

INITIAL ENVIRONMENTAL EXAMINATION

RICE MILL PROJECT SHWE LIN BAN, MYANMAR



IEE REPORT

DATE: JUNE 2025

Prepared for

Golden Lace POSCO International Company Limited

Prepared by










Revised by



Environmental Compliance Consultancy Co., Ltd

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ရန်ကုန်တိုင်းဒေသကြီး၊ လှိုင်သာယာမြို့နယ်၊ ရွှေလင်ပန်းစက်မှုဇုန်၊ မြေတိုင်းရပ်ကွက်အမှတ် (၂၅)၊ မြေကွက်အမှတ် (၃၂၂ - ၃၂၃)၊ မြေဧရိယာ (၃.၃၈) ဧက ပေါ်ရှိ Golden Lace DAEWOO Co., Ltd. မှ ပေါင်းဆန်နှင့် အဆင့်မြင့်ဆန်ဖြူများ ထုတ်လုပ်ရောင်းချခြင်းလုပ်ငန်းအတွက်တင်ပြလာသည့် ကနဦး ပတ်ဝန်းကျင်ဆန်းစစ်ခြင်း (Initial Environmental Examination – IEE) အစီရင်ခံစာအပေါ်စိစစ်သုံးသပ်သည့် သဘောထားမှတ်ချက်အား ပြန်ကြားခြင်း

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	ပြန်လည်တင်ပြချက်	စာမျက်နှာ
၁။	ကတိကဝတ်			
	အစီရင်ခံစာတွင် စီမံကိန်းအဆိုပြုသူသည် ကတိကဝတ်အားထည့်သွင်းဖော်ပြထားခြင်းမရှိသည်ကို စိစစ်တွေ့ရှိပါသည်။	<p>ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ထုံးလုပ်နည်း အပိုဒ် ၃၅ အရ စီမံကိန်းအဆိုပြုသူနှင့် အစီရင်ခံစာရေးသားပြုစုသူမှ အောက်ပါ ကတိကဝတ်များ ထည့်သွင်းဖော်ပြရန်-</p> <ul style="list-style-type: none"> • ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းသည် တိကျမှုနှင့် ပြည့်စုံမှုရှိကြောင်း၊ • ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းကို ဤလုပ်ထုံးလုပ်နည်းအပါအဝင် သက်ဆိုင်ရာ ဥပဒေများကို တိကျစွာလိုက်နာ၍ ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းကို ဆောင်ရွက်ထားကြောင်း၊ • စီမံကိန်းမှ ကနဦးပတ်ဝန်းကျင် ဆန်းစစ်ခြင်း အစီရင်ခံစာပါ ကတိကဝတ်၊ ပတ်ဝန်းကျင် ထိခိုက်မှုလျှော့ချရေးလုပ်ငန်းများနှင့် အစီအစဉ်များကို အပြည့်အဝ အစဉ်အမြဲ လိုက်နာဆောင်ရွက်မည်ဖြစ်ကြောင်း၊ 	<ul style="list-style-type: none"> • စီမံကိန်းအဆိုပြုသူ၏ ပါဝင်ရမည့် ကတိ ကဝတ် ကတိပြုလွှာ အား အစီရင်ခံစာအတွင်း ထည့်သွင်း တင်ပြထားပါသည်။ 	

