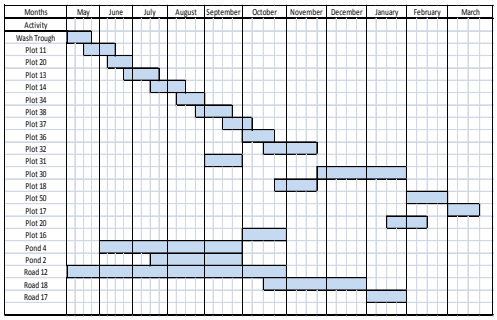
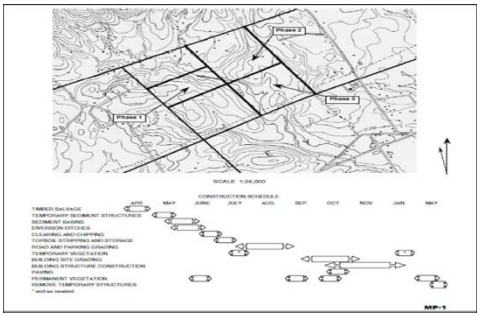
BMPs Description

JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

Item BMPs Coding	PRACTICES
PPT	**PERANCANGAN DAN PENGURUSAN TAPAK** ***(SITE PLANNING & MANAGEMENT)***
PPT-1	**CONSTRUCTION SCHEDULING – PHASING AND SEQUENCING**





DEFINITION

A specified work schedule that coordinates the timing of land-disturbing activities and the installation of erosion and sedimentation control measures.

PURPOSE

To reduce on-site erosion and off-site sedimentation by performing land disturbing activities, and installing erosion and sedimentation control practices in accordance with a planned schedule.

APPLICATION

- All land-development projects.
- Project implementation schedule should use any commercial project software that contains construction activities, construction sequences, duration, date of start and completion.
- Project monitoring (tracking system) shall be done according to work progress.

JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

Item BMPs Coding	PRACTICES
PPT	**PERANCANGAN DAN PENGURUSAN TAPAK** ***(SITE PLANNING & MANAGEMENT)***
PPT-2	**PRESERVATION OF EXISTING TREES AND VEGETATION** **TREES** **VEGETATION** **VEGETATED FILTER STRIP (VFS)**    **DEFINITION** Preservation of existing vegetation relates to the identification and protection of desirable vegetation such as trees, shrubs and plants, native vegetation and natural Vegetated Filter Strip (VFS). **PURPOSE** • To minimize disturbances on construction sites, • To stabilize soil, • To trap suspended particles from sheet flow runoff, • To promote infiltration of storm water. **APPLICATION** • Areas within the site where no construction activity is occurring. • Areas where existing vegetation can be utilized for erosion and sediment control.

JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

Item BMPs Coding	PRACTICES
PPT	**PERANCANGAN DAN PENGURUSAN TAPAK** ***(SITE PLANNING & MANAGEMENT)***
PPT-3	**ON-SITE SOURCES CONTROL** **I TOPSOIL**  **II ROCKS & STONES**  **III BIOMASS**  **IV TREES SALVATION** 

JADUAL 2 : PENERANGAN BMPs
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DEFINITION

Explore the existing site sources that can benefit the potential material for erosion control such as topsoil, rocks, biomass, existing vegetation and make use of existing native vegetation to establish seedbed preparation or grass growing and plant nursery.

PURPOSE

To make use of the existing site sources materials for erosion and sediment control which may minimize cost and time in the materials procurement.

APPLICATION

Applicable on most of construction sites and is extremely recommended for anticipated prolonged land disturbing activities such as those occurring in highway and hydroelectric projects.

JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

Item BMPs Coding	PRACTICES
KALP	**KAWALAN AIR LARIAN PERMUKAAN** ***(RUNOFF CONTROL)***
KALP-1	**EARTH BANK/ PERIMETER DIKE** **RUN-ON** **RUNOFF**   **DEFINITION** A temporary berm, dike, embankment or ridge of compacted soil, located in such a manner as to intercept, divert and channel water to a desired location. **PURPOSE** To direct runoff to a sediment trapping device or to direct run-on (clean water) around the site and away from disturbed areas, thereby reducing the potential for erosion and off site sedimentation. **APPLICATION** Earth dikes are often constructed across disturbed areas and around construction sites. The dikes shall remain in place until the disturbed areas are permanently stabilized.

JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

Item BMPs Coding	PRACTICES
KALP	**KAWALAN AIR LARIAN PERMUKAAN** ***(RUNOFF CONTROL)***
KALP -2	**DIVERSION**  **DEFINITION** A channel of compacted soil constructed above, across, or below a slope, with a supporting earthen ridge on the lower side. **PURPOSE** To reduce the erosion of steep or otherwise highly erodible areas by reducing slope lengths, intercepting storm runoff and diverting it to a stable outlet at a non-erosive velocity, or to convey storm water through a construction site. **APPLICATION** Diversions are applicable where: • The slope length needs to be reduced to minimize erosion. • Runoff from upslope areas is, or has the potential for, damaging property, flooding, or preventing the establishment of vegetation on lower areas. • Clean storm water is coming onto the site and needs to be conveyed across or around the disturbed area to prevent contamination.

JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

Item BMPs Coding	PRACTICES
KALP	**KAWALAN AIR LARIAN PERMUKAAN** ***(RUNOFF CONTROL)***
KALP -3	**LINED WATERWAY (ROCK MATERIALS)**  **DEFINITION** A waterway or outlet with a lining of rock, stone, or other permanent material. The lined section extends up the side slopes to the designed depth. The earth above the permanent lining may be vegetated or otherwise protected. **PURPOSE** To provide for the disposal of concentrated runoff without damage from erosion or flooding, where grassed waterways would be inadequate due to high velocities. **APPLICATION** This practice applies where the following or similar conditions exist: 1. Concentrated runoff is such that a lining is required to control erosion. 2. Steep grades, prolonged base flow, seepage, or piping that would cause erosion.

JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

Item BMPs Coding	PRACTICES
KALP	**KAWALAN AIR LARIAN PERMUKAAN** ***(RUNOFF CONTROL)***
KALP 4	**CATCH DRAIN**  **DEFINITION** A drain running along the side of a road or track to collect runoff from the road/track surface. **PURPOSE** To prevent silt from overflowing to road surfaces, the bare earth strip between the drain and the road must be turfed to serve as a buffer strip. **APPLICATION** • At the base of cut or fill slopes to direct sediment-laden flows to sediment traps.

JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

Item BMPs Coding	PRACTICES
KALP	**KAWALAN AIR LARIAN PERMUKAAN** ***(RUNOFF CONTROL)***
KALP 5	**CASCADING DRAIN**  **DEFINITION** These are concrete stepped catch drains laid on the steep terraced slopes. **PURPOSE** To guide flows from the berm drains down to catch drains at the base. **APPLICATION** • Any cut and fill slopes at construction sites where there is a need to channel concentrated flow down slopes.

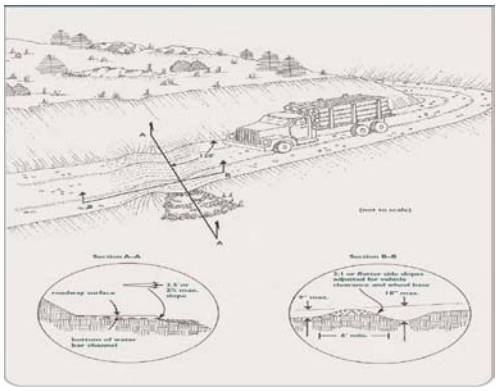
JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

Item BMPs Coding	PRACTICES
KALP	**KAWALAN AIR LARIAN PERMUKAAN** ***(RUNOFF CONTROL)***
KALP -6	**RIPRAP**   **DEFINITION** Riprap is a layer of large stones laid onto slopes and channel beds. **PURPOSE** To protect soil from erosion in areas of concentrated runoff. **APPLICATION** Use riprap to stabilize cut-and-fill slopes with 1:2 slope; channel side slopes and bottoms; inlets and outlets for culverts, bridges, slope drains, grade stabilization structures, and storm drains; and streambanks and grades.

JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

Item BMPs Coding	PRACTICES
KALP	**KAWALAN AIR LARIAN PERMUKAAN** ***(RUNOFF CONTROL)***
KALP 7	**CHECK DAM**   **DEFINITION** A check dam is a small temporary device constructed of rock, sandbags, or fiber rolls, placed across a natural or man-made channel or drainage ditch. **PURPOSE** • To reduce the velocity of concentrated stormwater flows, • To trap small amounts of sediment generated in the conveyances • To reduce scour and channel erosion. • To encourage sediment dropout. **APPLICATION** Any stormwater conveyances having concentrated flow.

