Environmental and Social Consideration

Quarterly Progress Report

Period of October - December 2019

Directorate General of Sea Transportation

Ministry of Transportation

Republic of Indonesia

Attachment No.16 Environmental/Social Monitoring Results

1. Implementation of RKL-RPL (Environmental Management and Monitoring Plan in EIA)

A. Pre-Construction Phase

Reported in the previous report (PSR in April 2019).

B. Construction Phase

Implementation of RKL RPL (Environmental Management and Monitoring Plan) regularly conducted semester-based as stipulated in Environmental Permit No. 136/Menlhk/Setjen/PLA 4/2/2017 regarding Development of Patimban Port at Patimban Village, Kalentambo Village, Gempol Village, Kotasari Village, Pusakaratu Village, Pusakanagara District, and Pusakajaya Village at Pusakajaya District, Subang Regency, West Java Province. The implementation of RKL RPL Report Construction Phase Semester II already submitted in October 2019 to relevant agencies; Ministry of Environmental and Forestry, Environment Agency of West Java Province, and Environment Agency of Subang Regency.

No	Potential Environmental Impact			Descriptions of RKL/RPL		Implemented Mitigation Measures / Monitoring Results (Data and Photos are attached)
	Type of Impact	Indicator of success of Environmental Management	Impact source	Method of Environmental Management Plan (RKL)	Method of Analysis and Data Collection (RPL)	
Managed Significant Impacts (referred to EIA)						
CONSTRUCTION PHASE						
2.	**Procurement of Labor and Basecamp Operation**					
2A	Opening job and business opportunity	People affected/local people that recruited as workers > 20%)	Procurement of Labor and Basecamp operation	a. Prioritize local workers from the affected area as required, educational background, qualification needed, and inclusion of workers social assurance, and referred to Regional Minimum Wage (Upah Minimum Regional); b. Coordinating with related institution to livelihood restoration program of affected people, as stated in the LARAP document as follow: • Conducting training program; • Conducting venture capital aid program;	a. Identifying the number of local workers; b. Identifying the number and type of business opportunity that evolve nearby; c. Evaluating the livelihood restoration program for affected people; d. Regarding the information and data that need to be explored deeper, shall conduct an in-depth interview with key informants, such as with local elderly representatives; e. Monitoring workers recruitment relevant to qualifications;	The implementation of job and business opportunity on the period of October to December 2019 consist of; • The Project for terminal construction under Package 1 started on October 29th,2018. The number of local people that recruited during the respective period was 157 people or equal to 15.38% in October, of a total of 1.021 workers, 158 people or equal to 14.85% in November, of a total of 1.065 workers, and 157 people or equal to 14.12% in December 2019, of a total of 1.112 workers. The percentage of local people that recruited still below 20% due to the activity needs a particular skill to be conducted, even though for non-skill recruited prioritized for people. • The Project for breakwater, seawall, channel dredging under Package 2, started in April 2019. The local number people that were recruited during the respective period was 67 people or equal to 26.17%

				• Conducting new business activity program • Conducting; marketing assistance program • Conducting equipment aid program; c. Coordinating with Pusakanagara and Pusakajaya sub-district due to job vacancy information **[a: DGST, CP1, CP2, CP3, CP4, b,c:DGST]**	f. Monitoring of safety work implementation especially in the construction phase; **[c, d: DGST]** **[a, b, e, f: CP1, CP2, CP3, C P4]**	on October of total worker about 256 people, 67 people or equal to 22.19% on November of total worker about 302 people, 82 people or equal to 20% on December of total worker about 410 people. • The project for access road construction under Package 4 started in October 2018. The number of local people that recruited during the respective period; 299 or equal to 25.15% of 1.189 total workers in October, 299 people or equal to 21.87% in November of total 1.367 workers, 316 people or equal to 22.35% in December of total 1.414 workers. The implementation of the Livelihood Restoration Program on the period of October to December 2019 consists of, Welding Training, Culinary Training, Cleaning Service Training, and Stevedoring workforce training. • Welding training was held for the second batch from 18 November to 10 December 2019 and attended by 39 participants. This training aimed to improve community skills in the welding area, so in the future, they are ready for works in the industrial area. • Cleaning service training was held on 23th to 29th November 2019 and attended by 31 participants. The aim of cleaning service training is to give information and knowledge to the participant on how to do daily cleaning service, basic cleaning service, and general cleaning service. • Culinary training first batch was held on 16 to 19 November 2019, attended by 40 participants. Culinary training aims to enhance the culinary skills. The training provides information on how to prepare the material, process with hygienically, and food packaging. The training itself consist of skill training for three days and follow up by individual practices for 14 days. • Stevedoring Work Force training (Tenaga Kerja Bongkar Muat) batch 2 was held on 11 to 19 December 2019. 30 participants from affected villages attended the training. The training aims to fulfill basic information about working in port activities such as; container crane operational, the principal of Stevedoring Work Force, rigging

						apparatus, hand signal, and lashing container. The participants who pass the training exam will be provided with a certificate, capable of utilizing their abilities for the same purposes.  Welding Training  Cleaning Service Training

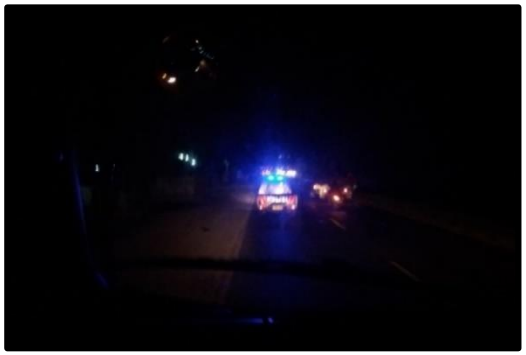
						 Welding Training Practice  Culinary Training Practice  Stevedoring Workforce Training
3.	**Heavy equipment and materials mobilization**					
3A	Deterioration of air quality (TSP and emission)	Concentration of SO_2, CO, NO_2, and TSP doesn't exceed air quality standard based on Government regulation No. 41 years 1999 on Air pollutions control.	Heavy equipment and materials mobilization	a. Heavy equipment and material mobilization using construction access road of Patimban seaport which is relatively quiet and away from settlements (non-asphalt pavement); b. Closing the tanks of transporting material vehicle with tarps;	Conducting air quality laboratory analysis, after which the results are compared with air quality standards based on Government Regulation No. 41 of the year 1999. Furthermore, monitoring results shall be converted into average values and compared from time to time (data trend) to see the	CP 1 Implementation: The traffic condition affected by the project was monitored periodically. A vehicle volume survey was conducted once a month. CP 1 & 2. Implementation: Controlling air quality due to vehicle mobilization and material mobilization due to the potential increasing volumes of SO2, CO and NO2 exhaust gases from the combustion of vehicle fuel, increased PM 10 content in

				c. Transporting the materials to the location using the proper operation vehicle that passed the KIR test (in testing to see if the vehicles are well maintenance); d. Developing of washhouse to clean transporting vehicle wheels before out from project site location; e. If there are materials spills on the passing road from construction materials mobilization, it shall be cleaned as soon as possible; f. Watering the road periodically. **[CP1, CP2, CP3, CP4]**	tendency of environment quality change and controlled status with a critical level. **[CP4]**	the air due to mobilization of vehicles which lift dust from the road surface up and suspended in the air ambient. To be able to prevent and reduce this project activities regulations applied to all field implementers (sub-contractors), as for the points that accommodate to prevent a decrease in air quality are as follows: 1. Vehicles used to transport materials and vehicles used to mobilize workers using vehicles that are still operational and pass the KIR test (Vehicle Proper Test) 2. limiting the speed of vehicles entering and leaving the project area & every vehicle carrying material must use the top cover. 3. reducing the decrease in air quality due to suspended particles, watering carried out both on the road and the location of the work during construction phase in periodically. 4. Using Sea line & nighttime (road line) for material transportations.   Sea Transportation | Nighttime transportation Transportation of materials used sea transportation and project access road (Nighttime) and relatively quiet and away from settlements   • Roads were sprinkled periodically to reduce dust pollution by road sprinklers, so that dust pollution tends to be under control and limits.

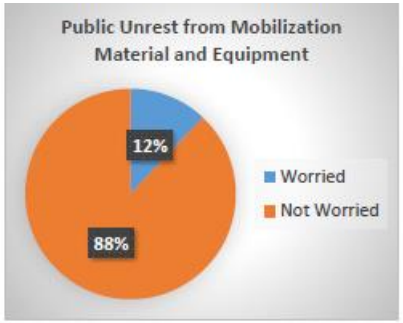
						  Mobilization of heavy equipment were conveyed by sea transportation (Materials for seawall construction) CP 3. Implementation: Work has not yet started CP 4. Implementation:   • Roads were sprinkled periodically to reduce dust pollution by road sprinklers  

						  • Air quality measurement was conducted in October 2019. The monitoring results of air quality with five parameters (SO2, CO, NO2, PM10, TSP) were below the threshold, as shown in the attachment. The next measurement will be conducted in April 2020.    Speed control sign  

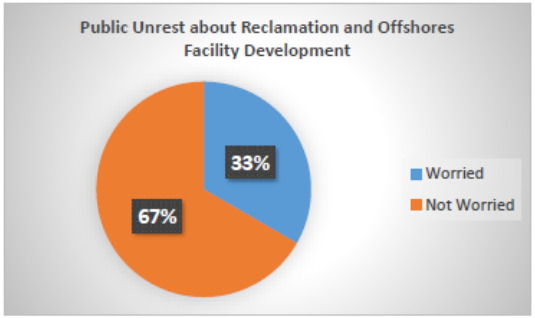
						The Truck of transporting material vehicle were closed with tarps and installed wash-house for vehicle wheels   The washing of vehicle tyre wheels and road cleaning at project Access due to soil materials spilled  Proper operational labeling for project vehicle by sticker (KIR) from Authority Office
3B	Land traffic disruption	No occurrence of traffic jam as the effect of heavy equipment and materials mobilization	Heavy equipment and materials mobilization	a. Coordinating with transportation institution to install traffic sign around the development of Patimban seaport location under ministerial regulation No.13 year 2014 about the traffic sign; b. Coordinating with police agencies to organize traffic around the Patimban seaport development location; c. Installing sign of construction warning signs in the entry and exit access of Patimban seaport development location;	a. Monitoring traffic condition; b. Identifying the accident number that occurred.	Implementation Package 1: The traffic condition affected by the project was monitored periodically. A vehicle volume survey was conducted once a month. During October to December 2019, no accident and traffic jam related to the project was reported. No occurrence was recorded of traffic jams at Pusakanagara road going to Jobsite confirmed because construction equipment and materials were transported during night time (as requirements). Also, the type/weight of equipment and speed were restricted.

				d. Arranging schedule of heavy equipment and materials mobilization not in the vehicle peak hours; e. Coordinating with police officer by putting them in some locations; f. Implementing ANDALLALIN (Assessment Impact of Traffic) recommendation. **[DGST, CP1, CP2, CP3, CP4]**		 Land Traffic Inspection Implementation Package 2: During October to December 2019, no accident and traffic jam related to the project conducted by Package 2 port development project was reported. The regulation was applied to avoid accident and traffic jam; the mobilization was escorted by police, speed limitation which are maximum of 40 km per hour, mobilization schedule, the truck which transport the materials was covered by tarpaulin, signage around the project area, long vehicle (FUSO) was carried out between 9 pm to 5 am, and trailers was carried out between 12 am to 5 am. Material mobilization escort by police  Implementation Package 4: Traffic condition was monitored periodically, implementation within October to December shown that there are 2 traffic accidents were reported and there was no victim. Equipment with appropriate and sufficient signs. Completing with flagman for traffic control. The mitigation measures related to the activity occurred; coordinate with related parties (police), equipped with

						appropriated and sufficient sign, flagman for traffic control, installation of a speed bump at the intersection with the residents.  Flagman for traffic control (left) and signage (right) See the attachment of land traffic conditions and accident numbers.
3C	Sea traffic disruption	No occurrence of ship collision on the Patimban area	Heavy equipment and materials mobilization	a. Coordinating with UPP (Port Operator Unit) Pamanukan about material transporting route on the sea; b. Coordinating with Tanjung Priok Navigation District about materials transporting sailing line; c. Socializing materials transporting route to the fishermen; d. Organizing material transporting time; e. Implementer contractors opening the communication with the ships around the materials transporting route. **[DGST, CP1, CP2, CP3, CP4]**	a. Monitoring sea traffic condition; b. Identifying the accident number that occurred. **[CP1, CP2, CP3, CP4]**	Sea traffic condition related to the project was monitored periodically. Implementation Package 1: From October to December 2019, no occurrence was recorded of ship collision at Patimban waters. Offshore activities coordinated with Patimban harbor master and necessary permits have secure before the start of works.  Sea traffic condition (CDM Barge) in the construction area Implementation Package 2: No significant sea activity was conducted from October to December. No accident was reported.

						  Crane barge for sea wall construction
3D	Public unrest	No public unrest occurrence.	Heavy equipment and materials mobilization	a. Socializing transporting route of heavy equipment and materials mobilization to the nearest community; b. Socializing the materials transporting route to the fishermen; c. Establishing a Grievance Redress Center /Fast Response Team to accommodate and responds to public unrest related to the Patimban Seaport; d. Making community discussion forums with local government to find a solution to problems aroused by the development activity. **[DGST, CP1, CP2, CP3, CP4]**	a. Measurement of the amount of grievances raised of heavy equipment and materials mobilization activity. The interview survey shall acquire its identification. b. Measurement of the amount of protest and demonstration raised to the representative office. The data shall collect by evidence of related reports to the local government, or to project implementing representatives (secondary data) c. Regarding the information and data that need to be explored deeper, shall conduct an in-depth interview with key informants, such as with local elderly representatives; d. The sampling population is calculated purposively. **[DGST, CP1, CP2, CP3, CP4]**	Implementation Package 1 Interview with the people around the project site conducted in December 2019, the sample number is determined by purposive sampling for people affected. The respondents select from various backgrounds such as local leaders, people affected, and fishers. Public unrest percentages about heavy equipment and material mobilization seen in the chart below. To maintain the public unrest condition to meet the minimum level for people not to feel worried, the contractors conducted the material and heavy equipment transportation by nighttime to avoid traffic jams, transport the heavy equipment and material accompanied by a patrol escort. 
4.	**Reclamation and off-shores facility development**					
4A	Deterioration of seawater quality (TSS).	TSS concentration belows environment quality standard based on Kepmen LH (Ministerial Decree of Environmental) No 51 year 2004 Seawater quality	Reclamation activity and off-shore facility development	a. Reclamation activity is conducted in the water area which has been bordered by seawall; b. Minimizing dumping volume as much as possible by adopting the newest technology, such as Cement Pipe Mixing.	Conducting seawater quality laboratory analysis, after which the results are compared with the air quality standard quality based on Kepmen LH (Ministerial Decree of Environmental) No. 51 year 2004. Furthermore, monitoring results are converted into	Implementation Package 1 • Reclamation activity is in under construction progress and has been bordered by rock-bund to prevent the increasing TSS parameter value due to the reclamation activity.