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	ပြန်လည်တင်ပြချက်	စာမျက်နှာ
၂။	အကျဉ်းချုပ်အစီရင်ခံစာ			
	အစီရင်ခံစာတွင်မြန်မာ/အင်္ဂလိပ်နှစ်ဘာသာဖြင့်ပြုစုထားသောအကျဉ်းချုပ်အစီရင်ခံစာအား ထည့်သွင်း ဖော်ပြထားခြင်း မရှိ သည်ကို စိစစ်တွေ့ရှိပါသည်။	<p>မြန်မာ/အင်္ဂလိပ် နှစ်ဘာသာဖြင့်ပြုစုထားသော အကျဉ်းချုပ် အစီရင်ခံစာတွင် အစီရင်ခံစာ တစ်ခုလုံးအား လွှမ်းခြုံဖော်ပြရန်၊ အပိုင်း (Chapter) အလိုက် အဓိကအချက်များနှင့် အောက်ဖော်ပြပါအချက်များအား ထည့်သွင်း ဖော်ပြရန် -</p> <ul style="list-style-type: none"> • စီမံကိန်းအကြောင်းအရာဖော်ပြချက်၊ • မူဝါဒ၊ ဥပဒေနှင့် အဖွဲ့အစည်းဆိုင်ရာ မူဘောင်၊ • စီမံကိန်းအနီး ပတ်ဝန်းကျင် အကြောင်း အရာဖော်ပြချက်၊ • ပတ်ဝန်းကျင်အပေါ် သက်ရောက်မှုများ ဆန်းစစ်ခြင်းနှင့် လျော့နည်းစေရေး ဆောင်ရွက်မည့်နည်းလမ်းများ၊ • ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်နှင့် စောင့်ကြပ်ကြည့်ရှုမည့်အစီအစဉ်များ၊ • ဘေးအန္တရာယ်ကာကွယ်ရေးအစီအစဉ်၊ • အများပြည်သူနှင့် ညှိနှိုင်းဆွေးနွေးထားရှိမှု၊ • စီမံကိန်းကြောင့် ထိခိုက်ခံစားရသည့် ဒေသခံပြည်သူများ အတွက် ဆောင်ရွက်ပေးမည့် ဒေသဖွံ့ဖြိုးရေးအစီအစဉ်။ 	<ul style="list-style-type: none"> • ထည့်သွင်းရမည့် ခေါင်းစဉ် အလိုက် အကျဉ်းချုပ် အစီရင်ခံစာ(မြန်မာ/အင်္ဂလိပ်) နှစ်ဘာသာ အား အခန်း (၁) တွင် တင်ပြထားပါ သည်။ 	(၁)

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	ပြန်လည်တင်ပြချက်	စာမျက်နှာ
၃။	စီမံကိန်းအကြောင်းအရာဖော်ပြချက်			
	အဆိုပါစီမံကိန်းပိုင်ရှင်၏ အကြောင်းအရာ များ (ကုမ္ပဏီအမည်၊ လိပ်စာ၊ ဖုန်းနံပါတ်၊ ဝက်ဆိုက်)တို့အား ဖော်ပြထားကြောင်း စိစစ်တွေ့ရှိရပါသည်။	<ul style="list-style-type: none"> သဘောထားမှတ်ချက်ပေးရန် မရှိပါ။ 	<ul style="list-style-type: none"> 	
	ENVIRON Myanmar Co., Ltd မှ ပတ်ဝန်းကျင်နှင့် လူမှုရေး ဆိုင်ရာ ကျွမ်းကျင်သူ တစ်ဦးချင်း၏ ပညာရပ်ဆိုင်ရာ အရည်အချင်းများ၊ တာဝန်ယူသည့် အပိုင်းများ အား ဖော်ပြထားကြောင်း စိစစ်တွေ့ရှိ ပါသည်။	<ul style="list-style-type: none"> ENVIRON Myanmar Co., Ltd မှ ပတ်ဝန်းကျင်နှင့် လူမှုရေး ဆိုင်ရာ ကျွမ်းကျင်သူတစ်ဦးချင်း၏ အတွေ့အကြုံ များကို ထည့်သွင်း ဖော်ပြရန်၊ 	<ul style="list-style-type: none"> IEE ရေးသားသော အဖွဲ့ ဖြစ်သော Environ နှင့် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဦးစီးဌာန၏ ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းအစီရင်ခံစာအပေါ် စိစစ်တွေ့ရှိ ချက်နှင့် သုံးသပ် အကြံပြုချက်များအား ပြန်လည်တင်ပြသည့် EnvCC အဖွဲ့၏ အချက် အလက်များ အား အခန်း ၂-၃ တွင် တင်ပြ ထားပါသည်။ 	(၂-၇)
	<ul style="list-style-type: none"> အစီရင်ခံစာတွင် သိုလှောင်ရုံ (၂) ရုံ တည်ဆောက်ရန် လျာထားကြောင်း၊ တည်ဆောက်ရန်ကြာချိန်၊ တည်ဆောက်မှုဆိုင်ရာ အဓိကအလုပ်များ၊ တစ်ရက် 	<ul style="list-style-type: none"> လုပ်ငန်းတည်နေရာနှင့် မြေနေရာ အကျယ်အဝန်း (GIS (သို့မဟုတ်) အခြားနည်းပညာ အသုံးပြုထားသော ကိုဩဒိနိတ် အမှတ်များ ပါဝင်သော ရှင်းလင်း 	<ul style="list-style-type: none"> အခန်း ၄-၂ တွင် ဖြည့်စွက် တင်ပြထားပါသည်။ 	(၄-၁)

