

P-15 Air Quality Management and Dust Control Plan

Aim and Objective				
The aim of P-15 Air Quality Management and Dust Control Plan (AQMDCP) is to address environmental and health risks associated with emissions from construction activities. This includes greenhouse gas (GHG) emissions, dust generation, and other particulate emissions				
Summary of Impacts and Risks				
<p>If not managed, dust and gaseous emissions have the potential to cause harm to workers, the community and pollute the environment. The potential impacts to air quality during construction include:</p> <ul style="list-style-type: none"> Greenhouse gas emissions from vehicles and machinery. Generation of dust from unsealed roads, excavations, aggregate and soil stockpiles impacting human health, drinking water supplies, flora and fauna. Gaseous emissions such as sulphur and nitric oxides impacting on human health. Complaints from the community. 				
Mitigation and Management Actions				
#	Issue or Risk	Action	Timing / Frequency	Responsibility
P-15-1.	Generation of dust from haulage trucks and operation of heavy construction equipment.	<ul style="list-style-type: none"> All vehicle movements will be confined to designated roads, access ways and work areas and must abide by speed limits as per P-11 Traffic Management Plan. To avoid traffic-related noise and dust, access roads will be constructed using the following material: <ul style="list-style-type: none"> Lot 1 <ul style="list-style-type: none"> Sta 0 ~7+500, 10~End Point: Aggregate only Sta 7+500~10+000(Vertical Slope <12%): Aggregate only Sta 7+600~7+840(Vertical Slope>=12%): Concrete or seal Lots 2 and 3 <ul style="list-style-type: none"> Concrete or seal Heavy vehicle movements through or in the vicinity of villages are restricted to the hours of 7:00 am to 6:00 pm. Loads are to be covered with impervious sheeting. Water spraying for dust suppression will be undertaken during dry and/or windy conditions, and for all construction activities likely to generate dust. During dry periods this will be a minimum of twice per day, or more frequently if dust is observed. Water for dust suppression can be sourced from: <ul style="list-style-type: none"> Treated effluent from the sewage treatment plant; Pumped water from the Tina River; From the concrete wastewater treatment plant at the Batch Plant (if dosed and tested to ensure circum-neutral pH). A machinery washing station will be installed at the end of Lot 1 for washing of heavy machinery and vehicles prior to entry to Core Land. The discharge from the washing station shall drain to a sediment detention pond to settle fines prior to discharge. Drainage water shall be discharged to land where possible. A wheel wash facility will be installed at the end of the Lot 1 access road to remove dirt and plant material from all vehicles entering and exiting Core Land. The wheel wash shall drain to a sediment detention pond to settle fines prior to discharge. Drainage water shall be diverted away from water bodies where possible. A concrete truck washing facility will be installed at the office Batch Plant site. The facility will include a hard stand area, treatment ponds and drainage. Drainage water shall be dosed to ensure circum-neutral pH, then discharged to land where possible (diverted away from water bodies). 	Throughout construction	HEC EHS Manager HEC Construction Manager
P-15-2.	Generation of dust from soil stockpiling/disposal sites/aggregate storage areas	<ul style="list-style-type: none"> Drop heights of materials being deposited into stockpiles shall not exceed 2 m. Spoil disposal sites shall be compacted, stabilised and revegetated upon completion to minimise dust generation. If dust is a continued nuisance, consider more regular watering and/or installation of temporary dust fencing. Topsoil and spoil are to be managed in accordance with C-9 Spoil and Topsoil Management Plan 	Throughout construction	HEC EHS Manager HEC Construction Manager
P-15-3.	Generation of dust during the operation of the crusher Plant and Batch Plant	<ul style="list-style-type: none"> All fixed plants should be sheltered from prevailing winds and screened from sensitive receptors. The screening components of any crusher plant will be designed to minimise fines (e.g. remove fine cut as early in the process as possible). <ul style="list-style-type: none"> The crusher plant being installed at Office site employs wet crushing method. Less than 60mm stones are first screened at the primary unit. Fine aggregate generated from the Jaw and Cone crusher is passed through screening and washing. Fine aggregates are not suspected to generate dust or free from dust, as it shall be washed(wet) before traversing through the conveyor. Where the aggregate requirements allow (i.e. where the quality of the crushed aggregate will not be impacted), a fine water spray (mist) system will be used to suppress dust at any fixed crusher plant and be used as required to suppress dust. The following dust suppression systems will be installed at various locations to minimise dust emissions: <ul style="list-style-type: none"> Water spray system will be installed at hopper, jaw and cone crusher facilities. Dust suppression machine such as fog cannon and high-pressure sprayer shall be run at least two times every morning and afternoon within the crusher plant site including the adjacent access road to suppress dust. Where possible, and if the aggregate requirements allow, the crusher plant selected shall employ wet crushing. Workers undertaking any dust generating activity or exposed to raised levels of dust shall wear appropriate PPE. 	Throughout construction	HEC EHS Manager HEC Construction Manager