		standard Appendix I (80 mg/L).		**[CP1, CP2]**	average values and compared from time to time (data trend) to see the tendency of environment quality change and controlling status with the critical level. **[CP1]**	 CPM activities area was covered by rock-bund and Geotextile material as protecting and controlling the silt & cement dispersion.  Seawater sampling activity
4B	Fishing ground change.	No report of fishing area disruption and/or decreasing of fishers' production/income	Reclamation activity and off-shore facility development	a. Communicating and socializing with the fishermen community about reclamation and off-shores facility development. b. Making basic Rumpon (artificial fish shelter) according to the Regulation of Marine and fisheries ministry Republic of Indonesia No. 26/Permen-KP/2014 around Patimban waters out of DLKP (Regional Sphere of Interest) and DLKR (working area) Patimban seaport. **[DGST]**	a. Collecting data of number of grievances raised by analyzing the results of consultations taken during the survey; b. Monitoring fisheries production and its condition by interview with fishers. **[CP1]**	Implementation Package 1 a. There were no related complaints number based on the contractor's survey. b. Rumpon (artificial fish shelter) was under preparation. Meanwhile, based on community assessment, the majority of the community was asked for gillnet training (Rampus) as a program to restore their livelihood. Therefore, the priority program for the community was Assembling Rampus Net that already conducted for 4 batches with the number of participants, 176 people in total (as described in LRP training).
4C	Public unrest.	No public unrest occurrence.	Reclamation activity and off-shore facility development	a. Socializing to the fishermen about Rumpon (artificial fish shelter) installation plan according to the Regulation of	a. Identification of the number of grievances risen due to reclamation activity b. Identification by interview	Implementation Package 1

				Marine and fisheries ministry Republic of Indonesia No. 26/Permen-KP/2014 around Patimban waters out of DLKP (Regional Sphere of Interest) and DLKR (Area Work) Patimban seaport; b. Making Grievance Redress Center/Fast Response team to accommodate and respond to public unrest related to the Patimban Seaport development project; c. Organizing community discussion forums with local governments to solve problems that arise during the development activity. **[DGST, CP1, CP2]**	using questionnaire (primary data); c. Identification of the number of people protesting and demonstrating against the project implementing representative office shall gain from such cases reported to the local government or the project implementing representative office (secondary data); d. Regarding the information and data that need to be explored deeper, shall conduct an in-depth interview with key informants, such as with local elderly representatives; e. The sampling population is calculated purposively. **[DGST, CP1, CP2, CP3, CP4**	Interview with the people around the project site in December 2019. The sample number is determined by purposive sampling for people affected. The respondents are select from various backgrounds such as local leaders, people affected, and fishers. Public unrest percentage about reclamation and offshore facility development is seen in the chart below.  To minimize the public unrest due to reclamation activity and offshore facility development, the Contractor socialized to communities, up to date technology that is used such as Cement Pipe Mixing technology and the duration of the activity.
5	**Dredging and dumping**					
5A	Deterioration of seawater quality (TSS).	TSS concentration belows environment quality standard based on Kepmen LH (Ministerial Decree of Environmental) No 51 year 2004 Seawater quality standard Appendix I (80 mg/L).	Dredging and dumping.	a. Constructing seawall in the early phase; b. Installing silt protector around the dredging area by grab dredging; c. Disposing dumping materials, not at one spot but dispersing them in dumping area; d. Using proper equipment for dredging and dumping. **[CP1, CP2]**	Conducting TSS measurement, after which the results are compared with the seawater quality standard based on Kepmen LH (Ministerial Decree of Environmental) no. 51 year 2004. Furthermore, monitoring results shall be converted into average values and compared from time to time (data trend) to see the tendency of environment quality change and control status with the critical level. **[CP1]**	CP1 Implementation: In general, TSS concentrations during this Quarterly period (October to December 2019) were relatively consistent with previous periods. **October 2019** : TSS concentrations across the study area ranged from 0.73 mg/L to 65.71 mg/L across all sites; the average TSS over the period was 11.3 mg/L with standard deviation (SD) of 9.35 mg/L. Turbidity ranged from 1.09 to 53.3 NTU across all sites; the average turbidity level over the period was 10.08 NTU with SD of 8.92 NTU. TSS and turbidity in surface and bottom layers were similar. TSS and turbidity were generally higher at the impact sites than at the reference site (W12), particularly at the shallower sites closer to shore (e.g., sites W1, W2, W4, and W11), which are naturally influenced by a turbid plume that extends from the shoreline and also expected to be

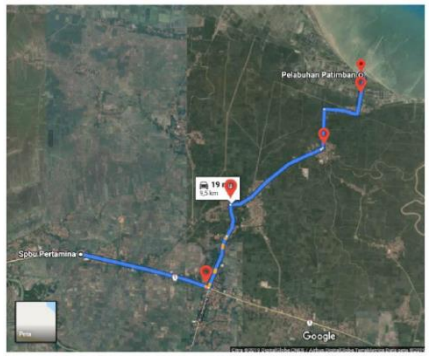
						influenced caused by natural and/or non-dredging sources. **November 2019** : TSS concentrations measurements at impact sites were slightly higher than reference site value during this period. There were nine days in which TSS at the impact monitoring sites was greater than 10 mg/l above the reference sites result value, particularly at the shallower monitoring sites located closer to shoreline (e.g. sites of W1, W2, W4, and W11). And there were four days when the shallower sites closer to shoreline were occasionally greater than 20 mg/l above the reference site value. TSS concentration during this period were still relatively consistant with the previous periods. TSS concentrations across the study area ranged from 1.12 mg/l to 73.11 mg/l across all sites. The TSS value result in this period can be seen at table 4. **December 2019** : In general, TSS concentrations during this period were relatively consistent with previous periods. TSS concentrations across the study area ranged from 0.96 mg/L to 28.23 mg/L across all sites; the average TSS over the period was 6.19 mg/L with standard deviation (SD) of 3.9012 mg/l. Turbidity ranged from 0.78 to 22.9 NTU across all sites; the average turbidity level over the period was 5.0175 NTU with SD of 3.1642 NTU. TSS and turbidity in surface and bottom layers were similar. TSS and turbidity were generally higher at the impact sites than at the reference site (W12), particularly at the shallower sites closer to shore (e.g., sites W2 and W11), which were naturally influenced by a turbid plume that extends from the shoreline and also expected to be influenced caused by natural and/or non-dredging sources. The TSS value result in this period can be seen at table 5

						Sampling data results are attached here (Table 2 to 7).   Sampling Activity   Installing the silt protector (Rock Bund) by Geotextile to protect & controlling the silt dispersion due to the CPM Activity.  Disposing dumping materials, were not conducted at one spot but dispersing them in dumping area.
6.	**On-shore facility development**					
6A	Increasing water run-off rate.	No flooding.	On-shore facility development.	a. Making drainage that can drain water run-off; b. Optimizing of RTH (Green Open Space) on the unused land; c. Coordinating with Directorate General of Highways (Direktorat Jenderal Bina Marga) and Irrigation Agency,	Direct monitoring on the state and function of drainage channel and RTH (Green Opened Space). **[DGST]**	DGST Implementation: The activity has not yet started.

				related to drainage construction in the seaport location. **[DGST]**		
6B	Public unrest	No public unrest occurrence	On-shore facility development	a. Develop a new irrigation channel to replace disconnected irrigation channels affected by On-shore facility development; b. Develop underpass/fly over or moving the road on the public access road which is cross with Patimban seaport access road; c. Develop complaint center/fast response team to accommodate and response public unrest to the Patimban Seaport development; d. Develop a community discussion forum with local governments to solve the problem that arose when development activity. **[DGST]**	a. Monitoring of new irrigation channel as replacement of disconnected irrigation channel; b. Monitoring underpass/flyover on the public access road which is cross with Patimban seaport access road c. Measure of the number of anxiety due to On-shore facility development activity; d. Measurement conducted by interview with questionnaire toolkit (primary data); e. Measure the amount of people protest and demonstration to the initiator representative office taken from local government or office representative (secondary data); f. Regarding the information and data that need to be explored deeper, shall conduct an in-depth interview with key informants, such as with local elderly representatives; g. The sampling population is calculated purposively. **[DGST]**	The activity has not yet started.
Managed other environmental impact						
CONSTRUCTION PHASE						
2.	**Procurement of Labor and Basecamp operation**					
2A	Deterioration of seawater quality.	The worker's domestic waste	Procurement of labor and	Installation of portable toilet and wastewater processing facility such as septic tank and its	Confirmation and maintenance of sanitary facility, wastewater management facility.	Contractors implemented the wastewater management and sanitary system at the job site and workers'

		does not pollute seawater	Basecamp operation	maintenance **[CP1, CP2, CP3, CP4]**	**[CP1, CP2, CP3, CP4]**	accommodation. Maintenances were scheduled periodically (housekeeping). All non-hazardous waste which came from marine activity areas were stored at the jetty or causeway before they were disposed by the licensed waste transporter (3rd Party). Designated bins near the project site and site office area collected by the waste transporter (3rd Party). PTRPW has collaborated with BANK SAMPAH (local provider form Patimban Village) for Industrial waste management.  Toilet (Urinoir)  Toilet portable with treatment (Septic-tank)  Septic tank

						  Type of Waste separation bin and maintenance by housekeeping   WWTP was being monitored and maintenance periodically
2B	Appearance of infectious diseases.	The number of patients and infectious diseases is not increasing related to workers in the construction phase.	Procurement of labor and Basecamp operation	a. Coordinating with related institution and NGO due to HIV/AIDS prevention program, including socialization about sexual infectious diseases prevention; b. Coordinating with related institutions due to the treatment for sexual infectious disease patients, gonorrhea, and syphilis by injection and oral method in the Pusakanegara public health center (Puskesmas). Routine examination (every 3 months) by VCT (Voluntary Counseling and Testing) method; c. Cooperating with Warga Peduli AIDS (WPA) – HIV/AIDS Community	a. Collecting report about implementation of HIV / AIDS prevention program; b. Collecting maintenance report of sanitary facility, wastewater management facility, and garbage dump; c. Identifying the number of patients comparing with data before construction. **[CP1, CP2, CP3, CP4]**	• To encourage the awareness of infectious diseases, the contractors took all due to precautions to ensure health and safety for all workers. To implement the program awareness, the contractor involved local health authorities (Dinas Kesehatan Kabupaten Subang), and professional medical services (PT. Asih Eka Abadi – Intrernational SOS. The awareness program conducted by information, education, and communication campaign by poster and HIV AIDS seminar on 12 October, meanwhile in 23th October 2019 a partnership meeting was held in the context of HIV prevention and mitigation. These programs aimed to equalize perceptions about the prevention of work. Also, established the memorandum of understanding between AIDS Concern Commission Subang regency (Komisi Peduli AIDS – KPA) with Harbormaster and Port Authority Office (KSOP) regarding HIV prevention and program control. In December 2019 Small group discussion was conducted in collaborated with PT Asih Eka Abadi (International SOS) on December 25, at Tug Boat KSD-10 (fracturing barge).

				Concern at the village level to conduct ODHA positive activity (People with HIV / AIDS), such as gathering activity. d. Developing sanitary facility, temporary garbage collection place (TPS), and processing facility **[CP1, CP2, CP3, CP4]**		  HIV AIDS awareness program socialization
3.	**Heavy equipment and materials mobilization**					
3A	Road damage	Minimized road damage	Equipment and materials mobilization	a. Choosing the as minimum as possible for transporting equipment and material that exceeds road capacity; b. Material transportation for construction shall be based on road class and driving license; c. Heavy equipment shall meet the requirement of directorate general of land transportation regarding Technical guidelines for the massive vehicle operation on the road (Ministry of Transportation Regulation Number PM 32 Years 2016; d. Rehabilitation of road if there is damage caused by project activity; e. Vehicle using tarpaulin f. Coordinating with Directorate General of Highways (Direktorat Jenderal Bina Marga) and Irrigation Agency of Subang Regency in managing (repairing) if there is Road damage. **[CP1, CP2, CP3, CP4]**	Monitoring directly of road condition Analysis based on consultant survey **[CP1, CP2, CP3, CP4]**	Package 1: The contractor uses the public road for access to the site is restricted to light construction equipment and transporting during nighttime with limited speed. The road condition showed that no damage caused by the Patimban Port activity (No road damage reported from October to December 2019).  Road damage inspection route

						 The Road was fixed by contractor in November 2019 Package 2: The contractor uses the public road for access to the site is restricted to light construction equipment and transporting during nighttime with limited speed. The road condition showed that no damage caused by the Patimban Port activity (No road damage reported from October to December 2019).  Road condition around the port development area Meanwhile, the Sea route was used for the distribution/transportation of material and heavy equipment to avoid road damage. Package 3: The activity has not yet started. Package 4: Road repairs had been implemented.
3B	Increasing noise.	Noise intensity, according to Ministerial decree	Equipment and materials mobilization.	a. Heavy equipment and materials mobilization using Patimban seaport construction	Conducting noise laboratory analysis, the results shall be compared with the noise	CP 1 Implementation:

		of environment ministry No. Kep. 48/MENLH/II/1996 .		access road which is relatively quiet and away from settlements; b. Heavy equipment and materials mobilization are not conducted in convoy; c. Vehicle speed setting; d. Using proper vehicle. **[CP1, CP2, CP3, CP4]**	standard refer to Ministerial Decree of Environmental (Kepmen LH) No. 48 year 1996. Furthermore, monitoring results shall be converted into average values and compared from time to time (data trend) to see the tendency of environment quality change and critical level. **[CP4]**	The traffic condition affected by the project was monitored periodically. A vehicle volume survey was conducted once a month. CP 2. Implementation: The activity has not yet started CP 3. Implementation: The activity has not yet started CP 4. Implementation: 1. Trucks and tools are maintained periodically; 2. Noise measurements had been conducted on October 2019. The data result is shown in attachment (table 12) Noise measurements results in STA 0 is 70,5 dBA and STA 7+000 is 70,4 dBA. The sampling point result was above the standard. This station is located along the National road of Pantura, so this may not derive from the construction activities. Noise measurements results in STA 7+000 is 70,4 dBA. The sampling point result was above the standard, this station is located near of Fish Auction Market activities. The increasing noise level value in this point due to temporary mobilization heavy equipments and pile slab construction. The nearest distance project activities with the residences/settlement is about 500 meters from the point sampling.   STA 0 STA 7+000 The situation around of noise sampling point
4	**Reclamation and Marine Facility Construction (Supplementary Note on Approved AMDAL/EIA)**					
4A	Disturbance of fishing ground.	No disturbances on marine biota (nekton and benthos)	Reclamation and Marine Facility Construction.	N/A	a. Monitoring regarding the complaint received and analyze based on consultant survey;	CP1 Implementation: In reference to the baseline survey results, a total of 182 individual fish, crustaceans, and Mollusca comprising

					b.Monitoring the fishery condition and productivity by interview the fishermen. **[CP1]**	16 taxa were recorded during the baseline survey: *Amusium Pleuronectes, Arothron sp., Engraulidae sp., Eleutheronema tetradactylum, Gerres filamentosus, Harpiosquilla raphidea, Johnius sp., Leiognathus equulus, Moolgarda sp., Nemipterus japonicas, Penaeus merguiensis, Saurida tumbil, Selaroides leptolepis, Siganus sp., Solea solea*, and *Terapon puta*. The most abundant fish species found within the area are *Leiognathus equulus* (125 individuals) and *Engraulidae* sp. (18 individuals), while the most abundant crustacean species are Harpiosquilla *raphidea* (seven individuals) and *Penaeus merguiensis* (six individuals). Species richness ranged from three species at site N1 (west study area) and N3 (east study area) to 10 species at site N4 (north study area, near the spoil ground).
5.	**Dredging and Disposal (Supplementary Note on Approved AMDAL)**					
5A	Disturbance of Marine Life (Nekton and Benthos)	Sediment quality is not deteriorate	Dumping activity	N/A	a. Monitoring of dredging material sediment quality before dumping b. Bathymetry survey in dumping location c.**[CP1]**	CP1 Implementation: Sediment samples were collected from the boat at each of the six sites (S7-S12) using an Ekman grab. Benthic infauna samples were collected from a boat at nine of the sediment quality sites (S4-S12). Benthos samples were collected using the same methods as for the sediment samples, i.e., using an Ekman grab. The nekton surveys were conducted using local fishing gear at six sites (NI-N6). Local fishers were employed to carry out the fishing activities, supervised by contractor. Fish were taken for samples using gill nets, which captured the fish by ensnaring or tangling the fish into the nets. Sediments from the study area were comprised of grey greenish brown sludge with a natural odor. Sites were comprised predominantly of clay-sized particles (2-50 u; 43.17-71.32%) with the remainder being dust (0-2 p; 28.3-42.17%) and fine sand (50-100 u; 0.13-10.97%). Ash content was very high at all sites, ranging from 89.09 to 93.94%, while total organic carbon (TOC) was very low (<2%). Moisture content ranged from 37.2% to 65.9% (see table 6) Concentrations of total arsenic, chromium, copper, mercury, nickel, and zinc were low throughout the study area, and were below the Australian dredging guideline concentrations and Canadian Sediment Quality Guidelines for the Protection of Aquatic Life.