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	ပြန်လည်တင်ပြချက်	စာမျက်နှာ
	<p>လျှင် ထုတ်လုပ်မှုပမာဏ၊ တည်နေရာ၊ အနီးပတ်ဝန်းကျင်အခြေအနေ၊ အကျယ်အဝန်း၊ ရာသီဥတု အခြေ အနေ၊ လူမှုပတ်ဝန်းကျင် အခြေအနေ၊ ကုန်ထုတ်လုပ်သည့်နေရာအနီးရှိ အဆောက်အဦပြု Layout Plan၊ ကုန်ထုတ်လုပ်ခြင်း ဖြစ်စဉ်အဆင့် ဆင့်အား ယေဘုယျ ဖော်ပြထား ကြောင်း၊</p> <ul style="list-style-type: none"> • စာမျက်နှာ (၁၄) Whitening Process တွင် ဖွဲ့များထွက်ရှိပြီး ထိုဖွဲ့များအား တိရစ္ဆာန်အစာအဖြစ် အသုံးပြု မည်ဖြစ်ကြောင်း၊ ဆန်ညိုများအား ရေဖြန်းကြောင်း၊ ဆန်ကွဲများအား ဆန်မှုန့် ပြုလုပ်ကြောင်း၊ • ထွက်ရှိလာသော အရည်အသွေးပြည့် ဆန်များအား ချိန်တွယ် ထုပ်ပိုး တံဆိပ် ရိုက်နှိပ်ကြောင်း၊ ကုန်ချော များအား သိုလှောင်ရုံတွင် သိုလှောင်ထားကြောင်း၊ လျှပ်စစ် ဓာတ်အား ပြတ်တောက်ခြင်း ဖြစ်ပေါ်ပါက အရံအဖြစ် ဒီဇယ် အင်ဂျင် မီးစက် (၃) လုံး (500kWhr/ 250kWhr/ 	<p>တိကျသည့် မြေပုံအပါအဝင်) အား ထည့်သွင်းဖော်ပြရန်၊</p> <ul style="list-style-type: none"> • စက်ရုံ၏ Process Design၊ လည်ပတ်ပုံ များကို Schematic/ Cross Section Diagram များဖြင့် ဖော်ပြပေးပါရန်၊ • စီမံကိန်းကာလအတွက် အသုံးပြုသော စက်ယန္တရား များစာရင်း တို့ကို ဖော်ပြရန်၊ • စီမံကိန်းနှင့်သက်ဆိုင်သော ရင်းနှီးမြှုပ်နှံမှု ဆိုင်ရာအချက်အလက် များအား ဖော်ပြ ရန်၊ • ကုန်ထုတ်လုပ်သည့် နည်းလမ်းအဆင့် ဆင့်အား အသေးစိတ် ရေးသားဖော်ပြရန်၊ • စာမျက်နှာ (၁၄) Whitening Process တွင် ဖွဲ့များထွက်ရှိမှု၊ စပါးခွံများထွက် ရှိမှုနှင့် ပတ်သက်၍ ဆက်လက်ဆောင်ရွက်သည့် အခြေအနေများ၊ အစီအစဉ်များ၊ ရေဖြန်း 	<ul style="list-style-type: none"> • စက်ရုံ၏ Process Design၊ လည်ပတ်ပုံ များကို Diagram များဖြင့် အခန်း ၄-၅-၂၊ ပုံ ၄-၇ တွင် တင်ပြထားပါသည်။ • စီမံကိန်းကာလအတွက် အသုံး ပြုသော စက်ယန္တရား များ စာရင်းအား အခန်း ၄.၇.၆ တွင် တင်ပြထားပါသည်။ • ရင်းနှီးမြှုပ်နှံမှု ဆိုင်ရာ အချက် အလက် များအား အခန်း ၄-၆ တွင် တင်ပြထားပါသည်။ • ကုန်ထုတ်လုပ်သည့် နည်းလမ်း အဆင့်ဆင့်အား အခန်း ၄-၅-၂ တွင် တင်ပြထားပါသည်။ • ဆန်စက်စီမံကိန်းသည် ဆန်လုံး ညိုအား ဝယ်ယူပြီး သန့်စင် အောင် ဆန်ဖွတ်ခြင်း ဖြစ်ပါ သဖြင့် စပါးခွံထွက်ရှိမှုမရှိပါ။ 	<p>(၄-၁၃)</p> <p>(၄-၂၂)</p> <p>(၄-၁၆)</p> <p>(၄-၁၃)</p>

