, in order to be considered whether the plan needs to make an analysis of environmental impacts.

Saputra et al., (2020) stated that due to improper waste management, it often invites flooding as a routine agenda when the rainy season comes, garbage that clogs drainage channels makes water not flow properly, so that water overflows flooding residents' settlements. Another social case caused by waste is the decline in environmental quality in every period. Another consequence that can be caused by waste is the decline in aesthetics around landfills so that it has the potential to cause social conflicts with the community. Hadi, (2005) The environmental and social impacts arising from landfills have become a common phenomenon in big cities such as Jakarta (Bantargerbang), Surabaya (Keputih, Sukolilo), Semarang (Jatibarang) and even lead to vertical conflicts. Resistance to landfills by locals has become a common phenomenon. In the context of solving the waste problem, changing consumption patterns is one of the approaches that must be started. Based on the results of previous research conducted by Solikhah, (2011) the impact of the existence of Final Disposal Sites (TPA) in the economic field improves the economy of residents, improves welfare and raises the dignity of the community because even though it is only by scavenging garbage, their income is sufficient, they can buy livestock and valuable goods for their savings. In terms of social society, social gatherings, mutual cooperation, foster togetherness even though social interaction and communication between communities are small because they spend a lot of time in the Final Disposal Site (TPA) so that a lot of time is wasted outside and only certain activities can bring them together to get to know each other.

Another study by Saputra et al,. (2020) The existence of landfills as a landfill should be held with safety considerations from environmental pollution that has an impact on public health, both directly and futurely. Landfills remain one of the popular solutions in the waste problem, because it is very difficult to destroy or reduce the amount of waste produced from daily human activities along with the increasingly significant growth of the human population. A similar study was also conducted by Eka, (2021) on the increase in the amount of waste from year to year, which ultimately causes pollution, such as water, soil, air, and reduced aesthetic value. The pollution can be observed in the area around the Supit Urang Landfill in Malang. Furthermore, at the Supit Urang Landfill in Malang, waste management efforts have been carried out using the SIKIPAS model developed by the Ministry of Public Works and Public Housing (PUPR).

Based on the results of some of the previous research above, it can be concluded that the impact of the existence of a final processing site (TPA) on environmental conditions is that it can cause water, soil, and air pollution. In addition to damaging the environment, the existence of landfills also has an impact on the social life of the community such as causing bad odors and health problems. However, the existence of landfills also provides benefits in improving the economy of people who work as scavengers. Based on the results of initial observations, the Blang Bintang Final Processing Site (TPA) is a place used to accommodate various kinds of waste produced from various domestic and non-domestic areas. This landfill is located in Data Makmur Village, Blang Bintang District, Aceh Besar Regency. The Blang Bintang Landfill is the latest waste collection site as a replacement for the landfill in Gampong Jawa, Kuta Raja District, Banda Aceh, which was built in 2018, this diversion was carried out because the Gampong Jawa landfill was full and it was impossible to accommodate waste anymore. Researchers found a problem of a strong smell that could be smelled all the way to the main road. because the Blang Bintang Landfill is the largest waste shelter in the Aceh Besar and Banda Aceh regions. Therefore, it is possible that the landfill causes other negative impacts such as water pollution, air pollution, and soil pollution.

Based on the above background, the researcher is interested in further studying this study with the title "The Impact of the Existence of the Final Processing Site of Blang Bintang on Environmental Conditions." Based on the background of the problems that have been stated above, the formulation of the problem in this study is "What is the impact caused by the existence of the final processing site of Blang Bintang on environmental conditions?"

LITERATURE REVIEW

The waste processing process at the final disposal site is basically a systematic effort to minimize the negative impact of waste on the surrounding ecosystem. Technically, the existence of this facility aims to isolate residual material so as not to pollute the deep soil layer and maintain the quality of residents' water sources (Siddiqua et al, 2022). Ideal management involves coating the soil with watertight materials to prevent sewage leakage, as well as providing drainage systems that are able to drain wastewater into special reservoirs. In addition, regular closure of the garbage layer with soil is a crucial step to prevent the proliferation of disease vectors such as flies and rodents, while suppressing the spread of unpleasant odors that can disrupt the comfort of settlements around the site. Viewed from a broader environmental perspective, the existence of this processing site also plays a role in maintaining the ecological balance of the area. By concentrating disposal at a single controlled point, the risk of litter dumping in rivers or open land can be significantly reduced (Ajayi et al, 2024). However, the main challenge still lies in the maintenance of supporting infrastructure facilities that must be continuously monitored so that the environmental protection function continues to run optimally.