						Concentrations were below the laboratory detection limits for mercury at all sites, for arsenic and copper at all sites. Concentration of cadmium and lead were partially above reference standard level, however, all below the Canadian Sediment Quality Guideline for Protection of Aquatic Life (coded as PEL), which is regarded as most applicable standard based on AMDAL study, as follows: • Cadmium: above the ISQG (0.7 mg/kg) at all sites, but all below PEL standard level at all sites ; and • Lead: above the ISQG (30.2 mg/kg) and NADG (50 mg/kg) at all sites, but below the PEL (112 mg/kg). Though for Cadmium and Lead, some of the monitoring station concentration levels detected, were higher than ISOG and NADG standard levels (though both are reference standards), concentration of all parameters at all sites were all below the PEL standard level (regarded as most applicable standard for this project based on AMDAL). We also recognize that as for both Cadmium and Lead such concentration levels exceeding ISOG and NADG standards were detected at baseline study (August & September 2018). Therefore, we estimate that detected levels of these parameters also in September 2019 were based on natural phenomenon, rather than from impact by the dredging and dumping activities; and thus assume that we do not require to implement any mitigation measures at this point. We will keep on watch to the concentrations levels nonetheless, to see if any drastic change of concentration level may appear at which point, consideration on such measures may become necessary. Sediments measurement result can be seen at table 6, and the comparison with baseline as shown at table 7 in these attachments. Benthos sampling & nekton survey results can be seen at these attachments.
6.	**On-shore facility development**					
6A	Deterioration of air quality (TSP and emission)	Concentration of SO_2, CO, NO_2, and TSP doesn't exceed air quality standard based on	On-shore facility development	a. Maintenance of trucks and equipment to keep them. In good condition; b. Using loading sheets whenever transporting	Conducting air quality laboratory analysis, after which the results shall be compared with the air standard quality based on PP No. 41 year of	DGST Implementation: No Data Record CP 3. Implementation: The activity has not yet started

		Government regulation No. 41 year of 1999 on Air pollutions control		construction materials (if necessary); c. Providing guardrail from iron sheeting with a minimum height of 2.5 meters (if necessary). **[DGST, CP3, CP4]**	1999. Furthermore, monitoring results shall be converted into average values and compared from time to time (data trend) to see the tendency of environment quality change and control status with a critical level. **[CP4]**	CP 4. Implementation: 1.Air quality measurement was conducted in October 2019. The monitoring results of air quality with 5 parameters (SO_2, CO, NO_2, PM_{10}, TSP) were below the threshold, as shown in attachment Table 11. 2.Roads were sprinkled regularly to reduce dust pollution. Dust pollution was tended to be under control and within limits.  Road sprinkled by water spray  Road cleaning due to materials spill 3. Building washing places for vehicle wheel Cleaning. Every construction vehicle operating at public roads undergo a vehicle wheel wash first. Washing places for vehicle wheel cleaning. Every construction vehicle operating at public roads undergo  vehicle wheel wash first at washing pond.

						4.Vehicle feasibility check  5.Material transport trucks are required to provide loading sheets. 
6B	Increasing noise.	Noise level is below environment quality standard based on Ministerial Decree of Environmental (Kepmen LH) No 48 Year 1996 about Noise level standard.	On-shore facility development.	a. Implementing regularly maintenance of trucks and equipments to keep them in good conditions to be operated; b. Avoiding construction activity that causes noise at night, such as mounting pile. **[DGST, CP3, CP4]**	Conducting noise parameter laboratory analysis, the results shall be compared with the standard noise quality based on Ministerial Decree of Environmental (Kepmen LH) No. 48 year 1996. Furthermore, monitoring results shall be converted into average values and compared from time to time (data trend) to see the tendency of environment quality change and critical level. **[CP4]**	CP 4 Implementation: 1. Regular maintenance of trucks and equipment to keep them in good condition. 2. There were no construction activities that cause noise at night. 3. Noise measurements had been conducted on October 2019. Conducting noise testing at 3 points during the construction process every 6 months. According to laboratory data result attached herewith (as shown in Table 12).
6C	Deterioration of seawater quality	Seawater quality is not deteriorated drastically because of project activity.	On-shore facility construction	Reducing or regulating wastewater discharge volume produced by former fishpond location during landfill process. **[DGST, CP3, CP4]**	Conducting sampling of seawater, after which the results are compared with Ministerial Decree of Environmental (Kepmen LH) No. 51 year of 2004. Furthermore, monitoring results shall be converted into average values and compared from time to time (data trend) to see the tendency of	CP1 Implementation: Seawater sampling & measurements are conducted during the construction phase as refer to the Tech. Spec and EIA doc for the locations of sampling point and time periods. The measurement results can be shown at table 1 to table 7 in this attachments.

					environment quality change and control status with a critical level. **[CP1]**	  CP1 implemented the waste management and sanitary system at the Jobsite and workers' accommodation. Wastewater (Domestic source) Management :  The wastewater was produced from the Project activities, particularly from the domestic activities of the workers from the toilet, was flowed to septic tanks biotech. The wastewater that entered the bio septic tank enter in the first part, then was filtered and flowed to the second part, in the second part the waste was decomposed by bacteria and flowed to the third box to be further decomposed. The rest of the decomposition from the third part would flow out to the drainage after going through a disinfectant tube that disinfected the waste safely for the environment. Hazard-waste (Industrial source) Management :   **Used oil waste** To prevent the hazard contamination to the sea, the contractor has managed and transferred hazardous waste (used oil) from vessel to temporary shelter of hazard waste, and then they will be transported by the

						transporter (refer to the Environment Permit from Ministry of Environment and forestry) dated July 25, 2019. The volume is 27 drums x 200 liters = 5.400 liters wastewater volumes.   Medical waste was managed by third party PT. Tenang Jaya (3rd party licensed waste transporter) to dispose Non Hazard-waste (Industrial source) Management :   Industrial non-hazardous waste regular was stored at jetty or causeway before it disposed by the licensed waste transporter (3rd Party). PTRPW has collaborated with BANK SAMPAH (local provider form Patimban Village) for Domestic and Industrial waste management disposal coming from marine and office activity, meanwhile for accommodation area collaborated with Environmental Agency of Indramayu.

6D	Disruption of terrestrial fauna (bird)	Presence of habitats for terrestrial fauna	On-shore facility development	a. Providing new habitat (such as plant mangrove) for terrestrial fauna and maintain that habitat; b. Workers are not allowed to disturb terrestrial fauna around activity locations. **[a; DGST, b; CP1, CP2, CP3, CP4]**	a. Reporting of the newly created habitat; b. Direct monitoring in the fields. **[DGST]**	The activity has not yet started
6E	Disruption of terrestrial flora	Presence of habitats for terrestrial flora	On-shore facility development	a. Providing new habitat (such as planting mangroves) for terrestrial flora and maintain that habitat b. Workers are not allowed to disturb terrestrial flora around the activity locations. **[a; DGST, b; CP1, CP2, CP3, CP4]**	Reporting of the newly created habitat. **[DGST]**	The activity has not yet started
7.	**Access road development**					
7A	Deterioration of air quality (TSP and emission)	Concentration of SO_2, CO, NO_2, and TSP doesn't exceed air quality standard based on Government regulations No. 41 years 1999 on Air pollutions control	Access road development activity	a. Implementing regularly maintenance of trucks and equipments to keep them in a good conditions to be operated. b. Using loading sheets on truck that bring construction materials (if necessary); c. Developing guardrail made of iron sheeting with a minimum height of 2.5 meters (if necessary). **[CP3, CP4]**	Conducting air quality laboratory analysis, in which the results shall be compared with the air standard quality based on Government Regulation No. 41 years 1999. Furthermore, monitoring results are converted into average values and compared from time to time (data trend) to see the tendency of environment quality change and controlled status with a critical level. **[CP4]**	CP 3. Implementation: The activity has not yet started CP 4. Implementation: 1. Air Quality measurements had been conducted in October 2019. The laboratory data results are attached here, as shown in table 11.  

						2. Roads were sprinkled regularly to reduce dust pollution. Dust pollution was tended to be under control within limits & speed control signed. The preventive action for dust polluted by Speed control sign for project vehicles on project access road  3. Used tarps to cover truck that bring construction materials & used the access road for transportation  4. Project access road & Vehicle feasibility check 
7B	Increasing of noise	To maintain noise level below environment quality standard based on Ministerial Decree of Environment	Access road development activity	a. Maintenance of trucks and equipment to keep them in good condition; b. Avoiding construction activity that cause noise at night. **[CP3, CP4]**	Conducting noise parameter laboratory analysis, the results shall be compared with the standard noise quality based on Ministerial Decree of Environment (Kepmen LH)	CP 3. Implementation: The activity has not yet started CP 4. Implementation:

		(Kepmen LH) No 48 year of 1996 about Noise level standard			No. 48 year 1996. Furthermore, monitoring results shall be converted into average values and compared from time to time (data trend) to see the tendency of environment quality change and critical level. **[CP4]**	1. Trucks and equipment were maintained periodically. 2. Noise measurements had been conducted in October 2019. The data results are attached herewith (Table 12) 3. The next measurement will be conducted in April 2020.  Noise Measurement
7C	Deterioration of surface water quality	To Maintain surface water quality below environment quality standard based on Government Regulation No. 82 year 2001 on Water quality management and Water pollution control	Access road development	Prevention to reduce the turbidity of water bodies such as by installation of drainage channel or emergency retention pond during the construction process **[CP3, CP4]**	Monitoring TSS concentration, using turbidity meter **[CP4]**	CP 3. Implementation: The activity has not yet started CP 4. Implementation: Surface Water sampling & results 

	No	Week	Date	Parameter	Results of STA 0	STA 2700	STA 7000	Standard
Baseline	1	1	22/10/2018	TSS	12,2	11,6	385,8	400
	1	45	02/09/2019	TSS	16,4	19,9	72,7	400
	2	46	09/09/2019	TSS	61,2	34,4	80,1	400
	3	47	16/09/2019	TSS	229,6	35	172,8	400
	4	48	23/09/2019	TSS	15,9	36,5	76,7	400
	5	49	30/09/2019	TSS	64,7	33,7	100,4	400

	No	Week	Date	Parameter	Results of STA 0	STA 2700	STA 7000	Standard
Baseline	1	1	22/10/2018	TSS	12,2	11,6	385,8	400
	1	50	07/10/2019	TSS	67,6	45,8	110,5	400
	2	51	14/10/2019	TSS	302,6	28,4	120,8	400
	3	52	21/10/2019	TSS	91,6	39,2	156,4	400
	4	53	28/10/2019	TSS	Not Yet Result			400

	No	Week	Date	Parameter	Results of STA 0	STA 2700	STA 7000	Standard
Baseline	1	1	22/10/2018	TSS	12,2	11,6	385,8	400
	1	54	04/11/2019	TSS	157,5	178	94,1	400
	2	55	11/11/2019	TSS	85	16,1	45,4	400
	3	56	18/11/2019	TSS	90,7	21,2	73,3	400
	4	57	25/11/2019	TSS	81,7	374	62,2	400

	No	Week	Date	Parameter	Results of STA 0	STA 2700	STA 7000	Standard
Baseline	1	1	22/10/2018	TSS	12,2	11,6	385,8	400
	1	58	02/12/2019	TSS	91,5	38,3	102,5	400
	2	59	09/12/2019	TSS	67,8	15,2	153,3	400
	3	60	16/12/2019	TSS	110,5	28	34	400
	4	61	23/12/2019	TSS	29,9	77,4	85	400
	5	62	30/12/2019	TSS	The result haven't come out yet			400

Note :

- According to Government Regulation No. 82 of 2001 concerning water quality management and water pollution control, the threshold concentration of the TSS is 400 mg / L for class IV water criteria, where designated water can be used to irrigate plantations and / or other designated ones that require water quality equal to use.
- From the measurement result table, it is known that from 3 measurement points of surface water quality, namely STA 0 + 000; STA 2 + 700 and STA 7 + 000, there was one measurement point that exceeded the threshold at STA 0 + 000 in the second week of measurement. The TSS concentration exceeded the required threshold of 421,9 mg / L. The condition caused by the bridge renovation activities at STA 0 + 000. The increase in the value of the