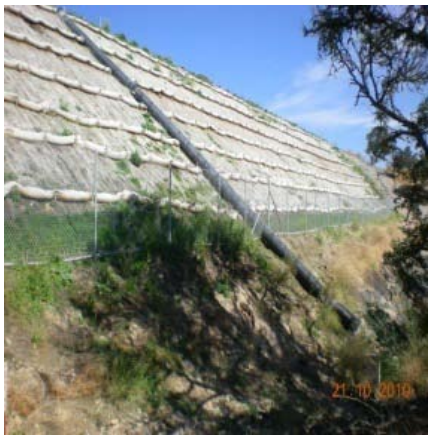
JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

Item BMPs Coding	PRACTICES
KALP	**KAWALAN AIR LARIAN PERMUKAAN** ***(RUNOFF CONTROL)***
KALP 8	**TEMPORARY INTERCEPTOR DIKE** **ROLLING DIP** **WATER BAR**   **Right-Of-Way Diversions (Water Bars)** **DEFINITION** Water bar defines a ridge and channel constructed diagonally across a sloping road that is subject to erosion and may be referred to as rolling dips depending on the features constructed. **PURPOSE** To limit the flow accumulation of erosive volumes of water by draining and dispersing road surface runoff to prevent surface erosion. **APPLICATION** Where runoff protection is needed to prevent erosion on sloping access rights of- way or other long, narrow sloping areas generally less than 30 metres in width.

JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

Item BMPs Coding	PRACTICES
KALP	**KAWALAN AIR LARIAN PERMUKAAN** ***(RUNOFF CONTROL)***
KALP 9	**SWALES**  **DEFINITION** Swales are temporary or permanent channel, which may be lined with natural vegetation, synthetic materials, or rock. **PURPOSE** To slowly convey runoff to a discharge point located downstream to minimize erosion. **APPLICATION** **Where there is a need to :** • Divert flows away from a disturbed area and to a stabilized area. • Intercept sediment laden water and divert it to a sediment trapping device. • Intercept runoff from paved or sloped surfaces. • Convey surface runoff down sloping land. • Divert clean run-on from adjacent or undisturbed slopes.

JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

Item BMPs Coding	PRACTICES
KALP	**KAWALAN AIR LARIAN PERMUKAAN** ***(RUNOFF CONTROL)***
KALP 10	**TEMPORARY AND PERMANENT PIPE SLOPE DRAIN**   **DEFINITION** A temporary or permanent pipe structure placed from the top of a slope to the bottom of a slope. A heavy duty flexible pipe or conduit such as non-perforated, corrugated plastic pipe or specially designed flexible tubing should be used. **PURPOSE** To convey storm water runoff down the face of a cut or fill slope without causing erosion on or below the slope. **APPLICATION** Temporary slope drains are used where sheet or concentrated storm water flow could cause erosion as it moves down the face of a slope.

JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

Item BMPs Coding	PRACTICES
KALP	**KAWALAN AIR LARIAN PERMUKAAN** ***(RUNOFF CONTROL)***
KALP 11	**ROCK OUTLET PROTECTION**  **DEFINITION** Paved and/or riprapped channel treatment, placed below storm drain outlets or any discharge outlets. **PURPOSE** To reduce storm water velocity and dissipate the energy of flow leaving a storm drain or discharge outlets before it empties into receiving channels, To prevent scour at storm water outlets and to minimize the potential for downstream erosion through velocity dissipation. **APPLICATION** Applicable to all storm drain outlets, road culverts, paved channel outlets and discharge outlets.

JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

Item BMPs Coding	PRACTICE
KALP	**KAWALAN AIR LARIAN PERMUKAAN** ***(RUNOFF CONTROL)***
KALP 12	**SAND BAG BARRIER**   **DEFINITION** A sandbag barrier is a temporary linear sediment barrier consisting of stacked sandbags placed around site perimeter and active worksite. **PURPOSE** To intercept and slow the flow of sediment-laden sheet flow runoff. **APPLICATION** • Along the perimeter of a site. • Along streams and channels with appropriate setback distance. • Below the toe or down slope of exposed and erodible slopes. • Around stockpiles. • At the top of slopes to divert roadway runoff away from disturbed slopes. • Where flows are moderately concentrated, such as ditches, swales, and storm drain inlets to divert and/or detain flows.

JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

Item BMPs Coding	PRACTICES
KALP	**KAWALAN AIR LARIAN PERMUKAAN** ***(RUNOFF CONTROL)***
KALP 13	**STORM DRAIN INLET PROTECTION**   **DEFINITION** Measures such as silt fence, sandbag, and fiber roll, installed around any storm drain inlet; **PURPOSE** To reduce stormwater velocity and detain or filter sediment-laden runoff to allow sediment to settle prior to discharge. **APPLICATION** • Where ponding water will not encroach into highway traffic. • Where sediment laden surface runoff may enter an inlet. • Where disturbed drainage areas have not yet been permanently stabilized.

JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

Item BMPs Coding	PRACTICES
KH	**KAWALAN HAKISAN** ***(EROSION CONTROL)***
KH 1	**MULCHING**   **DEFINITION** The application of plant residues or other suitable materials to the soil surface as ground cover. When applying mulch materials with water and glue, the application is referred to as hydromulch. **PURPOSE** • To prevent erosion by protecting the soil surface from raindrop impacts and reducing the velocity of overland flow. • To foster the growth of vegetation by increasing available moisture and providing insulation against extreme heat. **APPLICATION** • Any bare and/or disturbed area subject to next intended construction activities to proceed in more than 30 days • Any seeded area to promote growth.

JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

Item BMPs Coding	PRACTICES
KH	**KAWALAN HAKISAN** ***(EROSION CONTROL)***
KH-2	**REVEGETATION**   **DEFINITION** The establishment of temporary vegetative cover with fast growing species for seasonal protection on disturbed or denuded areas. **PURPOSE** • To reduce storm water runoff velocity and maintain sheet flow • To protect the soil surface from erosion • To promote infiltration of runoff into the soil **APPLICATION** Any completed graded area such as bare area, slope surfaces and areas meant to be vegetated permanently.

JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

Item BMPs Coding	PRACTICES
KH	**KAWALAN HAKISAN** ***(EROSION CONTROL)***
KH-3	**HYDROSEEDING**  **DEFINITION** Hydroseeding or may also be called hydromulching (if no seed is applied) is a mechanical method with forced water of applying seed, fertilizer, and mulch to land in one step in order to re-vegetate. **PURPOSE** To temporarily protect exposed soils from erosion. **APPLICATION** • On any cleared soil surface where vegetative cover is needed which includes diversions berms and embankment, dams, temporary sediment basins, temporary road banks, and topsoil stockpiles. • Where areas need temporary stabilization before final stabilization is installed. • On disturbed areas that will be re-disturbed after a period of extended inactivity.

JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

Item BMPs Coding	PRACTICES
KH	**KAWALAN HAKISAN** ***(EROSION CONTROL)***
KH-4	**RIP-RAP SLOPE PROTECTION**   **DEFINITION** A layer of stone placed on slopes or streambanks. **PURPOSE** To protect the soil surface from erosive forces and/or improve the stability of soil slopes. **APPLICATION** Where cut and fill slopes are subject to seepage, erosion, or weathering, particularly where conditions prohibit the establishment of vegetation.

JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

Item BMPs Coding	PRACTICES
KH	**KAWALAN HAKISAN** ***(EROSION CONTROL)***
KH - 5	**PLASTIC COVER**  **DEFINITION** Plastic cover material commonly made of polyethylene which is used in conjunction with weights, stakes or rebar temporarily placed on slopes or stockpiles.. **PURPOSE** To be used for temporary soil stabilization. To prevent infiltration of surface waters onto unstable slope. **APPLICATION** Any incomplete slope that is going to be attended to at a later time.

JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

Item BMPs Coding	PRACTICES
KH	**KAWALAN HAKISAN** ***(EROSION CONTROL)***
KH-6	**EROSION CONTROL BLANKET / MAT**   **DEFINITION** A protective blanket or soil stabilization mat used to assist in establishment of temporary or permanent vegetation on steep slopes, channels, or stream banks. **PURPOSE** To protect soil and hold seed and mulch in place on slopes and in channels so that vegetation can become well established. **APPLICATION** • On steep slopes where erosion hazards are high. • Where conventional seeding is likely to be too slow in providing adequate protective cover.

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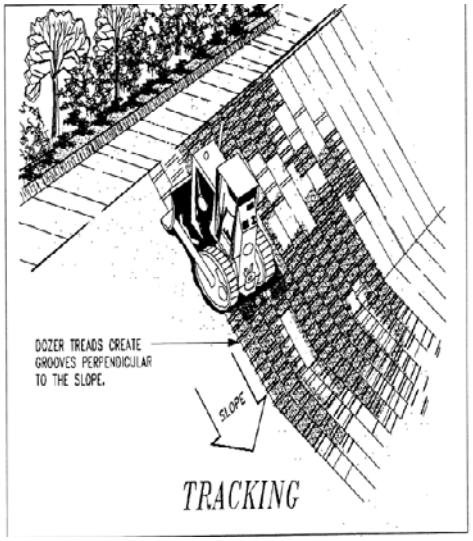
	• Concentrated flow areas. • All slopes steeper than 1:2, with a height of three metres or greater, and cuts and fills within stream buffers, should be stabilized with the appropriate erosion control matting or blanket. **Notes** • Turf reinforcement mats can be used to permanently reinforce grass in drainage ways during high flows. It consists a permanent, non-degradable, three-dimensional plastic structure that is filled with soil prior to planting • Nets are made of high tensile material woven into an open net which overlays mulch materials. • Blankets are made of interlocking fibers, typically held together by a biodegradable or photodegradable netting (for example, excelsior or straw blankets). They generally have lower tensile strength than nets, but cover the ground more completely. • Coir (coconut fiber) fabric comes as both nets and blankets.

JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

Item BMPs Coding	PRACTICES
KH	**KAWALAN HAKISAN** ***(EROSION CONTROL)***
KH-7	**SURFACE ROUGHENING**   **DEFINITION** The use of mechanized equipment to roughening the soil on a bare slope with grooves or terraces that run perpendicular to the direction of the slope. **PURPOSE** To loosen compacted soil on a slope that has been cleared and graded, cut, or filled as well as creates small grooves or terraces which reduce runoff velocity, trap seed, fertilizer and sediment, and provide more favourable conditions for vegetation establishment. **APPLICATION** • On slopes steeper than 1:3, • On excavated soil stockpiles • In areas with highly erodible soils. • Appropriate for soils that are frequently moved or disturbed.

JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

Item BMPs Coding	PRACTICES
KS	**KAWALAN SEDIMEN** ***(SEDIMENT CONTROL)***
KS -1	**SEDIMENT TRAP / BASIN**   **DEFINITION** A sediment trap is a temporary basin with a controlled release structure, formed by excavating or constructing an earthen embankment across a waterway or low drainage area. **PURPOSE** To detain sediment-laden runoff from small disturbed areas long enough to allow most of the sediment to settle out, thus protecting drainageways, properties, and rights of way from sedimentation. **APPLICATION** All points of discharges from any disturbed area at construction sites.

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Notes

Sediment traps can be constructed either by excavation or embankment. Each sediment trap is named according to the type of outlet that it has. The outlets shall be designed, constructed, and maintained so that sediment does not leave the trap and erosion of the outlet does not occur. There are four types of outlets for sediment traps namely :

1. **An Earth Outlet Sediment Trap**

The trap has a discharge point over or cut into natural ground.

2. **A Pipe Outlet Sediment Trap**

The outlet for the trap is though a perforated riser and a pipe through the embankment. The outlet pipe and riser shall be made of corrugated metal.

3. **A Stone Outlet Sediment Trap**

The outlet for the sediment trap shall consist of a crushed stone section of the embankment located at the low point in the basin. The outlet shall be constructed of crushed stone.

4. **A Storm Inlet Sediment Trap**

The trap has a discharge point through an opening in a storm drain inlet structure. This opening can either be the inlet opening or a temporary opening made by omitting bricks or blocks in the inlet.

JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

Item BMPs Coding	PRACTICES
KS	**KAWALAN SEDIMEN** ***(SEDIMENT CONTROL)***
KS -2	**CONSTRUCTION ENTRANCE STABILIZATION** **RUMBLE PAD** **JET-SPRAY** **WASH TROUGH**    **DEFINITION** A stabilized pad located at points where vehicles enter and leave a construction site. This control may take the form of tracking pads, boards, rumble strips, washes or through pool of water. **PURPOSE** To reduce or eliminate the amount of sediment transported onto public roadways by motor vehicles or runoff. **APPLICATION** • All points of construction ingress and egress. • Wherever traffic will be leaving a construction site and moving directly onto a public road or other paved area.

JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

Item BMPs Coding	PRACTICES
KS	**KAWALAN SEDIMEN** ***(SEDIMENT CONTROL)***
KS-3	**CONSTRUCTION ROAD STABILIZATION (GRAVELLING)**   **DEFINITION** A stabilized construction roadway is a temporary access connecting existing public roads to a remote construction area. **PURPOSE** • To provide a fixed stable route for the heavy construction traffic • To reduce erosion and subsequent re-grading of permanent roadbeds between the time of initial grading and final stabilization. • To stabilize soils on which a travel way is constructed of which may severely eroded and rutted created by vehicular tracking. **APPLICATION** • Applicable whenever travel ways are needed around poor soils area in a construction site of which the exposed soil is continually disturbed which eliminating the possibility of stabilization with vegetation. • Any anticipated extended period of exposure of roadways to surface runoff around the construction site.

JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

Item BMPs Coding	PRACTICES
KS	**KAWALAN SEDIMEN** ***(SEDIMENT CONTROL)***
KS-4	**FIBER ROLLS, COIRLOG OR WATTLES**   **DEFINITION** A fiber roll consists of straw, flax, coconut husk or other similar materials that are rolled and bound into a tight tubular roll and placed around the worksite perimeter and is referred to as wattles when placed on the face of slopes at regular intervals. **PURPOSE** • To intercept runoff. • To reduce runoff flow velocity. • To release the runoff as sheet flow. • To provide some removal of sediment from the runoff. **APPLICATION** • May be used along the top, face, and at grade breaks of exposed and erodible slopes to shorten slope length and spread runoff as sheet flow. • Install on disturbed areas that require immediate erosion protection. • Can be used along the perimeter of a project. • Unlined ditches as a check dam • Around temporary stockpiles

JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

Item BMPs Coding	PRACTICES
KS	**KAWALAN SEDIMEN** ***(SEDIMENT CONTROL)***
KS-5	**SILT FENCE**   **DEFINITION** A silt fence is a temporary sediment barrier made of woven, synthetic filtration fabric stretched across and attached to supporting wood or steel posts and entrenched. **PURPOSE** To prevent sediment carried by sheet flow from leaving the site and entering natural drainage ways or storm drainage systems by slowing storm water runoff and causing the deposition of sediment at the structure. Silt fencing encourages sheet flow and reduces the potential for development of rills and gullies. **APPLICATION** • Whenever to intercept, divert and capture sediment from sheet flow runoff. • Below the toe of exposed and erodible slopes. • Down-slope of exposed soil areas. • Around temporary stockpiles. • Along streams and channels.

JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

Item BMPs Coding	PRACTICES
KS	**KAWALAN SEDIMEN** ***(SEDIMENT CONTROL)***
KS-6	**TURBIDITY CURTAIN**   **DEFINITION** A flexible floating permeable fabric or geotextile materials namely turbidity curtains/ silt curtain/barriers installed in watercourses and is placed parallel or perpendicular to the direction of flow .This curtain does not extend to the bottom and weighted or anchored down to achieve closure while supported at the top through a flotation system.. **PURPOSE** • To provide sediment containment or sedimentation protection for a watercourse. • To prevent the migration of silt from a work site in a water environment into the larger body of water. • To reduce or eliminate debris and turbidity and minimize sediment transport from a disturbed area adjacent to or within a body of water

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	APPLICATION Where construction activities occurs within a water body or along its shoreline or directly adjacent to a waterway or water body and is of short duration. The activities includes but is not limited to bridge construction, rip rap placement, utility work, stream bank restoration and dredging. Turbidity or silt curtains are used in calm water surfaces and i**n most situations, turbidity curtains should not be installed across channel flows or flowing watercourses.**

JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

Item BMPs Coding	PRACTICES
KS	**KAWALAN SEDIMEN** ***(SEDIMENT CONTROL)***
KS-7	**BRUSH BARRIER / MATTING**    **DEFINITION** A temporary sediment barrier constructed at the perimeter of a disturbed area or on slope surface from the residue materials available from clearing and grubbing the site. **PURPOSE** By properly packed and stacked, the branches layer placed on the berm or terrace step and covering the slope as mat may function to intercept and retain sediment from disturbed areas of limited extent, preventing sediment from leaving the site. **APPLICATION** • Below disturbed areas subject to sheet and rill erosion, • Where the size of the drainage area is no greater than one-fourth of an acre per 100 feet of barrier length; the maximum slope length behind the barrier is 100 feet; and the maximum slope gradient behind the barrier is 50 percent (1:2). • On slope surfaces having gradient no steeper than 1:2.

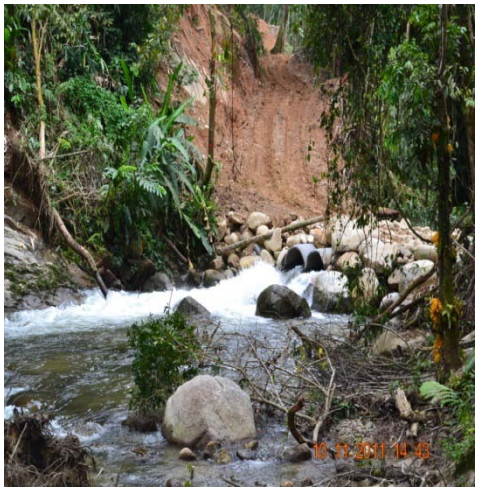
JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

Item BMPs Coding	PRACTICES
KS	**KAWALAN SEDIMEN** ***(SEDIMENT CONTROL)***
KS-8	**ACTIVE TREATMENT SYSTEM:** **PUMP, CHEMICAL DOSING / PAM POLYMER, FLOCCULATION & GEO-TUBE**   **DEFINITION** PAM is a water-soluble anionic polyacrylamide product are manufactured in various forms such as emulsion, liquid, powder and block used as soil stabilization and as a water treatment additive. Active treatment system refers to the water treatment process of which, the sediment-laden runoff collected in pond are pump into a container (geo-tube bag). In the process of pumping the turbid waters, online injection of site-specific polymers/PAM are introduce to the turbid waters in such a manner to facilitate mixing and reaction between the polymer and the suspended particles. Upon reaching into the geo-tube bag, the turbid waters will start to coagulate and subsequently flocculate or agglomerate stage proceeds in the pipe line and bag. A pulsing pump used to pressure the geo-tube bag leading to permeation of clear water through the geo-tube bag container wall or also known as dewatering bag leaving the sediment behind.

JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

	PURPOSE • To bind and stabilize soil particles. • To treat turbid water prior to discharge into receiving watercourse. **APPLICATION** • Any bare areas that need to be immediately stabilized. • Along the runoff conveyances that lead to sediment trapping device. • Recommended for use when treatment of sediment-laden runoff especially dealing with fine clay soil type using sediment basin BMPs are not effective enough to reduce the turbidity and suspended solids in the water prior to be discharge into the watercourse.

JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

Item BMPs Coding	PRACTICES
KS	**KAWALAN SEDIMEN** ***(SEDIMENT CONTROL)***
KS-9	**TEMPORARY ACCESS WATERWAY:** **BRIDGE AND CULVERT**   **DEFINITION** A temporary stream crossing is a structure placed across a waterway, which allows vehicles to cross the waterway during construction without entering the water, eliminating erosion and downstream sedimentation caused by the vehicles. **PURPOSE** • To provide safe, environmentally sound access across a waterway for construction equipment. • To prevent construction equipment from damaging the waterway, blocking fish migration, and tracking sediment and other pollutants into the waterway. **APPLICATION** Where heavy construction must be moved from one side of a stream channel to the other and equipment and construction vehicles will cross the stream repeatedly during construction.

JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

Item BMPs Coding	PRACTICES
KLL	**KAWALAN LAIN-LAIN** ***(OTHERS- GENERAL CONSTRUCTION CONTROL)***
KLL -1	**CONSTRUCTION FENCE**   **DEFINITION** Any approved fencing materials for construction sites. **PURPOSE** • To control access to the construction site pertaining to safety factors. • To delineate limits of construction and land disturbing activities. • To reflect site boundary. **APPLICATION** Applicable to all construction sites.

JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

KLL -2	**LIMITS OF CONSTRUCTION**  **DEFINITION** Identification marker or flagged area of all limits of construction as such along the perimeters of site, along all stream corridors or reserve to be preserved and around any other areas planned for preservation zones. **PURPOSE** • The planned disturbance and non-disturbance areas will be physically visible and known by all parties involves in the working area. • This will physically delineates areas and clearly limits the construction activities that can take place while limiting the disturbed area to the minimum deem necessary. **APPLICATION** • Any limits of working area at construction sites. • Non-disturbance areas around the construction sites. • Existing vegetation areas to be preserved.

JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

Item BMPs Coding	PRACTICES
KLL	**KAWALAN LAIN-LAIN**
KLL -3	**CONCRETE WASHOUT AREA**  **DEFINITION** A designated area for concrete washout area**.** **PURPOSE** To minimize or eliminate the discharge of concrete waste materials that normally contain high pH (alkaline base slurry) to the storm drain system or to watercourses. **APPLICATION** On construction projects where concrete is used as a construction material where the most common, the ready-mix concrete mixer truck and other concrete-coated equipment are washed on site.

JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

KLL-4	**VEHICLE AND EQUIPMENT FUELING AND MAINTENANCE**  **DEFINITION** Vehicle and equipment fueling and maintenance involves repair work, maintenance, fueling, and cleaning to be conducted in designated location. **PURPOSE** To trap and prevent any fluids used/collected/spills in these processes from being introduced to storm water flow. **APPLICATION** These procedures are applied on all construction sites where vehicle and equipment fueling and maintenance take place.

JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

KLL-5	**SOLID WASTE MANAGEMENT AREA**  **DEFINITION** These are procedures and practices to collect and dispose all construction sites waste at a designated location and containers/trash bin. **PURPOSE** To prevent the littering and mosquitoes breeding at site. To minimize or eliminate the discharge of pollutants such as leachates into the drainage system or to watercourses. **APPLICATION** Solid waste management practices are implemented on all construction projects that generate solid wastes.