METHODOLOGY

A qualitative approach with a descriptive type used in this study. The data collection technique used observation at the landfill location and interviews with 20 (twenty) informants consisting of the Blang Bintang Final Processing Site (TPA) Manager and the community who are active around the Blangbintang Final Processing Site (TPA). The research location was carried out at the Blangbintang Landfill, Aceh Besar Regency, the following is attached to the map of the research location in figure 1.

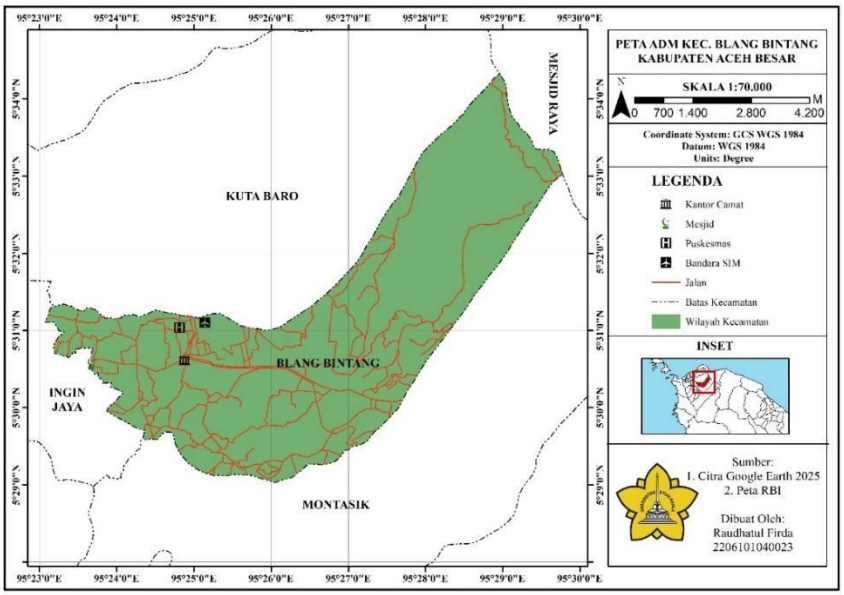

Figure 1. Administrative Map of Blang Bintang Distric

The data analysis techniques used used used data reduction, *data display*, and conclusion or verification.

RESULTS AND DISCUSSION

Based on the results of interviews and observations conducted by the researcher with the manager of the Blang Bintang Landfill and the community around Blang Bintang sub-district, Aceh Besar Regency regarding the impact of the existence of the Blang Bintang final processing site (TPA) on environmental conditions, the researcher can conclude. The Blang Bintang Final Processing Site (TPA) began construction in 2006 and was completed in 2012 and officially operated in 2015. This development is motivated by the urgent need for a new waste disposal site after the damage to the previous landfill in Gampong Jawa which was destroyed by the tsunami disaster. Efforts to rebuild landfills in old locations are considered unfeasible because they are located in coastal areas that are prone to disasters and are also no longer able to accommodate the volume of waste from Banda Aceh City. This is different from the results of research conducted by Winahyu et alI., (2013) on the Bantargebang Integrated Waste Management Site (TPST) facing various challenges, including protests from the surrounding community regarding environmental and health impacts, as well as the need to improve the efficiency of waste management. In an effort to overcome these problems, the government implements various strategies, such as improving infrastructure, involving investors in the construction and operation of TPST, promoting social participation, and improving the quality of human resources.

To overcome this problem, a special task force was formed to find a long-term solution to the problem of waste management. The results of the study and technical considerations finally recommended a new location in the Blang Bintang area, Aceh Besar. Because the location is outside the administrative area of Banda Aceh and is designed to serve more than one region, its status is designated as a regional landfill. With this status, its management is no longer under the authority of the City of Banda Aceh, but is the responsibility of the provincial government. The construction of the Final Processing Site (TPA) must meet various criteria as stipulated in the Regulation of the Minister of PUPR which includes technical, environmental, social, and legal aspects. One of the main criteria is the condition of the soil which must be stable, not prone to landslides, and have a strong enough carrying capacity to accommodate garbage heaps and the construction of supporting facilities. In addition, the location of the landfill must be far from surface water sources, not in disaster-prone areas such as active faults or protected areas, and have a good drainage system.