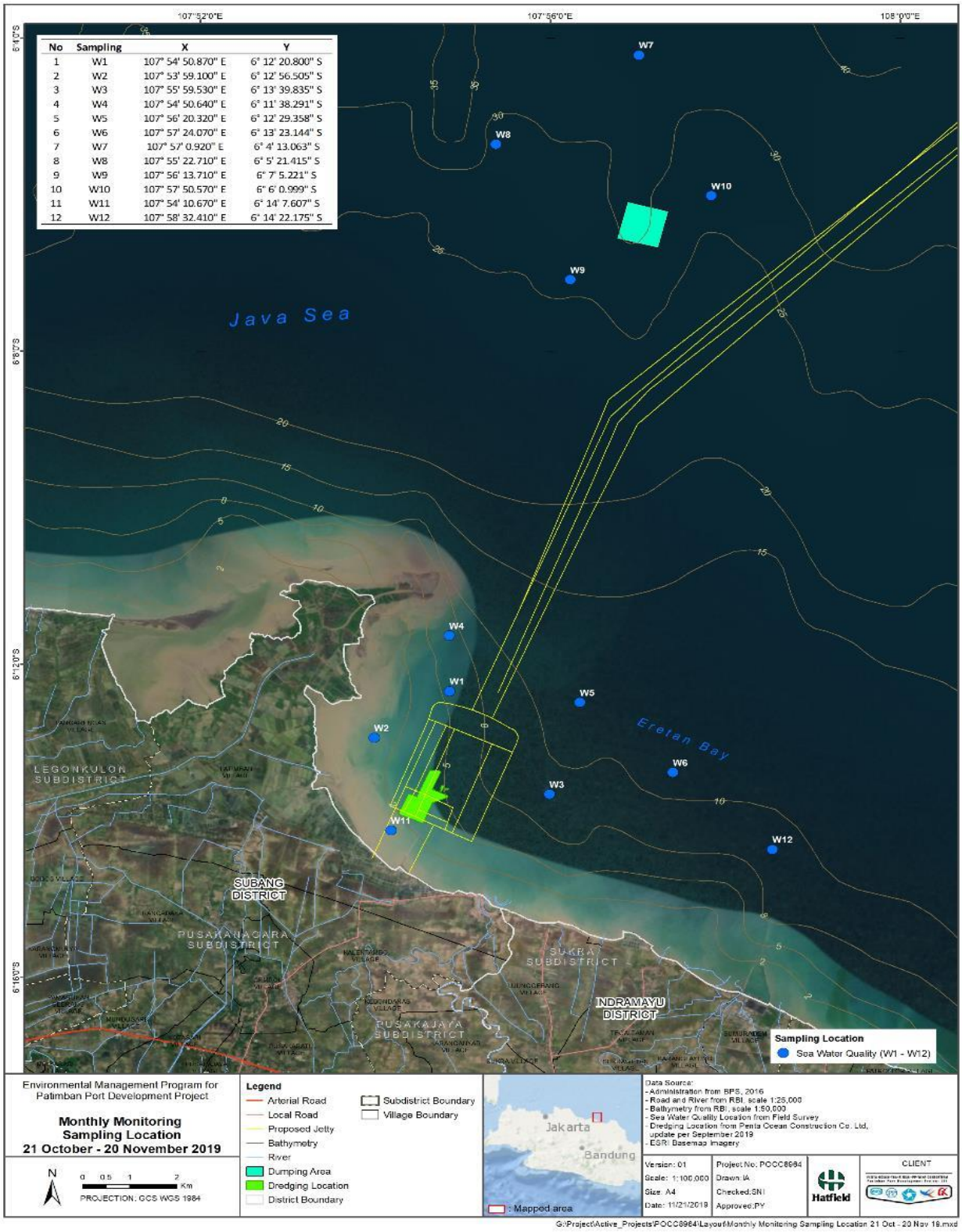
						TSS was only valid while the following week has returned down
7D	Increasing of water run-off rate	Excessive run-off does not occur	Access road development	Installation of drainage channel or emergency retention pond during construction process **[CP3, CP4]**	Direct monitoring in the fields **[CP4]**	CP 3. Implementation: The activity has not yet started CP 4. Implementation: 1. Created drainage channels during the construction process  2. Created an emergency retention pond during the construction process  Sedimentation treatment pond
7E	Public unrest	No public unrest occurrence	Access road development	1. Installing a bridge or other facilities to be able to cross to the access road; 2. Installing fences along access road to secure safety and to prevent accidents of people or livestock; 3. Establishment of Grievance Redress Center /Fast Response Team to accommodate and respond to public unrest related to the Patimban Seaport Development Project; **[CP3, CP4]**	a. Identification of the number of grievances raised due to access road operation activity; b. Identification by interview process using questionnaire (primary data) c. Identification of number protesting and demonstrating people against the project implementing representative office shall be achieved from related reports to local governments or to project implementing representative office (secondary data). d. Regarding the information and data that need to be explored deeper, shall conduct an in-depth interview	Handling complaints and problems due to access road development is still in progress. Until December 2019, the contractor already repair 58 houses impacted by access road development located at Pusakaratu Village, Kotasari Village, and Gempol Village, of total 264 houses.

					with key informants, such as with local elderly representatives; e. Sample amount determined by purposive, based on research purposes and taken by characteristics known community. **[DGST, CP4]**	 House repair activity by contractor  House repair activity by contractor

Note: DGST ; Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia
CP1; Contractor of Package-1
CP2; Contractor of Package-2
CP3; Contractor of Package-3
CP4; Contractor of Package-4

3. Details on Natural Environment

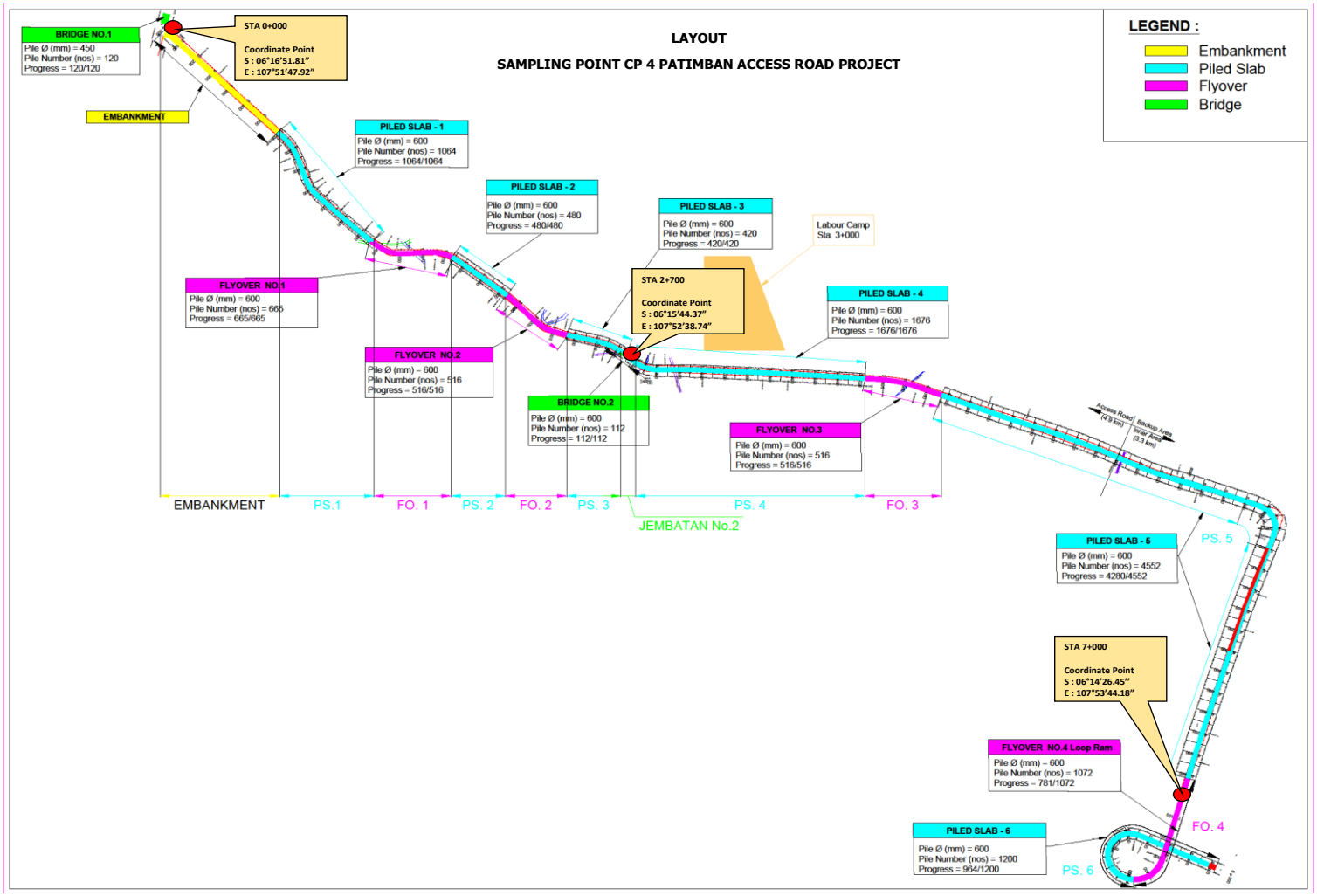
Figure 1. Water Quality Sampling Location



No	Sampling	X	Y
1	W1	107° 54' 50.870" E	6° 12' 20.800" S
2	W2	107° 53' 59.100" E	6° 12' 56.505" S
3	W3	107° 55' 59.530" E	6° 13' 39.835" S
4	W4	107° 54' 50.640" E	6° 11' 38.291" S
5	W5	107° 56' 20.320" E	6° 12' 29.358" S
6	W6	107° 57' 24.070" E	6° 13' 23.144" S
7	W7	107° 57' 0.920" E	6° 4' 13.063" S
8	W8	107° 55' 22.710" E	6° 5' 21.415" S
9	W9	107° 56' 13.710" E	6° 7' 5.221" S
10	W10	107° 57' 50.570" E	6° 6' 0.999" S
11	W11	107° 54' 10.670" E	6° 14' 7.607" S
12	W12	107° 58' 32.410" E	6° 14' 22.175" S

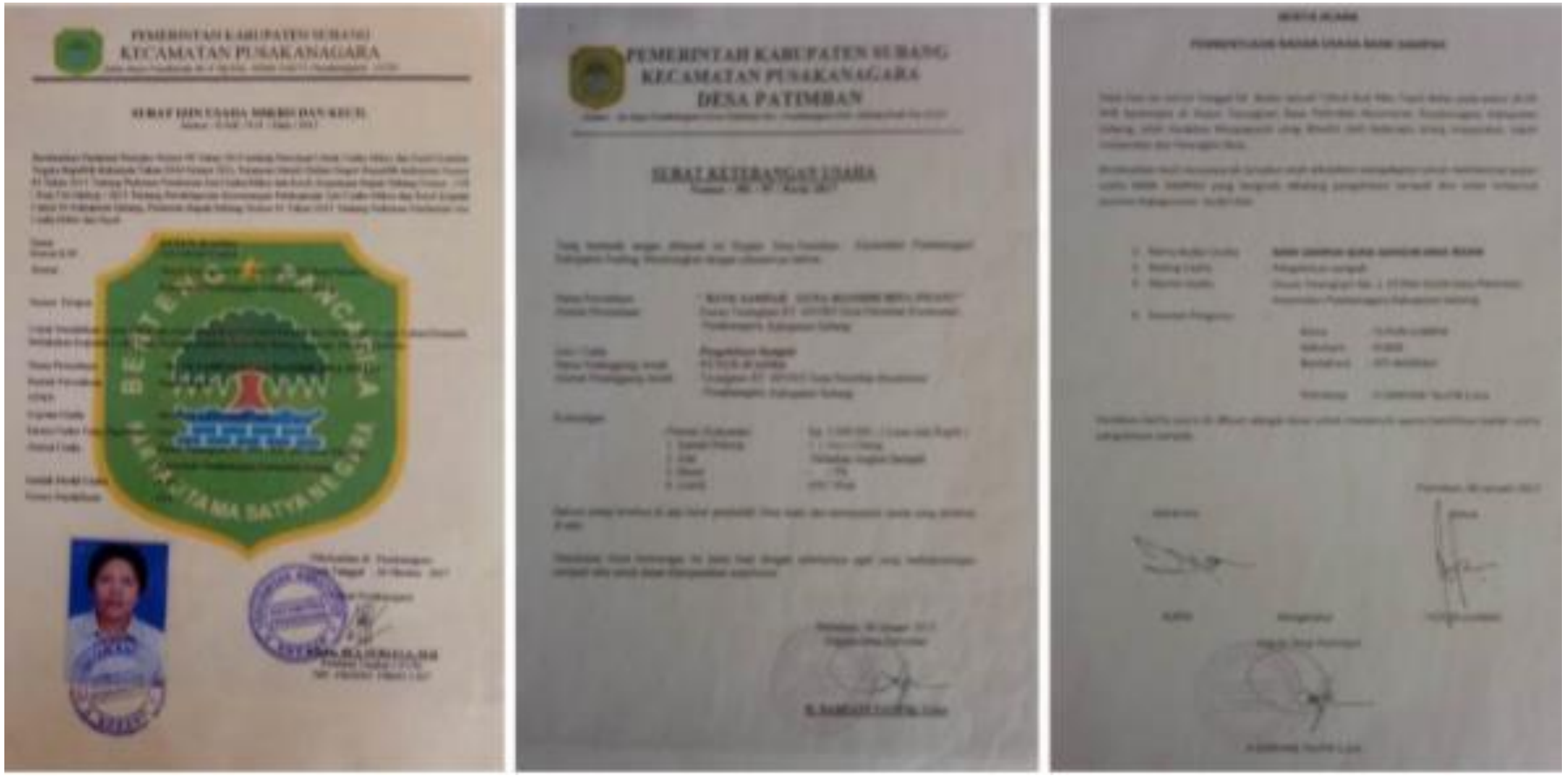
Source : Contractor Environmental Monitoring Report, 2019

Figure 2. Air Quality and Noise Sampling Location



Source : Contractor Environmental Monitoring Report, 2019

Figure 3. Industrial Waste Management (Non-Hazardous Solid-waste)



Source : Contractor Environmental Monitoring Report, October 2019
Note : Contractor has collaborated with BANK SAMPAH (Local Provider from Patimban Village) for industrial waste management (Non-Hazardous waste)

Figure 4. Industrial Waste Management (Hazardous Liquid-waste)

Source : Contractor Environmental Monitoring Report, October 2019
Note : Contractor hs tranfered hazardous waste (liquid/used oil) from vessel to shelter temporary hazardous waste storage.Then move out by transporter (license from Ministry of Forestry and Environment).

Table 1 Quarterly Monitoring Laboratory Results for Sea Water Quality (September 2019)

Parameter	Layer	Unit	Indo. Std[1]	Japan Std[2]	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
Physical Parameters																
Odour	Surface	-	-	-	Odourless	Odourless	Odourless	Odourless	Odourless	Odourless	Odourless	Odourless	Odourless	Odourless	Odourless	Odourless
Temperature	Surface	°C	-	-	28	29	27	28	28	27	27	26	26	27	29	28
	Bottom	°C	-	-	27	29	27	28	27	27	26	26	27	26	29	28
Salinity	Surface	PSU	-	-	33.5	33.6	33.8	33.8	33.8	33.9	33.8	33	33.4	33.5	33.9	33.6
	Bottom	PSU	-	-	34.0	33.6	33.6	33.9	33.6	33.7	33.7	32.4	33.3	33.1	34	34.2
Dissolved oxygen (DO)	Surface	mg/L	-	-	8.41	8.45	8.05	8.41	8.51	8.16	8.11	8.32	8.37	8.21	8.15	8.23
	Bottom	mg/L	-	-	8.44	8.36	8.22	8.12	8.19	8.43	8.31	8.31	8.23	8.19	8.21	8.04
pH	Surface	pH units	6.5-8.5	7.0-8.3	7.03	7.04	7.2	7.59	7.2	7.67	7.09	7.25	7.25	6.7	7.13	6.91
	Bottom	pH units	6.5-8.5	7.0-8.3	7.23	7.06	7.1	7.61	7.1	7.01	6.95	7.09	7.02	6.63	7.27	7.15
Total suspended solids (TSS)	Surface	mg/L	80	-	12.0	8	4	24.0	4.0	5.0	4.0	1.0	1.0	1.0	62.0	2.0
	Bottom	mg/L	80	-	13	8	4	21.0	4.0	7.0	1.0	2.0	1.0	1.0	57.0	4.0
Turbidity (in situ)[3]	Surface	NTU	-	-	14.1	52.0	9.02	24.0	6.9	6.1	0.8	2.3	1.5	1.9	39.4	4.9
	Bottom	NTU	-	-	17.8	35.5	9.74	24.9	8.0	12.3	1.9	2.2	3.1	2.8	40.6	6.1
Clarity / Transparency[3]	Surface	m	>3	-	0.75	0.75	0.8	0.25	1.3	1.8	4.8	4.3	5	6.0	0.15	1.5
Nutrients and Anions																
Ammonia (N-NH$_3$)	Surface	mg/L	0.3	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Total Phosphate (P-PO$_4$)	Surface	mg/L	-	-	0.006	0.006	0.005	0.008	0.005	0.006	<0.005	<0.005	<0.005	<0.005	0.005	0.005
Sulfide - Unionized	Surface	mg/L	0.03	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Dissolved Metals																
Cadmium (Cd)	Surface	mg/L	0.01	0.003	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Copper (Cu)	Surface	mg/L	0.05	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Lead (Pb)	Surface	mg/L	0.05	0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc (Zn)	Surface	mg/L	0.1	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Mercury (Hg)	Surface	mg/L	0.003	0.0005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Micro-biology																
Total Coliforms	Surface	MPN/100 ml	1,000	1,000	2	17	2	<2	<2	<2	2	4	2	<2	4	<2
Others																
Oil & Grease	Surface	mg/L	1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Phenol	Surface	mg/L	0.002	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Surfactant / Detergent (MBAS)	Surface	mg/L	1	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Total Hydrocarbons	Surface	mg/L	n/a	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Polychlorinated Biphenyl (PCB)	Surface	mg/L	0.00001	Not detected	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Tributyltin (TBT)	Surface	mg/L	0.00001	-	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001