P-15-4.	Generation of dust during drilling, blasting and tunnelling operations	<ul style="list-style-type: none"> • Drill and blasting activities are to be undertaken in accordance with the requirement of C-11 Drill and Blast Management Plan • For percussive drill rigs, wet drilling systems shall be used wherever practicable. If wet drilling is not practicable, use an enclosure (rubber or cloth shroud) around the drill hole to cover the area where the drill enters the ground. This control will be applied according to the manufacturers and operating instructions for drill rigs. Such enclosures shall be ducted to a dust collector. • To further reduce dust and particulate emissions from drilling and blasting operations blasting charges shall be covered with blasting mats and screens and disturbed areas shall be progressively stabilised as discrete sites are completed. • Safety procedures and PPE requirements when working in tunnels are detailed in P-8 Workplace Health and Safety Plan. 	Throughout construction	HEC EHS Manager
P-15-5.	Particulate emissions from vehicles, machinery, and generators	<ul style="list-style-type: none"> • Low sulphur fuels shall be used in machinery and vehicles where possible and fuel-efficient engines shall be used where feasible. • All vehicles and machinery shall be regularly maintained in accordance with Annex P-11-VI Equipment list & maintenance schedule. • Vehicles emitting excessive smoke or emissions shall be repaired or serviced immediately. • Diesel generators and power units shall be sited as far as practical from sensitive receptors (e.g. houses, schools, medical facilities, temples, and offices). • Unnecessary engine idling shall be prohibited, with all parked vehicles required to turn off the engine. • Plant and equipment used on an intermittent basis shall be shut down or throttled back when not in use. 	Throughout construction	HEC Construction Manager
P-15-6.	Construction related greenhouse gas emissions	<ul style="list-style-type: none"> • All vehicles and machinery shall be regularly maintained in accordance with a maintenance plan to be developed and implemented • The burning of vegetation or rubbish is prohibited. 	Throughout construction	HEC Construction Manager Construction Contractor
P-15-7.	Management of air quality in confined spaces	<ul style="list-style-type: none"> • Implementation of procedures for working in confined spaces as detailed in P-8 Workplace Health and Safety Plan • No entry to confined spaces is permitted unless necessary and the worker is appropriately trained and equipped with personal protective equipment (PPE). Air quality shall be monitored and maintained in all confined spaces (e.g. tunnels, penstocks), in accordance with good industry practice, including the provision of adequate ventilation. • Rescue equipment must be available at each location where working in confined spaces is undertaken. This equipment is to include: <ul style="list-style-type: none"> - Resuscitation apparatus and oxygen. - A set of suitable breathing apparatus and emergency breathing pack. - 2x safety harnesses with adequate length of rope – taking account of the workplace location. - Safe hand torches. - First aid equipment. - Firefighting apparatus. - Audible alarm for summoning help. - Means of communication with the surface observer. 	Throughout construction	HEC Construction Manager Construction Contractor
P-15-8.	Management of odours	<ul style="list-style-type: none"> • The WAC STP shall be operated and maintained in accordance with the STP ESIA in Annex P-12-II and the Operation and Maintenance Manual for the STP Annex P-12-III • Septic tanks and portable toilets shall be regularly emptied, and inspections shall be documented. • Washroom facilities at the Workers Camp, Offices, Work areas shall be cleaned daily and documented. 	Throughout construction	HEC Construction Manager Construction Contractor

Monitoring Requirements

#	Title	Description	Target / Performance Indicator	Timing / Frequency	Responsibility
P-15-A.	Generation of dust from project construction activities	Monitoring is to be undertaken in accordance with M-7 Air Quality and Noise Monitoring Plan	Dust free environment at all times during the construction period.	Please refer to M-7 Air Quality and Noise Monitoring Plan	

Supporting Documents

Annex	Name	Description
-	None	None