This is in accordance with the Regulation of the Minister of Public Works and Public Housing Number 03/PRT/M/2013 of 2013 concerning the Implementation of Waste Infrastructure and Facilities in the Handling of Household Waste and Similar Household Waste. The requirements for landfills as referred to in Article 29 paragraph (3) letter c include the provision and operation, must pay attention to the selection of location, physical conditions, ease of operation, environmental aspects, and social aspects. The selection of landfill locations at least meets the criteria of aspects: geology, i.e. not located in an active fault or fault area, not in a geological danger zone such as a volcanic area, not in a karst area, not in a peatland area, and it is recommended to be in an area with impermeable or clay soil layers. From a social perspective, the location must consider a sufficient distance from residents' settlements to minimize the impact of odors and health problems, as well as get support from the surrounding community. Accessibility is also an important factor, where landfills must be easily accessible by garbage transport vehicles

and have the availability of basic infrastructure such as roads, electricity, and clean water. Last but not least, the location of the landfill must be in accordance with the Regional Spatial Plan (RTRW) and have a clear legal status of the land so as not to cause conflicts in the future.

The volume of waste that enters the Blang Bintang Regional Landfill every day ranges from 250 to 300 tons, with an average of around 300 tons per day. However, this number does not always remain the same every day, as it is influenced by various factors such as seasons, community activities, and weather conditions. This is different from the results of Harjanti's research, (2020) The Jatibarang Landfill is the main landfill that accommodates 70% of Semarang City's waste, where the Jatibarang Landfill is able to accommodate 800 tons of waste per day. On certain days, especially during long holidays or the rainy season, holidays that usually cause the volume of garbage to increase are Eid al-Fitr, New Year's, or long school holidays. At such moments, community activities increase, many family events or gatherings that produce more waste, especially from food scraps, packaging, and other household waste, the volume of waste can experience a significant increase. On the other hand, on weekdays or when community activities decrease, the amount of waste that enters can be reduced.

The waste that enters the landfill comes from all over the Aceh Besar and Banda Aceh areas, the waste that is accommodated here is in the form of household waste and other household waste. This is in accordance with the results of research conducted by Nafi'ah et al., (2023) Banjarbakula Regional Landfill shows that the average waste that enters this landfill is household waste and household types. Almost all landfills in Indonesia are intended to accommodate household waste and household waste. Waste originating from the industrial sector is usually not disposed of in public landfills, as industries are required to have their own landfills or commercial waste treatment systems, although the type of waste generated is similar to household waste.

The main method used in waste management at the Blang Bintang Landfill uses arana and facilities built at the Blang Bintang Regional Landfill since 2015 support the implementation of *the sanitary landfill system,* which is designed for environmentally friendly waste management by minimizing negative impacts on the surrounding environment. This is in accordance with Fernando, (2011) The proposed waste processing technology is generally already existing in various other places in the world, namely incinerators, composting, sanitary landfills, and landfill bioreactors. Each of these alternatives was studied using the SWOT method according to the thoughts of waste practitioners in the research area. However, in its operational practice, there is often a decrease in the class of waste management, starting from *sanitary landfill to control landfill, and sometimes even down to open dumping.* This happens due to various technical and operational constraints that affect waste capacity and management. However, when conditions allow and the problems faced can be resolved, waste management in landfills is again improved, switching from *open dumping* to *control landfill*, and finally being able to return to the *sanitary landfill* system according to the expected standards. Based on the results of the interview, it can be concluded that until now the well water around the Blang Bintang Regional Landfill is still safe and does not experience pollution. This is due to the location of the landfill which is quite far from residential areas, about 5 kilometers, and the condition of the Blang Bintang area which has a deep aquifer, reaching more than 100 meters. Although the monitoring wells at the location had depths that did not meet the general standards, inspections by experts showed no change in groundwater quality. However, the potential for pollution remains, especially in surface water such as reservoirs

and rivers, which in the rainy season sometimes turn black due to leachate seepage that leaks through pipes and flows into sewers and then into reservoirs. Although the water of this reservoir is odorless and is not used for consumption, but for rice field irrigation, there are reports from the community that the use of the water can cause itching, so the management and supervision of drainage systems and pipes needs to be strengthened to prevent further pollution.