Result exceeded Indonesian standard

Result exceeded Japanese standard

Result exceeded both Indonesian and Japanese standards

Note:

1. Indonesia Standard: Decree of Minister of Environment No 51/2004 on Sea Water Quality Standard (Appendix 1 - Sea Area, Port)
2. Japan Standard: Water Pollution Control Law (Human Health)
3. Data not presented for site W3 due to an equipment malfunction
4. Based on $y = 0.1216x + 0.2227$, where x is turbidity (NTU) and y is TSS concentration (mg/L)
5. There are no Indonesian or Japanese water quality standards for turbidity in ports

Source : Contractor Quarterly Environmental Monitoring Report, (Aug – Oct, 2019)

Table 2 Comparison value of sea water quality between the baseline with the Quarterly 1, 2, 3 & 4

Parameter	Unit	Baseline (Avg)	Q1 Observed value (Min-Max)	Q2 Observed value (Min-Max)	Q3 Observed value (Min-Max)	Q4 Observed value (Min-Max)	Q1 Observed value (Avg)	Q2 Observed value (Avg.)	Q3 Observed value (Avg.)	Q4 Observed value (Avg.)	Indo Standard (Harbour Water)	Japan Standard (ref)	C1 Number of station above standard	C2 Number of station above standard	C3 Number of station above standard	C4 Number of station above standard
Physical Parameters																
Odor		-	Odorless	Odorless	Odorless	Odorless	Odorless	Odorless	Odorless	Odorless	-	-	-	-	-	-
Temperature	°C	27.42	25-35	25	27 – 29.8	**26 - 29**	31.08	26	28.6	27.5	-	-	-	-	-	-
Salinity	PEU	32.76	26-36	25 – 31.3	31.7 – 32.6	**12.4 – 34.2**	29.19	4.2	32.3	33.7	-	-	-	-	-	-
Dissolved oxygen (DO)	mg/L	7.87	6.6-10.3	6.24 - 9.24	4.5 – 6.37	**8.04 – 8.51**	8.15	7.1	5.7	8.3	-	-	-	-	-	-
pH		8.41	8.2-8.3	8.184 - 8.599	7.30 – 8.03	**6.63 – 7.67**	8.38	8.5	7.36	7.16	6.5-8.5	7.0-8.3	W3, W4, W6, W8, W9, W9, W10 and W12	W1, W2, W3, W4, W5, W6, W7, W8, W10, W11 and T2	-	-
Total suspended solids (TSS)	mg/L	3.13	0.5-4	1.3-12.7	0.6 – 5.5	1 - 32	1.13	4.2	1.1	12.8	80	-	-	-	-	-
Turbidity (laboratory)[3]	NTU	22.51	-	1.0 - 16.2	0.7 - 24.2	**0.5 – 69.3**	-	6.2	5.7	11.83	-	-	-	-	-	-
Turbidity (in situ)[4]	NTU	7.36	2-30.6	1.7 - 19.9	1.9 - 25.1	**0.4 - 52**	7.37	7.3	6.9	13.7	-	-	-	-	-	-
Clarity / Transparency[4]	m	3.87	<0.5-8	0.4 - 9	0.4 - 3.5	**0.15 - 6**	5	2.6	1.9	2.3	>3	-	W1, W2, W4, W11	W1, W2, W3, W4, W5, W6, W8, W10, W11 and W12	W1, W2, W3, W4, W5, W6, W7, W8, W11, and W12	W1, W2, W3, W4, W5, W6, W11, and W12
Nutrients and Anions																
Ammonia (N-NH3)	mg/L	<0.02	<0.02	<0.02	<0.02	**<0.02**	<0.02	<0.02	<0.02	<0.02	0.3	-	-	-	-	-
Total Phosphate (P-PO4)	mg/L	<0.005	<0.005 - 0.008	<0.005	<0.005	**< 0.005 - 0.006**	0.0065	<0.005	<0.005	0.0055	-	-	-	-	-	-
Sulfide - Unionized	mg/L	<0.01	<0.01	<0.01	<0.01	**<0.01**	<0.01	<0.01	<0.01	<0.01	0.03	-	-	-	-	-
Dissolved Metals															-	-
Cadmium (Cd)	mg/L	<0.0001	<0.0001	<0.0001 - 0.0001	<0.0001	**<0.0001 - 0.0001**	<0.0001	<0.0001	<0.00001	0.0001	0.01	0.003	-	-	-	-
Copper (Cu)	mg/L	<0.005	<0.005	<0.005	≤ 0.0001	**<0.005**	<0.005	< 0.005	≤ 0.0001	**< 0.005**	0.05	-	-	-	-	-
Lead (Pb)	mg/L	<0.001	<0.001	< 0.001	< 0.001	**<0.001**	<0.001	< 0.001	< 0.001	< 0.001	0.05	0.01	-	-	-	-
Zinc (Zn)	mg/L	<0.005	<0.005	< 0.005	< 0.005	**< 0.005**	<0.005	< 0.005	< 0.006	**0.0005**	0.1	-	-	-	-	-
Mercury (Hg)	mg/L	<0.00005	<0.00005	< 0.00005	< 0.00005	**<0.00005**	<0.00005	< 0.00005	< 0.00005	<0.00005	0.003	0.0005	-	-	-	-
Microbiology															-	-
Total Coliforms	MPN/100 ml	7.09	<2-7	<2 - >1600	2 - 540	**<2 - 17**	<2	882.375	112.4	1.71	1,000	1,000	-	W1, W2, W3, W4, W5, W6 and W12	-	-
Others																
Oil and Grease	mg/l	1	<1	<1	<1	**<1**	<1	<1	<1	**<1**	5	-	-	-	-	-
Total Phenol	mg/L	<0.001	<0.001	<0.001	<0.001	**< 0.001**	<0.001	<0.001	<0.001	**<0.001**	0.002	-	-	-	-	-
Surfactant / Detergent (MBAS)	mg/L	<0.01	<0.01	<0.01	<0.01	**<0.01**	<0.01	<0.01	<0.01	**< 0.01**	1	-	-	-	-	-
Total Hydrocarbons	mg/L	1	<1	<1	<1	**<1**	<1	<1	<1	**<1**	1	-	-	-	-	-
Total Polychlorinated Biphenyl (PCB)	mg/l	<0.00001	<0.00001	< 0.00001	< 0.00001	**<0.00001**	<0.00001	<0.00001	<0.00001	**<0.00001**	0.00001	Not detected	-	-	-	-
Tributyltin (TBT)	mg/L	<0.00001	<0.00001	< 0.00001	< 0.00001	**<0.00001**	<0.00001	<0.00001	<0.00001	**<0.00001**	0.00001	-	-	-	-	-

[3] The result based on the laboratory analysis

[4] The result based on insitu sampling

Source : Contractor Quarterly Environmental Monitoring Report, (Aug – Oct, 2019)

Table 3 Daily Monitoring for TSS results at Bottom & Surface-layer (20 Sept -20 Oct, 2019)

Date		*TSS (mg/l)*											
		W12	*W1*	*W3*	*W5*	*W2*	*W4*	*W6*	*W7*	*W8*	*W9*	*W10*	*W11*
21-Sept-19	BL	9.95	21.95	14.55	14.92	-	-	-	-	-	-	-	-
	SL	8.12	19.11	10.86	10.44	-	-	-	-	-	-	-	-
22-Sept-19	BL	-	18.86	9.12	10.10	-	-	-	-	-	-	-	-
	SL	-	16.27	10.20	7.79	-	-	-	-	-	-	-	-
23-Sept-19	BL	9.51	44.14	14.30	8.62	-	-	-	-	-	-	-	-
	SL	6.20	34.03	10.92	10.71	-	-	-	-	-	-	-	-
24-Sept-19	BL	8.05	35.38	15.78	17.26	52.77	38.96	8.09	-	-	-	-	65.71
	SL	8.96	38.96	13.81	18.12	49.69	38.10	11.69	-	-	-	-	50.06
25-Sept-19	BL	13.32	40.81	21.33	17.01	-	-	-	-	-	-	-	-
	SL	16.40	30.33	22.44	17.63	-	-	-	-	-	-	-	-
26-Sept-19	BL	12.30	28.60	16.15	14.18	-	-	-	-	-	-	-	-
	SL	15.41	26.62	12.45	16.03	-	-	-	-	-	-	-	-
27-Sept-19	BL	14.30	33.53	21.82	14.30	-	-	-	-	-	-	-	-
	SL	11.48	25.77	19.23	20.22	-	-	-	-	-	-	-	-
28-Sept-19	BL	11.31	27.74	14.67	11.75	-	-	-	-	-	-	-	-
	SL	10.73	23.56	17.38	12.58	-	-	-	-	-	-	-	-
29-Sept-19	BL	9.17	20.10	14.18	13.69	-	-	-	-	-	-	-	-
	SL	11.07	22.69	17.14	13.44	-	-	-	-	-	-	-	-
30-Sept-19	BL	6.15	22.32	16.15	15.29	-	-	-	-	-	-	-	-
	SL	7.71	23.55	11.10	10.10	-	-	-	-	-	-	-	-
01-Oct-19	BL	10.68	9.99	10.07	8.37	18.63	12.45	-	-	-	-	-	-
	SL	6.44	10.45	8.04	6.44	18.74	13.32	11.39	4.45	5.61	5.73	4.41	29.59
02-Oct-19	BL	9.49	23.55	14.06	11.34				-	-	-	-	-
	SL	6.44	19.36	10.89	8.59	-	-	-	-	-	-	-	-
03-Oct-19	BL	9.33	22.32	11.32	9.05	-	-	-	-	-	-	-	-
	SL	7.22	21.21	8.26	7.13	-	-	-	-	-	-	-	-
04-Oct-19	BL	6.71	-	8.48	7.93	-	-	-	-	-	-	-	-
	SL	6.23	-	6.87	7.89	-	-	-	-	-	-	-	-
05-Oct-19	BL	7.47	20.96	7.89	7.89	-	-	-	-	-	-	-	-
	SL	5.98	17.63	6.49	8.78	-	-	-	-	-	-	-	-
06-Oct-19	BL	9.15	10.23	9.42	7.36	-	-	-	-	-	-	-	-
	SL	6.49	8.74	9.14	5.12	-	-	-	-	-	-	-	-
07-Oct-19	BL	6.45	25.77	18.25	10.48	-	-	-	-	-	-	-	-
	SL	6.30	28.11	12.14	9.78	-	-	-	-	-	-	-	-
08-Oct-19	BL	8.61	17.51	10.29	8.06	-	-	-	-	-	-	-	-
	SL	6.53	14.18	9.63	6.81	-	-	-	-	-	-	-	-
09-Oct-19	BL	7.84	8.41	6.50	5.07	18.49	8.17	6.10	2.81	2.81	4.07	5.76	32.43
	SL	4.17	7.19	5.73	4.78	17.75	6.29	4.01	1.92	2.18	3.25	3.53	31.4
10-Oct-19	BL	6.83	10.26	6.83	5.77	-	-	-	-	-	-	-	-
	SL	6.18	9.47	6.90	6.95	-	-	-	-	-	-	-	-
11-Oct-19	BL	7.42	6.30	6.08	6.23	-	-	-	-	-	-	-	-
	SL	7.02	7.03	6.97	5.91	-	-	-	-	-	-	-	-

Date		TSS (mg/l)											
		W12	*W1*	*W3*	*W5*	*W2*	*W4*	*W6*	*W7*	*W8*	*W9*	*W10*	*W11*
12-Oct-19	BL	6.88	11.98	8.51	6.50	-	-	-	-	-	-	-	-
	SL	4.82	9.51	6.76	4.24	-	-	-	-	-	-	-	-
13-Oct-19	BL	5.86	6.00	4.34	3.97	-	-	-	-	-	-	-	-
	SL	3.39	3.75	4.38	2.91	-	-	-	-	-	-	-	-
14-Oct-19	BL	6.04	7.89	5.30	4.22	-	-	-	-	-	-	-	-
	SL	3.83	6.76	5.42	3.44	-	-	-	-	-	-	-	-
15-Oct-19	BL	5.57	10.10	5.07	4.06	-	-	-	-	-	-	-	-
	SL	4.83	7.68	5.18	3.24	-	-	-	-	-	-	-	-
16-Oct-19	BL	3.64	5.02	3.61	4.41	27.62	8.31	4.82	2.00	2.55	2.88	1.34	44.63
	SL	4.11	3.42	3.16	3.39	26.26	7.99	3.12	3.25	1.27	1.86	0.73	48.08
17-Oct-19	BL	5.47	11.61	7.08	3.67	-	-	-	-	-	-	-	-
	SL	3.43	11.91	4.15	4.59	-	-	-	-	-	-	-	-
18-Oct-19	BL	3.85	17.01	6.55	8.29	-	-	-	-	-	-	-	-
	SL	3.92	14.92	5.59	6.51	-	-	-	-	-	-	-	-
19-Oct-19	BL	7.04	15.53	8.17	8.31	-	-	-	-	-	-	-	-
	SL	6.41	12.70	9.48	5.39	-	-	-	-	-	-	-	-
20-Oct-19	BL	4.85	16.40	6.42	5.29								
	SL	6.95	17.01	9.11	4.50								

Source : Contractor Environmental Monitoring Report, October 2019

Note :

- During this monitoring period (21 September – 20 October 2019), there were 14 days in which TSS surface layer measurements at the impacted sites was more than 10 mg/L above the reference site and 7 days higher of 20 mg/L than reference site values, particularly at the shallower sites closer to shore (e.g., sites W1, W2, W4, and W11).
- Given site W1, site W2, site W4, and W11 were near naturally turbid areas, and 1.92 km, 1.40 km, 3.02 km and 413 m from the construction activities (CDM & CPM Construction Activities). The high turbidity value in those sites were possibly influenced by naturally occurring turbid plumes that extend from the shoreline (particularly after rain events).
- W12 is a reference site, BL = Bottom Layer & SL = Surface Layer

>10 and <= 20 mg/L above reference site

> 20 above reference site and < 80 mg/L

>= 80 mg/L

Table 4 Daily Monitoring for TSS results at Bottom & Surface-layer (21 Oct - 20 Nov 2019)