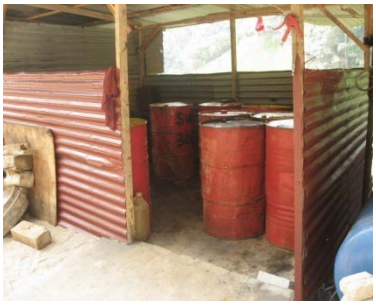
JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

Item BMPs Coding	PRACTICES
KLL	**KAWALAN LAIN-LAIN**
KLL-6	**SPOIL MANAGEMENT AREA**   **DEFINITION** Spoil management area is an area designated for landfill or disposal of earthen material that is surplus to requirements or unsuitable for reuse in fill and embankments (such as unsuitable rock and soil material) or material that is contaminated from construction site or dredged materials of a sediment basin that located onsite or relocated elsewhere as compacted fill. **PURPOSE** To establish a document and describe the systems and procedures developed to mitigate environmental impacts during handling, transportation, stockpiling and disposal of spoil materials such as develops or prepares a separate ESCP. **APPLICATION** Implemented in all projects that generates surplus of earthen materials, unsuitable materials and biomass. Spoil management area should be located on relatively flat land, in areas away from watercourse, away from threatened plant species and fauna habitat areas, away from steep slopes and gullies, upstream of sediment basins; and so that material is easily accessible and may be retrieved at any time.

JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

Item BMPs Coding	PRACTICES
KLL	**KAWALAN LAIN-LAIN**
KLL-7	**STABILIZED STAGING AREA**  **DEFINITION** A stabilized staging area consists of stripping topsoil and spreading a layer of gravel or crusher run or recycled concrete in the area to be used for a trailer, parking, storage, unloading/loading and temporary site office area. **PURPOSE** To stabilize staging area and reduces the likelihood that the vehicles most frequently entering a site are going to come in contact with mud. **APPLICATION** Implemented in all projects.

JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

Item BMPs Coding	PRACTICES
KLL	**KAWALAN LAIN-LAIN**
KLL-8	**SCHEDULE WASTE MANAGEMENT AREA**  **DEFINITION** A designated area for storage of hazardous waste**.** The procedures and practices and handling must conforms to **PURPOSE** To minimize or eliminate the discharge of pollutants from construction site generating hazardous waste to the storm drain system or to watercourses. To conform and comply the requirements stipulated in Environmental Quality Regulation (Scheduled Waste) 1989. **APPLICATION** Implemented in all projects that generates scheduled wastes.

JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

KLL-9

MATERIAL STORAGE CONTROL AND STOCKPILE MANAGEMENT

DEFINITION

A designated area for storage of materials and stockpiles such as soil, paving materials, Pesticides and herbicides, Fertilizers, Detergents, Plaster, Petroleum products such as fuel, oil, and grease, Asphalt and concrete components, Hazardous chemicals such as acids, lime, glues, adhesives, paints, solvents, and curing compounds, Concrete compounds and other materials that may be detrimental if released to the environment.

PURPOSE

To reduce or eliminate pollution potential of storm water and dusting from stockpiles.
To promote a good housekeeping practice.
To protect all stockpiles from storm water run-on using a perimeter sediment barrier such as berms, dikes, silt fences, or sandbag barriers, placing certain materials on pallets and cover.

APPLICATION

Implemented in all projects that having storage of constructions and stockpile materials.

JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

KLL-10	**SANITARY WASTE MANAGEMENT**  **DEFINITION** The use of temporary toilet at construction site approved by the authority. Procedures and practices **PURPOSE** To eliminate the discharge of construction site sanitary/septic waste materials directly to the storm drain system or to watercourses without firstly treated to a standard requirement and compliance. **APPLICATION** Sanitary/septic waste management practices are implemented on all construction sites that use temporary or portable sanitary/septic waste systems. Temporary sanitary facilities shall be located away from drainage facilities, watercourses, and from traffic circulation.

JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

Item BMPs Coding	PRACTICES
KLL	**KAWALAN LAIN-LAIN**
KLL-11	**SPILL PREVENTION AND SECONDARY CONTAINMENT**

DEFINITION

A second containment wall or embankment constructed with concrete or pre-fabricated metal that fencing around any petroleum base products with the containment capacity of 110 % the capacity of the said vessel or tank.

PURPOSE

To failsafe the primary containment (vessel or tank wall) that leaks or spills from flowing out further into drainageway or watercourses before recovering action to be taken.

APPLICATION

Applies to petroleum-based storage vessels, including fuel, and hydraulic fluid and certain tanks sited at jobsite..

JADUAL 2 : PENERANGAN BMPs
(BMPs DESCRIPTION)

KKL-12	**DUST CONTROL & STREET CLEANING**   **DEFINITION** Practices to collect and remove tracked sediments that have escaped the perimeter of the construction site. **PURPOSE** To prevent the sediment from entering a storm drain or watercourse as well as to prevent dust blowing and movement on construction sites and roads. **APPLICATION** Anywhere sediment is tracked from the project site onto public or private paved roads, typically at points of ingress and egress.