This is different from the results of research conducted by Fitri and Sembiring (2017). From the analysis carried out, the concentrations of BOD (405.003 mg/L), COD (782 mg/L) and TKN (391.51 mg/L) in leachate exceeded the applicable quality standards. The measured COD value in groundwater from residents' wells and monitoring wells has also exceeded the applicable quality standards, while the concentration of chloride in groundwater is still at the applicable quality standards. The water around the landfill that has been contaminated can no longer be consumed, but because the wells in the landfill have a depth of 100 m, it is not for consumption, it is only used as one of the landfill monitoring wells. The actions taken by the government and landfill managers to overcome water pollution by implementing and operating the Blang Bintang Landfill internally have followed standard operating procedures (SOPs) which aim to minimize negative impacts on the environment, both on water, air, and soil. Waste is managed regularly and not carelessly, while the leachate produced is also handled seriously. If there is a seepage or leak, the manager will immediately make repair efforts to overcome it. In addition, leachate is managed in such a way that the pollutant content in it is reduced before it is released into the environment, so that the impact can be suppressed to a minimum.

Air pollution, especially in the odor aspect of the Blang Bintang Landfill is recognized as unavoidable, especially in operational areas, but until now there have been no reports or complaints from the public or workers related to health problems directly caused by activities at the landfill. The workers at the location are also used to this condition. This is different from the results of Almeisa's research, (2024). Based on the results of interviews with people who are 300-700 m away from the landfill location, the people of KB village are disturbed by the smell that arises from the pile of garbage in the Puuwatu landfill, especially when the rainy season arrives.

The smell from the landfill is indeed felt, especially during the rainy season and at certain times such as when waste unloading activities are taking place. The odor that appears is usually temporary and does not occur every day, and tends not to spread far to residential areas. Although the smell is sometimes quite strong, especially after rain, most of the interviewees stated that they did not experience any health problems caused by it. In general, conditions are still considered safe. This is in accordance with Almeisa, (2024). Based on the results of interviews with people who live at a distance of 700-1500 m from the landfill location, the smell caused by garbage in the dry season is at a considerable distance and does not interfere with the activities of the Kampung KB community, while in the rainy season the smell of garbage will be smelled very strong even though the distance is quite far. Government actions or landfill managers to overcome air pollution are carried out by reducing odors in landfills that have been carried out in accordance with standard operating procedures (SOP), one of which is through *the sanitary landfill* method by closing piles of garbage using soil. This method is not only effective in reducing odors, but also aims to prevent the spread of diseases from open waste. However, to ascertain the extent to which air pollution occurs, special tools are needed that can accurately measure air quality. Currently, odor management still relies on simple physical methods, but it

remains an important part of maintaining the comfort of the environment around the landfill.

Until now, there has never been a landslide incident at the Blang Bintang Landfill, this shows that the waste arrangement and stockpiling system has been carried out properly and according to procedures, especially in maintaining the stability of the garbage pile. This is different from Fernando, (2011) who said that the waste problem in Indonesia not only has a bad effect on the environment but has claimed lives. The landslide at the Leuwigajah Landfill (TPA) which killed 143 people in February 2005 was repeated in September 2006 at the Bantargebang Landfill which resulted in the death of three people. Then, around the landfill area, there are indeed quite a lot of flies, rats, birds, caterpillars, and maggots. This condition is considered natural because the area is a natural habitat for various types of animals that are interested in piles of organic waste. This is in accordance with Putri and Emilia (2022) who stated that the place that flies usually like is a place related to human activities, because as a result of human activities it will produce waste in the environment. One of them is the Final Disposal Site (TPA).

Regarding disease cases (ISPA, diarrhea, skin, etc.) after the existence of the landfill, based on the results of interviews with several sources, until now there have been no reports or cases of disease spread that are directly caused by the existence of the Blang Bintang Regional Landfill. The speakers stated that as long as they worked or lived around the landfill, they had never heard of any complaints related to diseases due to landfill activities. Even if there are health cases, such as hives, it is more related to the use of polluted reservoir water, not due to direct exposure from landfills. This shows that landfill management is still running quite well in controlling the impact on the health of the surrounding community. This is different from the results of Solikhah's research, (2011) said that the people of Ngablak Hamlet do not complain about the existence of Final Disposal Sites (TPA) for their health. Initially, the community was bothered by air pollution, dust, noise pollution, very strong odors, especially during the rainy season, flies that landed and flew so that they interfered with their activities, but after a few months of living in the area, residents did not take this for granted and considered it ordinary.