Date		*TSS (mg/l)*											
		W12	*W1*	*W3*	*W5*	*W2*	*W4*	*W6*	*W7*	*W8*	*W9*	*W10*	*W11*
21-Oct-19	BL	11.23	31.07	18.25	10.68	-	-	-	-	-	-	-	-
	SL	11.31	20.22	16.15	9.84	-	-	-	-	-	-	-	-
22-Oct-19	BL	8.52	20.84	12.13	9.51	28.97	23.30	5.91	3.48	9.80	8.32	2.66	43.15
	SL	6.07	20.10	14.79	8.61	27.25	17.38	5.79	1.90	2.56	3.07	5.07	39.21
23-Oct-19	BL	11.27	18.99	13.19	11.54	-	-	-	-	-	-	-	-
	SL	8.96	16.52	14.30	9.48	-	-	-	-	-	-	-	-
24-Oct-19	BL	9.57	20.34	11.49	10.15	-	-	-	-	-	-	-	-
	SL	11.87	15.16	12.03	9.63	-	-	-	-	-	-	-	-
25-Oct-19	BL	8.45	26.14	14.30	10.62	-	-	-	-	-	-	-	-
	SL	8.10	25.15	11.03	12.45	-	-	-	-	-	-	-	-
26-Oct-19	BL	12.27	22.19	10.22	9.63	-	-	-	-	-	-	-	-
	SL	8.14	15.78	8.78	11.91	-	-	-	-	-	-	-	-
27-Oct-19	BL	8.47	24.78	13.44	9.97	-	-	-	-	-	-	-	-
	SL	7.79	20.34	11.18	11.69	-	-	-	-	-	-	-	-
28-Oct-19	BL	5.04	8.62	8.06	3.48	-	-	-	-	-	-	-	-
	SL	5.50	7.37	10.76	2.82	-	-	-	-	-	-	-	-
29-Oct-19	BL	4.52	8.99	8.09	7.39	31.19	14.92	4.98	-	-	-	-	60.04
	SL	5.13	8.95	4.97	6.73	36.62	13.93	7.50	-	-	-	-	41.43
30-Oct-19	BL	5.62	7.63	10.33	5.66	-	-	-	2.82	3.66	2.01	2.61	-
	SL	7.50	6.89	5.73	3.08	-	-	-	3.91	3.69	1.85	1.45	-
31-Oct-19	BL	7.83	7.06	5.51	5.81	-	-	-	-	-	-	-	-
	SL	2.81	5.84	4.56	5.68	-	-	-	-	-	-	-	-
1-Nov-19	BL	8.41	9.32	6.14	3.35	-	-	-	-	-	-	-	-
	SL	6.09	7.64	6.98	3.27	-	-	-	-	-	-	-	-
2-Nov-19	BL	3.95	6.46	5.20	6.12	-	-	-	-	-	-	-	-
	SL	4.75	7.80	5.83	4.44	-	-	-	-	-	-	-	-
3-Nov-19	BL	4.91	6.89	4.12	5.18	-	-	-	-	-	-	-	-
	SL	3.35	6.16	3.48	5.55	-	-	-	-	-	-	-	-
4-Nov-19	BL	4.54	9.64	4.94	6.23	-	-	-	-	-	-	-	-
	SL	2.42	7.16	5.24	4.52	-	-	-	-	-	-	-	-
5-Nov-19	BL	3.93	5.78	5.02	4.49	17.01	11.26	3.90	4.32	3.06	8.58	3.72	16.27
	SL	3.11	5.94	5.68	5.34	15.53	10.11	3.56	3.83	2.88	3.08	3.19	20.84
6-Nov-19	BL	5.65	8.46	7.22	4.22	-	-	-	-	-	-	-	-
	SL	4.72	8.10	8.03	4.88	-	-	-	-	-	-	-	-
7-Nov-19	BL	-	-	-	-	-	-	-	-	-	-	-	-
	SL	-	-	-	-	-	-	-	-	-	-	-	-
8-Nov-19	BL	5.14	6.65	10.15	4.57	-	-	-	-	-	-	-	-
	SL	2.75	5.65	5.65	4.35	-	-	-	-	-	-	-	-
9-Nov-19	BL	5.84	8.98	6.50	4.20	-	-	-	-	-	-	-	-
	SL	3.79	4.28	5.59	3.93	-	-	-	-	-	-	-	-
10-Nov-19	BL	3.29	6.07	4.38	3.56	-	-	-	-	-	-	-	-
	SL	2.27	7.20	2.37	3.92	-	-	-	-	-	-	-	-

Date		TSS (mg/l)											
		W12	*W1*	*W3*	*W5*	*W2*	*W4*	*W6*	*W7*	*W8*	*W9*	*W10*	*W11*
11-Nov-19	BL	2.97	4.81	1.55	1.87	-	-	-	-	-	-	-	-
	SL	2.86	3.93	1.60	1.82	-	-	-	-	-	-	-	-
12-Nov-19	BL	4.33	3.39	2.66	1.66	-	-	-	-	-	-	-	-
	SL	1.66	2.68	2.85	1.12	-	-	-	-	-	-	-	-
13-Nov-19	BL	3.64	7.79	3.05	2.35	13.69	8.42	3.75	-	-	-	-	25.52
	SL	3.21	7.43	2.79	3.60	12.70	7.80	1.75	-	-	-	-	23.55
14-Nov-19	BL	-	-	-	-	-	-	-	-	-	-	-	-
	SL	-	-	-	-	-	-	-	-	-	-	-	-
15-Nov-19	BL	5.17	14.30	10.20	6.61	-	-	-	-	-	-	-	-
	SL	5.44	13.56	8.69	5.47	-	-	-	-	-	-	-	-
16-Nov-19	BL	2.84	12.82	5.29	4.61	-	-	-	-	-	-	-	-
	SL	3.61	12.16	5.66	2.40	-	-	-	-	-	-	-	-
17-Nov-19	BL	4.02	10.38	3.96	2.74	-	-	-	-	-	-	-	-
	SL	2.68	9.62	3.45	3.03	-	-	-	-	-	-	-	-
18-Nov-19	BL	3.82	11.58	3.92	3.12	-	-	-	-	-	-	-	-
	SL	9,69	26,60	10,60	8,60	-	-	-	-	-	-	-	-
19-Nov-19	BL	9.51	14.79	11.27	9.80	-	-	-	-	-	-	-	-
	SL	9.69	13.19	9.75	10.38	-	-	-	-	-	-	-	-
20-Nov -19	BL	6.16	13.07	6.51	5.68	51.29	20.10	9.43	2.63	3.45	5.62	2.86	73.11
	SL	4.98	13.56	6.03	8.42	45.62	20.34	7.52	5.39	4.48	6.24	2.32	54.25

Source : Contractor Environmental Monitoring Report, November 2019

Note :

- In this monitoring period (21 Oct – 20 Nov 2019), the TSS concentrations met the Indonesian standard according to MoE Decree No. 51/2004. However, there were 9 days which the impacted sites were more than 10 mg/L and 4 days higher of 20 mg/L than reference site values, particularly, at the shallower sites closer to shore (e.g., sites W1, W2, W3, W4, and W11). It recorded the shallower sites closer to shore were occasionally higher than 20 mg/L above the reference site in this monitoring period.
- Given site W1, site W2, site W4, and W11 were near naturally turbid areas, and 1.92 km, 1.40 km, 3.02 km and 413 m from the construction activities (CDM & CPM Construction Activities). The high turbidity value in those sites were possibly influenced by naturally occurring turbid plumes that extend from the shoreline (particularly after rain events).
- W12 is a reference site, BL = Bottom Layer & SL = Surface Layer

>10 and <= 20 mg/L above reference site

> 20 above reference site and < 80 mg/L

>= 80 mg/L

Table 5 Daily Monitoring for TSS results at Bottom & Surface-layer (21 Nov - 20 Des 2019)

Date		TSS (mg/l)											
		W12	*W1*	*W3*	*W5*	*W2*	*W4*	*W6*	*W7*	*W8*	*W9*	*W10*	*W11*
21-Nov-19	BL	6.97	13.07	7.19	6.20	-	-	-	-	-	-	-	-
	SL	9.11	11.55	11.08	6.00	-	-	-	-	-	-	-	-
22-Nov-19	BL	6.53	6.31	4.51	5.25	-	-	-	-	-	-	-	-
	SL	4.50	9.47	5.15	3.99	-	-	-	-	-	-	-	-
23-Nov-19	BL	4.11	10.90	9.09	5.68	-	-	-	-	-	-	-	-
	SL	4.97	9.85	8.69	7.37	-	-	-	-	-	-	-	-
24-Nov-19	BL	5.76	10.44	6.72	5.54	-	-	-	-	-	-	-	-
	SL	6.09	12.07	7.05	4.77	-	-	-	-	-	-	-	-
25-Nov-19	BL	3.88	7.50	7.27	4.36	-	-	-	-	-	-	-	-
	SL	8.00	6.79	5.99	3.70	-	-	-	-	-	-	-	-
26-Nov-19	BL	5.20	6.81	7.20	5.99	-	-	-	-	-	-	-	-
	SL	4.02	5.86	5.01	2.54	-	-	-	-	-	-	-	-
27-Nov-19	BL	5.23	6.61	4.08	5.46	16.27	8.04	5.30	-	-	-	-	22.44
	SL	9.46	6.32	6.09	4.49	11.42	7.87	6.21	-	-	-	-	19.23
28-Nov-19	BL	13.07	6.63	3.16	2.60				0.96	1.33	1.26	1.85	
	SL	8.69	5.35	2.28	3.35	-	-	-	0.99	2.40	1.22	1.96	-
29-Nov-19	BL	3.79	4.66	4.71	3.95	-	-	-	-	-	-	-	-
	SL	3.83	5.44	4.78	2.53	-	-	-	-	-	-	-	-
30-Nov-19	BL	5.57	9.36	4.48	3.51	-	-	-	-	-	-	-	-
	SL	8.27	7.99	4.71	3.67	-	-	-	-	-	-	-	-
1-Des-19	BL	4.73	6.29	4.22	3.90	-	-	-	-	-	-	-	-
	SL	4.27	7.36	4.48	3.77	-	-	-	-	-	-	-	-
2-Des-19	BL	5.73	8.41	5.44	4.13	-	-	-	-	-	-	-	-
	SL	6.29	8.85	4.01	3.07	-	-	-	-	-	-	-	-
3-Des-19	BL	6.07	8.75	5.83	4.07	-	-	-	-	-	-	-	-
	SL	3.30	8.11	5.30	4.06	-	-	-	-	-	-	-	-
4-Des-19	BL	5.17	10.38	6.34	6.32	20.96	8.88	4.80	1.17	2.29	3.56	1.76	28.23
	SL	4.28	9.38	6.67	5.28	20.59	7.39	4.81	1.11	2.02	2.38	1.57	26.38
5-Des-19	BL	6.94	9.00	8.67	5.92	-	-	-	-	-	-	-	-
	SL	6.15	8.17	7.84	4.83	-	-	-	-	-	-	-	-
6-Des-19	BL	7.95	12.26	9.68	6.83	-	-	-	-	-	-	-	-
	SL	7.00	10.57	7.73	6.10	-	-	-	-	-	-	-	-
7-Des-19	BL	-	12.29	9.57	7.15	-	-	-	-	-	-	-	-
	SL	-	11.02	9.35	6.95	-	-	-	-	-	-	-	-
8-Des-19	BL	7.05	13.32	12.01	9.70	-	-	-	-	-	-	-	-
	SL	6.83	15.41	9.69	9.27	-	-	-	-	-	-	-	-
9-Des-19	BL	4.39	8.64	5.28	6.76	-	-	-	-	-	-	-	-
	SL	4.36	7.77	4.72	5.76	-	-	-	-	-	-	-	-
10-Des-19	BL	5.55	5.84	5.15	5.67	6.36	8.59	3.79	-	-	-	-	12.33
	SL	3.97	7.41	3.83	4.73	8.41	9.70	5.02	-	-	-	-	10.34
11-Des-19	BL	3.00	5.57	3.88	3.77	-	-	-	1.04	1.74	3.01	1.70	-
	SL	3.44	6.36	2.93	7.31	-	-	-	1.22	1.80	2.60	1.98	-

Date		TSS (mg/l)											
		W12	W1	W3	W5	W2	W4	W6	W7	W8	W9	W10	W11
12-Des-19	BL	4.50	7.30	4.22	3.93	-	-	-	-	-	-	-	-
	SL	4.15	7.55	4.48	3.16	-	-	-	-	-	-	-	-
13-Des-19	BL	2.69	6.12	2.66	3.54	-	-	-	-	-	-	-	-
	SL	2.90	4.88	6.93	4.91	-	-	-	-	-	-	-	-
14-Des-19	BL	3.66	3.80	3.01	3.32	-	-	-	-	-	-	-	-
	SL	3.18	3.70	2.49	3.22	-	-	-	-	-	-	-	-
15-Des-19	BL	3.77	6.12	4.91	3.16	-	-	-	-	-	-	-	-
	SL	3.88	6.93	4.88	4.15	-	-	-	-	-	-	-	-
16-Des-19	BL	4.01	7.35	5.03	4.80	-	-	-	-	-	-	-	-
	SL	5.35	7.46	5.84	5.57	-	-	-	-	-	-	-	-
17-Des-19	BL	3.77	5.41	4.39	4.28	-	-	-	-	-	-	-	-
	SL	4.77	5.65	3.70	4.54	-	-	-	-	-	-	-	-
18-Des-19	BL	5.51	7.62	4.80	4.19	21.33	7.90	3.80					15.53
	SL	4.85	7.88	4.36	3.40	19.48	7.48	3.33	-	-	-	-	16.40
19-Des-19	BL	4.24	5.65	3.74	3.87	-	-	-	-	-	2.91	-	-
	SL	3.51	5.91	3.92	3.38	-	-	-	-	-	2.07	-	-
20-Des-19	BL	3.45	5.50	3.80	3.69	-	-	-	-	-	-	-	-
	SL	2.48	5.75	4.15	3.06	-	-	-	-	-	-	-	-

Source : Contractor Environmental Monitoring Report, December 2019

Note :

- In general, TSS concentrations during this period were relatively consistent with previous periods. TSS concentrations across the study area ranged from 0.96 mg/L to 28.23 mg/L across all sites; the average TSS over the period was 6.19 mg/L with standard deviation (SD) of 3.9012 mg/L. Turbidity ranged from 0.78 to 22.9 NTU across all sites; the average turbidity level over the period was 5.0175 NTU with SD of 3.1642 NTU. TSS and turbidity in surface and bottom layers were similar. TSS and turbidity were generally higher at the impact sites than at the reference site (W12), particularly at the shallower sites closer to shore (e.g., sites W2 and W11), which are naturally influenced by a turbid plume that extends from the shoreline and also expected to be influenced caused by natural and/or non-dredging sources. The TSS concentrations meet the Indonesian standard according to MoE Decree No. 51/2004.
- W12 is a reference site, BL = Bottom Layer & SL = Surface Layer

>10 and <= 20 mg/L above reference site

> 20 above reference site and < 80 mg/L

>= 80 mg/L

Table 6. Concentration of sediment quality measurement result (September 2019)
Conducted at one time during the construction phase

Table 12 Concentrations of sediment quality parameters at each site, September 2019.