As a form of effort to overcome the health impact of activities at the landfill, the management has collaborated with health agencies to conduct periodic monitoring. In addition, internally, the implementation of work in the field still follows the established operational procedures to minimize health risks to workers and the surrounding environment. As an additional step, workers are also often given health supplements to maintain their immune system to stay fit in the face of quite tough working conditions in the landfill environment. This is in accordance with the results of Solikhah's research, (2011) Every 1 month free health checks are held by the Piyungan Landfill Management Unit Office for the people of Ngablak Hamlet and its surroundings as well as for scavengers. Free health checks and free medication for the people of Ngablak Hamlet and scavengers. This is done to maintain public health and control their health even though they live in slum and unhealthy areas. Most of the workers at the Blang Bintang Landfill are locals from surrounding villages, such as Montasik and Empe Awe. This is similar to Kamila, (2010) who said that around 97% of the population around the Ngablak Landfill depend on waste as a source of livelihood, with various professions such as scavengers and cattle breeders. Most of them are indigenous people living around the landfill

It is estimated that around 40% of the workforce comes from the community around the landfill. This shows that landfill management also contributes to providing jobs for local residents. To overcome the negative impact of landfills, until now there has been no direct

involvement from Non-Governmental Organizations (NGOs) in activities at the Blang Bintang Landfill. All programs and monitoring carried out so far have come from the government, such as reforestation programs and routine supervision of landfill operations. This shows that environmental management and monitoring at landfills is still entirely the responsibility of the government, with no participation from non-governmental organizations as far as the sources are concerned. This is similar to the results of Fitroni's research, (2010) This study shows that in the implementation of waste management policies in Lamongan Regency, there has not been a role of NGOs in several programs implemented by the Regional Government. The relevant agencies do not seem to see an opportunity to actively involve NGOs in waste management.

The hope of the relevant parties for the management of the Blang Bintang Landfill is that its operations can run in accordance with the applicable procedures and regulations, although it is acknowledged that this is not an easy or cheap task. It is also hoped that the needs of the facilities and tools that have been proposed can be met immediately, considering that currently the response to these needs is still felt to be lacking. This is different from the results of Wasalawa's research, (2018) This study reveals that the Blang Bintang Landfill serves waste from Banda Aceh and Aceh Besar with an amount of around 200 tons per day. This landfill is managed by UPTD TePAT SaReA and adheres to the regulations that have been stipulated in the Law of the Republic of Indonesia and the Qanun of Banda Aceh City. In addition, immediate fixes to leaks that cause leachate to seep into the reservoir are an important priority. The handling of garbage scattered around the road due to the wind during the transportation process is also a concern, with the hope that the garbage can be collected immediately in order to maintain the cleanliness and comfort of the surrounding environment.

The Blang Bintang Landfill is located on Jalan Gampong Data Makmur, Blang Bintang District, and stands on an area of 206 hectares. This location was strategically chosen to support regional waste management with adequate access from multiple directions. This landfill is equipped with various supporting facilities and infrastructure such as adequate entrances for heavy vehicles, guard posts, management offices, garages, workshops, clean water, weighing, monitoring wells, composting tanks, perimeter fences, heavy equipment, leachate management, and landfills. The existence of the Blang Bintang Landfill with its area and completeness of infrastructure is an important component in supporting more integrated and sustainable waste management in the surrounding area. This post serves as a monitoring center for the entry and exit of garbage transport vehicles, ensuring that only the authorized parties can access the location, and becomes a coordination point for security and cleanliness officers. In addition, guard posts are also used to record daily operational data, monitor potential environmental or fire risks, and provide quick response in the event of an emergency. With the existence of guard posts, landfill management can run more orderly, safely, and efficiently.

Figure 2. Pos Jaga

The Administration Office at the Blang Bintang Landfill has an important role as an administrative center and coordination of all operational activities at the location. Its main use is to manage data and documentation related to waste volumes, disposal schedules, and carrier fleet activities. In addition, this office is also a place for technical planning, coordination meetings between officers, and information service centers for related parties, including local governments and partners.

Figure 3. Administrative Office

The garage at the Blang Bintang Landfill serves as a storage and maintenance place for operational vehicles, such as garbage trucks and heavy equipment used in the final processing process.

Figure 4. Garage

The workshop has an important function as a place for maintenance and repair of vehicles and heavy equipment used in waste management operations. Its uses include technical repairs, routine servicing, replacement of spare parts, and handling sudden damage to keep the fleet in optimal condition.

Figure 5. Workshop

Clean water facilities at the Blang Bintang Landfill are very important to support operational activities and maintain a clean work environment. Its uses include meeting the sanitation needs of officers, such as bathing, washing hands, ablution and cleaning work equipment.

Figure 6. Clean Water

Weighing at the Blang Bintang Landfill serves as the main control tool in recording the volume of waste that enters every day. Its main use is to weigh waste transport vehicles before and after disposing of cargo, so that the net weight of the waste disposed of in the landfill can be known. This data is very important for the purposes of administration, reporting, evaluation of waste management performance, and planning the capacity and technical life of the landfill.

Figure 7. Weighing

Perimeter fence The perimeter fence at the Blang Bintang Landfill has an important role in maintaining the security and order of the Final Processing Site (TPA) area. Its main function is to prevent unauthorized access from outside parties, such as the general public or wild animals, which could jeopardize safety and interfere with the operation of the landfill. In addition, this fence also serves as a clear physical boundary between the landfill area and the surrounding environment, helping to control the spread of odors, dust, and other potential pollution. With adequate perimeter fencing, the Blang Bintang Landfill can operate safer, more orderly, and in accordance with applicable environmental management standards.

Figure 8. Perimeter Fence

Heavy equipment Its uses include transporting, leveling, and compaction of waste in landfill zones, as well as covering soil treatment. Some types of heavy equipment that are commonly used include bulldozers to level waste, excavators to lift and move materials, and compactors to compact garbage piles to save space. With the presence of this heavy equipment, activities at the landfill can be carried out faster, safer, and in accordance with technical standards for environmental management.

Figure 9. Heavy Equipment

Leachate ponds serve as a reservoir and treatment of liquid waste generated from decaying piles of organic waste. This leachate contains a variety of harmful substances such as heavy metals, organic matter, and chemical compounds that can contaminate soil and groundwater if not handled properly. Therefore, leachate ponds are designed to accommodate, precipitate, and treat the water through physical, chemical, and biological processes before being discharged into the environment. With this pond, the risk of environmental pollution can be reduced, and waste management in landfills becomes more environmentally friendly and in accordance with sanitation standards.

Figure 10. Leachate Pond

The Blang Bintang Landfill has the main use as an area for long-term waste storage managed by a *sanitary landfill* system. In this system, incoming waste will be compacted, stockpiled with soil layers every day, and managed in a controlled manner to prevent air, water, and soil pollution.

Figure 11. Uruk Land

CONCLUSION

Based on the results of the research with an interview method on the impact of the existence of the Blang Bintang Final Processing Site on Environmental Conditions, it can be concluded that, the Blang Bintang Landfill was built because of the urgent need for a new waste disposal site, because the previous landfill in Gampong Java was destroyed due to the Tsunami disaster, the Blang Bintang Landfill is still relatively safe from the impact of environmental pollution. Until now, the well water around the landfill is still relatively safe and shows no signs of pollution. This is supported by the location of the landfill which is quite far from settlements (about 5 km) and the condition of the deep aquifer. However, the potential for pollution remains, especially to surface water such as reservoirs and rivers that occur during the rainy season. The level of air pollution such as odors coming from the Blang Bintang Landfill is a condition that cannot be completely avoided, especially during the rainy season or when waste unloading takes place. Although the smell occasionally smells strong, so far there have been no reports or complaints from the public or workers related to health problems directly caused by the smell. The odor caused is also not widespread and tends to be temporary. Overall, management at the Blang Bintang Landfill is still considered safe, but it still requires continuous supervisio n and improvement to maintain the quality of the surrounding environment. Until now, there have been no reports or cases of the spread of diseases directly caused by the existence of the Blang Bintang Landfill. Health cases such as hives are more caused by the use of polluted reservoir water, rather than direct exposure from landfills. This shows that landfill management is still running well in controlling the impact on the health of the surrounding community. The suggestions in this article are: 1) Even though the existing pollution is not too large, it is hoped that there will still be more serious handling efforts from the relevant government, to overcome the impact that can be caused by landfills. 2) It is expected that landfill managers will pay more attention and take quick action when there is damage that occurs so as not to disturb the surrounding community. 3) It is hoped that public awareness will be disposed of in its place and reduce the use of plastic waste, because plastic waste is difficult to decompose and can pollute the environment. 4) With the preparation of this article, the author hopes that all readers can find out the impact caused by the existence of landfills in an area.

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