Parameter	Unit	ISQG[1]	NADG[2]	PEL[3]	S7	S8	S9	S10	S11	S12
Physical Parameters										
Color	-	-	-	-	Greenish Brown	Greenish Brown	Greenish Brown	Greenish Brown	Greenish Brown	Greenish Brown
Odor	-	-	-	-	Odourless	Odourless	Odourless	Odourless	Odourless	Odourless
Appearance	-	-	-	-	Sludge	Sludge	Sludge	Sludge	Sludge	Sludge
Moisture Content	%	-	-	-	55.3	37.2	65.9	63.9	55.5	62.5
Specific Gravity	g/cc	-	-	-	1.16	1.27	1.12	1.15	1.25	1.14
Sediment Volatile Solid	mg/L	-	-	-	4000	4800	8000	3000	400	500
Ash Content	%	-	-	-	91.86	93.94	89.09	89.71	91.64	90.27
Total Organic Carbon	%	-	-	-	1.37	0.82	1.51	1.45	1.16	1.6
					Particle Size					
Sand (1000-100 µ)	%	-	-	-	0.34	3.7	0.25	0.11	0.46	0.84
Fine Sand (50-100 µ)	%	-	-	-	0.57	10.97	0.13	0.22	1.72	4.57
Dust (2-50 µ)	%	-	-	-	35.52	42.17	28.3	34.7	29.28	30.85
Clay (0-2µ)	%	-	-	-	63.56	43.17	71.32	64.97	68.54	63.73
Metals										
Arsenic (As)	mg/kg	7.24	20	41.6	<1	7	2	1	<1	3
Cadmium (Cd)	mg/kg	0.7	1.5	4.2	1.35	1.7	1.55	1.33	1.64	1.49
Chromium (Cr)	mg/kg	52.3	80	160	14.3	15.1	15.3	15.9	14.8	14
Copper (Cu)	mg/kg	18.7	65	108	10	4	7	7	10	4
Lead (Pb)	mg/kg	30.2	50	112	59.2	70.8	59.3	59.5	60.8	56.8
Nickel (Ni)	mg/kg	-	21	-	10.8	10.8	11.3	10.5	12.8	10.4
Zinc (Zn)	mg/kg	124	200	271	71	76	72	69	77	65
Mercury (Hg)	mg/kg	0.13	0.15	0.7	0.0732	0.0643	0.0825	0.0937	0.0936	0.0620

1. Canadian Sediment Quality Guidelines for the Protection of Aquatic Life (Canadian Council of Minister The Environment; CCME) – Interim Sediment Quality Guideline (ISQG).
2. Natural Assessment Guidelines for Dredging (NADG), 2009. Autralian Government Screening Level.
3. Canadian Sediment Quality Guidelines for the Protection of Aquatic Life (Canadian Council of Minister the Environment; CCME) – Probable Effect Level (PEL)

Source : Contractor Environmental Monitoring Quarterly Report No. 04, (Period August – October 2019)

Table 7. Summary of baseline sediment quality (September 2019)

Parameter	Unit	Observed value (Average)		Observed Value (Min-Max)		Standards			Number of Stations Above Standard/s
		Baseline	Q4	Baseline	Q4	1	2	3	
Moisture content	%	62	56.72	45.4-4	37.2-65.9	-	-	-	-
Volatile	%	138	3450	87-138	400-8000	-	-	-	-
Ash content	%	91.40	91.01	86.53-96.25	89.09–93.94	-	-	-	-
Ignition loss	%	-	-	-		-	-	-	-
Grading analysis (Median diameter)	µm	Clay (0-2µm)	Clay (0-2µm)	Clay to Sand (<0.1-1000)	Clay (0-2µm)	-	-	-	-
TOC	mg/Kg	3.21	0.82	2.13-4.32	0.82-1.6	-	-	-	-
Mercury (Hg)	mg/Kg	<0.05	0.08	<0.05	0.06-0.09	0.15	0.13	0.7	-
Arsenic (As)	mg/Kg	1.50	3.25	1-6	1-7	20	7.24	41.6	-
Cadmium (Cd)	mg/Kg	1.85	1.51	1.33-3.25	1.33 - 1.7	1.5	0.7	4.2	6 (S7-S12)
Chromium (Cr)	mg/Kg	18.80	14.90	14.0-27.2	14-15.9	80	52.3	160	-
Copper (Cu)	mg/Kg	4.00	7.00	2-6	4-10	65	18.7	108	-
Nickel (Ni)	mg/Kg	11.78	11.10	8.4-16.9	10.4-12.8	21	-	-	-
Zinc (Zn)	mg/Kg	54.83	71.67	40-99	65-77	200	124	271	-
Lead (Pb)	mg/Kg	64.93	61.07	49.2-107	56.8-70.8	50	30.2	112	6 (S7-S12)

Standards:

1. Canadian Sediment Quality Guidelines for the Protection of Aquatic Life (Canadian Council of Minister of the Environment; CCME) – Interim Sediment Quality Guideline (ISQG)
2. National Assessment Guidelines for Dredging (NADG). 2009. Australian Government Screening Level
3. Canadian Sediment Quality Guidelines for the Protection of Aquatic Life (Canadian Council of Minister of the Environment; CCME) – Probable Effect Level (PEL)

Source : Contractor Environmental Monitoring Quarterly Report No. 04, (Period August – October 2019)

Table 8. Benthic invertebrate indices for each site, September 2019

Indices	UoM	S7	S8	S9	S10	S11	S12
Species Density							
Polychaeta							
Drilonereis sp.		26	53	26	26	79	79
Holothuroidea							
Holothuria sp.		26			26	53	
Density	Ind/m²	53	53	26	53	132	79
Taxa Richness (S)	No. taxa	2	1	1	2	2	1
Diversity Index (H')	-	1	0	0	1	0.97	0
Uniformity Index (E)	-	1	-	-	1	0.97	-
Dominance Index (C)	-	0.5	1	1	0.5	0.52	1

UoM is unit of measurement

Source : Contractor Environmental Monitoring Quarterly Report No. 04, (Period August – October 2019)

Table 9. Nekton abundance, species richness, and catch per unit effort at each site, September 2019

Species	Local Name	Total Abundance							Catch-Per-Unit-Effort (CPUE)						
		N1	N2	N3	N4	N5	N6	Total	N1	N2	N3	N4	N5	N6	Total
Fish															
Engraulidae sp.	Bilis	2	18	-	-	2	-	22	0.14	1.18	0.00	0.00	0.14	0.00	1.45
Cynoglossus lingua	Lidah	-	-	-	1	-	-	1	0.00	0.00	0.00	0.07	0.00	0.00	0.07
Pseudorhombus cinnamoneus	Terbis	-	-	-	4	-	-	4	0.00	0.00	0.00	0.30	0.00	0.00	0.30
Johnius sp.	Betotot/Gulamah	3	-	-	-	-	-	3	0.21	0.00	0.00	0.00	0.00	0.00	0.21
Leiognathus equulus	Petek	-	3	1	3	-	1	8	0.00	0.20	0.07	0.22	0.00	0.04	0.53
Nemipterus japonicus	Kerisi	-	-	1		-	-	1	0.00	0.00	0.07	0.00	0.00	0.00	0.07
Solea solea	Sebelah	-	-	-	1	-	-	1	0.00	0.00	0.00	0.07	0.00	0.00	0.07
Nibea albiflora	Giligan/Tigawaja	-	1	-	-	-	-	1	0.00	0.07	0.00	0.00	0.00	0.00	0.07
Terapon puta	Kerong	-	-	1	-	-	-	1	0.00	0.00	0.07	0.00	0.00	0.00	0.07
Crustaceans		-	-	-	-	-	-	-	-	-	-	-	-	-	-
Penaeus merguiensis	Udang Peci	1	-	-	-	3	-	4	0.07	0.00	0.00	0.00	0.20	0.00	0.27
Molluscs		-	-	-	-	-	-	-	-	-	-	-	-	-	-
Murex acanthostephes	Kerang Ranga	-	-	-	7	-	1	8	-	-	-	-	-	-	-
Amusium pleuronectes	Kerang Simping	-	-	-	7	-		7	0.00	0.00	0.00	0.52	0.00	0.00	0.52
Total		6	22	3	23	5	2	61	0.42	1.44	0.21	1.19	0.34	0.04	3.64
Species Richness		3	3	3	6	2	2	12	-	-	-	-	-	-	-
Soak time (hr)		0.48	0.51	0.47	0.45	0.49	0.45	2.85	-	-	-	-	-	-	-
Net Length (m)		30	30	30	30	30	50	-	-	-	-	-	-	-	-

[1] CPUE = abundance / soak time /

Source : Contractor Environmental Monitoring Quarterly Report No. 04, (Period August – October 2019)

Table 10. Total abundance species and CPUE comparison between quarterly and baseline survey

	Quarterly Survey	Baseline Survey
CPUE	0.04 – 1.44 fish/hr/m	0.51 - 3.22 fish/hr/m
Total Abundance	61 individuals	182 individuals
Species Richness	12 species	16 species

Source : Contractor Environmental Monitoring Quarterly Report No. 04, (Period August – October 2019)

Note :
A total of two benthic taxa were recorded from samples collected in the study area, including Polychaeta (Drilonereis sp.) and Holothuroidea (Holothuria sp). Drilonereis sp. was the most common species, found at all sites (sites S7, S8, S9, S10, S11, and S12) followed by Holothuria sp., which was found at three sites (sites S7, S10 and S11).

The total density of benthic taxa ranged from 26 - 132 individuals/m2 across the sites, with the highest densities occurring close to the harbor sites (Sl1). The range of total densities recorded during the current survey (26 - 132 individuals per m2) in compared with the baseline survey (0 - 336 individuals per rn2) conducted in September 2018 and during the EIA survey (0 - 441 individuals per m2) conducted in May 2016 (DGST 2017). (Table 10)

Due to the low species richness across the study area, the diversity and uniformity indices were zero and the dominance index was one for all sites except site S7, S10, and S11. Based on the Simpson's index, 0 represents infinite diversity and 1, no diversity. There was no difference between the impact sites (S7, S8, S9, S10, S11) and the reference site (S12). These results were also similar to the results of the EIA survey (DGST 2017), and the baseline survey, and are likely explained by the high proportion of fine particle sizes throughout the survey area, and the very low TOC, which results in reduced feeding opportunities for deposit and suspension feeders (Pearson and Rosenberg 1978). The average benthic diversity across the impacted sites was 64.3 ind/m2.

Nekton
A total of 61 individual crustacean, fish and molluscs were recorded during the quarterly survey. In total there were nine species of fish caught, one species of crustacean and two species of molluscs. Species richness ranged from two species at sites N5-N6; three species at sites N1 -N3; and six species at site N4. The most commonly caught nekton species was the fish species

Leiognathus equulus that was caught at all sites except N1 and N5. (see table 9)

Source : Contractor Environmental Monitoring Quarterly Report No. 04, (Period August – October 2019)

Table 11. Air Quality Laboratory Results

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KAN
Komite Akreditasi Nasional
Laboratorium Penguji
LP-330-IDN

REPORT OF ANALYSIS
No.: 964/B/LHU/MB/X/2019

Customer Name : SHIMIZU-PP-BCK JOINT VENTURE
Address : Access Road Work Under Patimban Port Development Project (I)
Type of sample (s) : Ambient
No. Sample : 1736/MB-KU/X/2019
Date of Sampling : 2 - 3 October 2019
Date of Analysis : 4 - 17 October 2019
Coordinate Point : S: 06°16'51.14" E: 107°51'54.27"

No	PARAMETERS	MEASUREMENT TIME	REGULATION	RESULT	METHOD SPESIFICATION
				STA 0+000	
1.	Sulfur Dioxyde (SO_2)	24 Hours	365 µg/Nm³ [1])	5.36 µg/Nm³	SNI 7119.7:2017
2.	Carbon Monoxyde (CO)	24 Hours	10000 µg/Nm³ [1])	3383.3 µg/Nm³	IKM/7.2.6/MB (Electro Chemical Sensor)
3.	Nitrogen Dioxyde (NO_2)	24 Hours	150 µg/Nm³ [1])	21.2 µg/Nm³	SNI 7119.2:2017
4.	PM $_{10}$ (Particle < 10 µm)	24 Hours	150 µg/Nm³ [1])	0.72 µg/Nm³	SNI 7119.15:2016
5.	Total Particulat Suspended (TSP)	24 Hours	230 µg/Nm³ [1])	89.6 µg/Nm³	SNI 7119.3:2017
	Temperature	-	-	34°C	Direct Reading
	Kelembaban Relatif			60%	
	Kecepatan Angin			0.09 - 1.19 m/det	
	Arah Angin Dominan			South	

[1]) Government Regulation of the Republic of Indonesia Number 41 of 1999 concerning Air Pollution Control; Air Quality Standards National Ambient

Jakarta, 17 October 2019
PT Mitralab Buana

Yulia Emawati, S.Si
Manajer Laboratorium

Source : Contractor Environmental Monitoring Report, October 2019

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LP-330-IDN

REPORT OF ANALYSIS

No.: 964/B/LHU/MB/X/2019

Customer Name	: **SHIMIZU-PP-BCK JOINT VENTURE**
Address	: Access Road Work Under Patimban Port Development Project (I)
Type of sample (s)	: Ambient
No. Sample	: 1736/MB-KU/X/2019
Date of Sampling	: 2 - 3 October 2019
Date of Analysis	: 4 - 17 October 2019
Coordinate Point	: S: 06°16'51.14" E: 107°51'54.27"

No	PARAMETERS	MEASUREMENT TIME	REGULATION	RESULT	METHOD SPESIFICATION
				STA 2+700	
1.	Sulfur Dioxyde (SO_2)	24 Hours	365 µg/Nm³ [1])	6.52 µg/Nm³	SNI 7119.7:2017
2.	Carbon Monoxyde (CO)	24 Hours	10000 µg/Nm³ [1])	2926.1 µg/Nm³	IKM/7.2.6/MB (Electro Chemical Sensor)
3.	Nitrogen Dioxyde (NO_2)	24 Hours	150 µg/Nm³ [1])	25.1 µg/Nm³	SNI 7119.2:2017
4.	PM ₁₀ (Particle < 10 µm)	24 Hours	150 µg/Nm³ [1])	0.64 µg/Nm³	SNI 7119.15:2016
5.	Total Particulat Suspended (TSP)	24 Hours	230 µg/Nm³ [1])	81.9 µg/Nm³	SNI 7119.3:2017
	Temperature	-	-	34°C	Direct Reading
	Kelembaban Relatif			46%	
	Kecepatan Angin			1.37 - 3.32 m/det	
	Arah Angin Dominan			West	

[1]) Government Regulation of the Republic of Indonesia Number 41 of 1999 concerning Air Pollution Control; Air Quality Standards National Ambient

Jakarta, 17 October 2019
PT Mitralab Buana

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Manajer Laboratorium

Source : Contractor Environmental Monitoring Report, October 2019

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REPORT OF ANALYSIS

No.: 984/B/LHU/MB/X/2019

Customer Name : **SHIMIZU-PP-BCK JOINT VENTURE**
Address : Access Road Work Under Patimban Port Development Project (I)
Type of sample (s) : Ambient
No. Sample : 1736/MB-KU/X/2019
Date of Sampling : 2 - 3 October 2019
Date of Analysis : 4 - 17 October 2019
Coordinate Point : S: 06°14'26.95" E: 101°53'45.07"

No	PARAMETERS	MEASUREMENT TIME	REGULATION	RESULT	METHOD SPESIFICATION
				STA 7+000	
1.	Sulfur Dioxyde (SO_2)	24 Hours	365 µg/Nm³ [1])	6.44 µg/Nm³	SNI 7119.7:2017
2.	Carbon Monoxyde (CO)	24 Hours	10000 µg/Nm³ [1])	2872.7 µg/Nm³	IKM/7.2.6/MB (Electro Chemical Sensor)
3.	Nitrogen Dioxyde (NO_2)	24 Hours	150 µg/Nm³ [1])	15.2 µg/Nm³	SNI 7119.2:2017
4.	PM $_{10}$ (Particle < 10 µm)	24 Hours	150 µg/Nm³ [1])	0.86 µg/Nm³	SNI 7119.15:2016
5.	Total Particulat Suspended (TSP)	24 Hours	230 µg/Nm³ [1])	96.2 µg/Nm³	SNI 7119.3:2017
	Temperature			31°C	Direct Reading
	Kelembaban Relatif			55%	
	Kecepatan Angin			0.80 - 1.95 m/det	
	Arah Angin Dominan			East	

[1]) Government Regulation of the Republic of Indonesia Number 41 of 1999 concerning Air Pollution Control; Air Quality Standards National Ambient

Jakarta, 17 October 2019
PT Mitralab Buana

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Source : Contractor Environmental Monitoring Report, October 2019
Note : The next measurement schedule conducted on April 2020

Table 12. Noise Measurement Result

LABORATORIUM PENGUJI
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KAN
Komite Akreditasi Nasional
Laboratorium Penguji
LP-330-IDN

REPORT OF ANALYSIS
No.: 964/B/LHU/MB/X/2019

Customer Name	: **SHIMIZU-PP-BCK JOINT VENTURE**
Address	: Access Road Work Under Patimban Port Development Project (I)
Type of sample (s)	: Noise
No. Sample	: 1736/MB-KU/X/2019
Date of Sampling	: 2 - 3 October 2019
Date of Analysis	: 4 - 17 October 2019
Sampling Method	: IKM/7.2.8/MB (Sound Level Meter)

No	LOCATION	MEASUREMENT TIME	RESULT	REGULATION *)		
1.	STA 0+000	24 Hours	70.5 dBA	A. Area Designation		
				1. Housing and Settlements	:	55 dBA
				2.Trade and Services	:	70 dBA
				3.Office and Trade	:	65 dBA
				4.Green Open Space	:	50 dBA
2.	STA 2+700	24 Hours	55.4 dBA	5.Industry	:	70 dBA
				6.Government & Public Fasilities	:	60 dBA
				7.Recreation	:	70 dBA
				8.Spesific : a. Port	:	70 dBA
				b. Cultural Heritage	:	60 dBA
3.	STA 7+000	24 Hours	70.4 dBA	B. Activity Environment		
				1.Hospital etc	:	55 dBA
				2.School etc	:	55 dBA
				3.Place of Worship etc	:	55 dBA

*) Regulation of Environment Minister No. 48/MENLH/11/1996

Jakarta, 17 October 2019
PT Mitralab Buana

Yulia Emdiwati, S.Si
Laboratory Manager

Source : Contractor Environmental Monitoring Report, October 2019

Note: Refer to the EIA Document regarding Noise standard value; it is used 70 dB(A) as a max noise limit for the project activities.

The next measurement conducted in April 2020.

3. Details on Social Environment

Table 13. Number of Local worker Terminal Construction

No	Location (Village)	Monitoring Period			Total*
		2019			
		Oct	Nov	Dec	
1	Patimban	115	116	113	**1.186**
2	Gempol	9	5	5	**111**
3	Kalentambo	21	21	22	**179**
4	Kotasari	2	2	3	**44**
5	Pusakaratu	8	10	10	**74**
6	Pusakaraya	2	4	4	**23**
TOTAL		**157**	**158**	**157**	**1.617**

*since construction started

Source : Contractor Environmental Monitoring Report, 2019

Table 14. Number of Local worker Breakwater, Seawall, and Channel Dredging Works

No	Location (Village)	Monitoring Period			Total*
		2019			
		Oct	Nov	Dec	
1	Patimban	33	27	24	**146**
2	Gempol	6	6	11	**44**
3	Kalentambo	5	5	10	**34**
4	Kotasari	1	1	1	**6**
5	Pusakaratu	2	7	12	**21**
6	Pusakajaya	-	-	-	**2**
TOTAL + other area		**67**	**67**	**82**	**521**

*since construction started

Source : Contractor Environmental Monitoring Report, 2019

Table 15. Number of local Workers for Access Road

No	Location (Village)	Monitoring Period			Total*
		2019			
		Oct	Nov	Dec	
1	Patimban	26	26	40	**215**
2	Gempol	84	84	84	**613**
3	Kalentambo	46	46	46	**320**
4	Kotasari	44	45	45	**489**
5	Pusakaratu	90	88	91	**630**
6	Pusakajaya	9	10	10	**90**
TOTAL		**299**	**299**	**316**	**2357**

*since construction started

Source : Contractor Environmental Monitoring Report, 2019

Table 16. Land Traffic Condition and Accident Number

No	Location	Monitoring Period						Total	
		Oct 2019		Nov 2019		Dec 2019			
		TJ	AN	TJ	AN	TJ	AN	TJ	AN
1	Pantura road	0	*	0	*	0	*	0	*
2	Patimban seaport access road	0	*	0	*	0	*	0	*
3	Crossing of Pantura road	0	*	0	*	0	*	0	*
4	Crossing of Patimban seaport access road	0	*	0	*	0	*	0	*

Note:
TJ : Traffic Jam AN : Accident Number (*): No Record
Source : Contractor Environmental Monitoring Report, 2019

Table 17. Sea Traffic Condition

No	Location	Monitoring period			Total*
		Oct-19	Nov-19	Dec-19	
1	Pilling barge	2	1	1	**24**
2	Anchor boat	3	3	1	**38**
3	CDM Vessel	4	3	1	**44**
4	Semi-submersible vessel	-	-	-	**4**
5	Pneumatic conveying barge	-	-	-	**9**
6	Cement supply vessel	1	1	1	**13**
7	Improved soil placing barge	-	-	-	**9**
8	Cement transportation vessel	2	1	1	**26**
9	Cement feeder carrier	4	4	4	**48**
10	Grab dredger	3	2	1	**39**
11	Hopper barge	2	2	4	**43**
12	SP Hopper Barge	-	-	-	**13**
13	Flat barge	6	4	6	**56**
14	Crane barge	1	1	1	**34**
15	Tug boat	8	8	8	**141**
16	Crew boat	-	-	-	**69**
17	Work boat	3	3	3	**33**
18	Excavator Barge	1	1	1	**10**
19	Fracturing Barge	1	1	1	**10**
20	Stone Barge	-	-	-	**3**
21	CPM	1	1	1	**4**
22	Multi Purpose Vessel	1	1	1	**4**
23	Placing Barge	1	1	1	**4**
24	Rescue boat	3	3	1	**10**
25	SPOB	3	3	3	**11**
26	Bunker Vessel	2	2	1	**7**
27	Multi Cat	1	1	1	**3**
28	Passenger Boat	8	8	8	**24**
29	Anchor Barge	-	-	1	**1**
30	Dredger	-	-	2	**2**
31	Patrol Boat	-	-	2	**2**
32	Placing Barge	-	-	1	**1**

No	Location	Monitoring period			Total*
		Oct-19	Nov-19	Dec-19	
Total		**61**	**55**	**57**	**739**

*since construction started
Source : Contractor Environmental Monitoring Report, 2019

Table 18. Sea Traffic Condition and Accident Number

No	Location	Monitoring period						Total	
		Oct 2019		Nov 2019		Dec 2019			
		STC	AN	STC	AN	STC	AN	STC	AN
1	Patimban Beach	Smooth	0	Smooth	0	Smooth	0	Smooth	0

Note:
STC : Sea traffic condition AN : Accident Number
Source : Contractor Environmental Monitoring Report, 2019

Table 19. Public Unrest

No	Location	Monitoring Period									Total		
		Oct 2019			Nov 2019			Dec 2019					
		PUN	PRO	DEM	PUN	PRO	DEM	PUN	PRO	DEM	PUN	PRO	DEM
1	Around Patimban port development project	0	0	0	0	0	1	0	0	0	0	0	1

Note:
PUN : Pucblic Unrest PRO : Protest DEM : Demonstration
Source : Contractor Environmental Monitoring Report, 2019

Table 20. Record of Livelihood Restoration Program (LRP)

Implementation date	Program name	Number of participants
16 – 19 November	Culinary Training Batch 1	40
23 – 27 November	Cleaning Service Training Batch 2	31
18 Nov – 10 Dec	Welding Training Batch 2	39
11 – 19 December	Stevedoring Workforce Training Batch 2	30
Total Participants		140

Source : Livelihood Restoration Program Report, 2019

Table 21. Record of Funds Land Acquisition

Item	Allocated funds			Record of disbursement		
	Amount (IDR.)	Allocated organization	Purpose of use	Date	Amount (IDR.)	Disbursement to
Access Road		LMAN	Payment for 122 land plot owner (private)	Last updated January 2020	46.558.677.836	Already paid to 117 land plot owner or

Item	Allocated funds			Record of disbursement		
	Amount (IDR.)	Allocated organization	Purpose of use	Date	Amount (IDR.)	Disbursement to
						equal to 113.002 M^3.
		LMAN	Payment for 23 land plot institution own (public)	Last updated January 2020	-	1 plot own by Ministry of Agricultural already paid, the rest is on progress
Back up area		LMAN	Payment to 424 land plot owner (private)	Last updated January 2020	440.427.373.487	Already paid to 230 land plot owner equal to 183.4 Ha
		LMAN	Arrange to data correction to 91 land plot owner (private)	Last updated January 2020	145.311.614.362	Arrange to data correction for 626.630 M^2.
		LMAN	Plan to submission to LMAN for 43 plot owner (private)	Last updated January 2020	17.348.936.724	Arrange to submission to LMAN for 43 plot owners equal to 259.560 M^2.
		LMAN	Need to consignment for 4 land plot owners (private)	Last updated January 2020	3.103.093.307	Need to consignment for 4 land plot owners equal to 16.684 M^2.

Source : Directorate General of Sea Transportation, 2020

Table 22. Progress of Compensation Payment and Land Vacation (Private owner)

Village / Items	Patimban	Gempol	Kalentambo	Kotasari	Pusakajaya	Pusakaratu
Number of households with completion of payment	159	51	17	8	-	18
Percentage of completion (%)	63%	98%	100%	89%	-	90%
Number of affected household to be payed	94	1	0	1	-	2

Village / Items	Patimban	Gempol	Kalentambo	Kotasari	Pusakajaya	Pusakaratu
Number of vacated plots	286	65	23	11	-	18
Percentage of completion (%)	67%	98%	100%	92%	-	90%
Number of plots to be vacated	138	1	0	1	-	2

Source : Directorate General of Sea Transportation, 2020

Table 23. Livelihood Restoration Program (LRP)

Allocated funds			Record of disbursement		
Amount (IDR.)	Allocated organization	Purpose of use	Date	Amount (IDR.)	Disbursement for
12.666.742.562	DGST to Consultant PKG-8	LRP implementation	Sep-19	49.452.900	Non-personnel
				60.300.000	Experts
				167.770.000	Forklift training batch 6
				158.770.000	Forklift training batch 7
				311.267.000	Welding training batch 1
				143.000.000	Cleaning service training batch 1
				214.000.000	Security training
			Oct-19	60.300.000	Experts
				57.600.348	Non-personnel
			Nov-19	60.300.000	Experts
				42.058.100	Non-personnel
			Total	1.324.818.348	-

Source : Livelihood Restoration Program Report, 2019

Table 24. Greivance Redress

Date of greivance received	Complainant	Demand	Way of collecting greivance	Summary of greivance
04-11-2019	TKBM Patimban Sejahtera	1. Publish the recommendation of the creation of Sejahtera Patimban TKBM Cooperative. 2. Evaluate educational and training programs for affected people to be prioritized	Demanding letter issued by TKBM Patimban Sejahtera	1. The complainants and Harbormaster and Port Authority Office (KSOP) Class II Patimban, and related parties directly arranged meeting to identify the demanding and find solutions on the same date of the demonstration.

Date of greivance received	Complainant	Demand	Way of collecting greivance	Summary of greivance
		employment in port. 3. Empower the local (Pusakanagara) enterprise to support the development and operational Patimban Port.		Regarding the TKBM Patimban Sejahtera recommendation, Harbormaster and Port Authority Office (KSOP) Class II Patimban explains that the recommendation to TKBM Patimban Sejahtera cannot be issued since the port status is still in the development stage, and the recommendation shall be released after the operator who operates the Patimban Port is selected. Also, to calm the situation, KSOP Class II Patimban guaranted that will not release any TKBM recommendation. 2. The Livelihood Restoration Program (LRP) team since 2018 has already assessed and built the trainng program based on peoples requests. Also, the programs were prepared under the supervision of related government agencies such as Manpower agency, Cooperative agency, and Fishery agency. Then, the established various programs were chosen by the paticipants themselves. In early 2019, some of the participants wanted to change the training program that

Date of greivance received	Complainant	Demand	Way of collecting greivance	Summary of greivance
				had been choosen, and there were another program proposals from the communities. Consider the situations, the LRP team conducted further assessment and finalized the program compositions, and then also started the implementation. The LRP team will make further adjustments on the program if necessary depending on the situation. 3. Regarding involve the local enterprise for Patimban Port development, DGST and the Consultant encourage the contractors to involve the local enterprise as long as their capability meets the requirement.
03-10-2018	Nearest community (house) in work pile activity	Household repaired that affected by pile work in Pusakaratu	Demanding issue on October 2018	Handling complaints and problems due to access road development is still in progress. Until December 2019, the contractor has already repaired 58 house located at Desa Pusakaratu, Desa Gempol, and Desa Kotasari of total 264 house. While for the remaining house still on progress to indentify the condition, and scheduled to repaired.

Source : Contractor Environmental Monitoring Report, 2019

Table 25. Implementation Problems and Solutions (if any)

Record of problems		Record of solutions	
Date	Problems	Date	Solutions

Source : Contractor Environmental Monitoring Report, 2019

Figure 5. Complainants Form

Lampiran-1

Nomor Seri *(Penggunaan Resmi)*:

Formulir Pengumpulan Keluhan Proyek Pembangunan Pelabuhan Patimban

SATUAN KERJA PEMBANGUAN PELABUHAN PATIMBAN
DIREKTORAT JENDERAL PERHUBUNGAN LAUT,
JL. Medan Merdeka Barat No.8 Jakarta - 10110
FAX: 021 384963
Email : pelayananpatimban@yahoo.com

Informasi Pemohon

Nama:	KTP:
Desa:	HP:

Latar belakang dan masalah

Persoalan: ☐Aset yang Terkena Dampak ☐Kompensasi ☐Program Pemulihan Mata Pencaharian ☐Pekerjaan Konstruksi ☐Lain-lain ( )

Permintaan/Saran/Pertanyaan

Tanggal Pengiriman:		Tanggal Pengakuan:
Nama Pemohon:	Saksi*:	Nama Penerima:
Tandatangan:	Tandatangan:	Tandatangan:

* Camat atau Kepala Desa sebagai saksi

Lampiran-2

	Formulir Pelacakan Pengaduan Proyek Pembangunan Pelabuhan Patimban	Nomor Seri:

Informasi Keluhan

Nama Pengadu:	Desa:
Ringkasan Pengaduan:	

Catatan Penanganan Pengaduan

Hari	Tindakan yang diambil untuk menyelesaikan keluhan (investigasi dll)	Hasil /tindakan lebih lanjut yang harus dilakukan	Orang yang bertanggung-jawab
	Menerima Keluhan melalui _____		

Solusi akhir

Tanggal	Solusi	Laporan Keluhan	Publikasi dan Solusi	Orang yang bertanggung-jawab
		Tanggal Laporan:_____ Metode: ☐ Bicara langsung ☐Melalui kepala desa / camat ☐Lain-lain ( )	Tanggal Publikasi:_____ Metode: ☐Papan Desa ☐Others ( )	

Lampiran-3

Nomor Seri:

Hasil Publikasi Penanganan Keluhan untuk Proyek Pembangunan Pelabuhan	
	SATUAN KERJA PEMBANGUAN PELABUHAN PATIMBAN DIREKTORAT JENDERAL PERHUBUNGAN LAUT, JL. Medan Merdeka Barat No.8 Jakarta - 10110 FAX: 021 384963 Email: pelayananpatimban@yahoo.com

Informasi Pemohoon

Nama:	Desa:
Tanggal Pengajuan:	

Ringkasan Keluhan

Respon/Solusi/Hasil Investigasi

Tanggal Publikasi:

Nama Orang yang Bertanggung-Jawab:

Tandatangan:

Source : Directorate General of Sea Transportation, 2019