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	ပြန်လည်တင်ပြချက်	စာမျက်နှာ
	<p>130kWhr) အား အသုံး ပြုမည် ဖြစ်ကြောင်း၊</p> <ul style="list-style-type: none"> ကုန်ပစ္စည်းများ သယ်ယူပို့ဆောင်မှု အခြေအနေ၊ ရယူသုံးစွဲသည့် ရေ အရင်းအမြစ်၊ ဝန်ထမ်းများအတွက် နေ့စဉ် အသုံးပြု သည့် ရေပမာဏ၊ လုပ်ငန်းလည်ပတ်ချိန်၊ တည်ဆောက် ရေး ကာလတွင် အလုပ်သမား အရေ အတွက် (၂၉) ဦး၊ လုပ်ငန်း လည်ပတ် သည့် ကာလတွင် အလုပ်သမား အရေအတွက် (၄၀) ဦးအား ခန့်ထား မည် ဖြစ်ကြောင်း၊ စာမျက်နှာ (၂၀) တွင် အဆိုပြုစ ဝီမံကိန်းအား Myanmar Daewoo International Co., Ltd. & Golden Lace Co., Ltd. တို့ဖြင့် ဖွဲ့စည်း ထားသော Joint Venture ကုမ္ပဏီတစ်ခုအဖြစ် လုပ်ငန်း ဆောင်ရွက်မည်ဖြစ်ကြောင်း စိစစ် တွေ့ရှိပါသည်။ 	<p>ခြင်းအတွက် အသုံးပြုရသည့် ရေပမာဏ၊ ဆန်ကွဲများအား ဆန်မှုန့်ပြုလုပ် ပြီးနောက် ဆက်လက်ဆောင်ရွက်သည့် အခြေအနေ များ၊ အစီအစဉ်များ၊ အရောင်တင်ခြင်း အဆင့်တွင် အသုံးပြုသော အရောင် တင်သည့် အစီအစဉ်၊ အရောင်တင်ဆေး အမျိုးအစား များအား ထည့်သွင်းဖော်ပြရန်၊</p> <ul style="list-style-type: none"> ထုပ်ပိုးပြီး ကုန်ချောများအား တံဆိပ် ရိုက်နှိပ် ခြင်းဆိုင်ရာ အချက် အလက်များ (အသုံးပြုသည့်စက်အမျိုးအစား၊ အသုံး ပြုသည့် ဆေးအမျိုးအစားစသည်) အား ထည့်သွင်း ဖော်ပြရန်၊ 	<p>Whitening Process တွင် ဖွဲ့နုများနှင့် ဆန်အကျိုးအကြေ များသာထွက်ရှိပြီး ဒေသခံ ဝယ်ယူသူများထံ တိုက်ရိုက် ရောင်းချခြင်း ဖြစ်ပါသဖြင့် ဆန်မှုန့်များ ထုတ်လုပ်ခြင်း မရှိပါကြောင်းနှင့် အရောင် တင်သည့်အဆင့်တွင် စား သောက်ကုန် ဖြစ်သည့် အားလျော်စွာ ဆန်သားများ အားအဆင့်ဆင့်ပွတ်တိုက်ခြင်း ဖြစ်ပြီး မည်သည့်အရောင် တင်ဆေးကိုမျှ သုံးစွဲခြင်း မရှိ ပါကြောင်း တင်ပြအပ်ပါသည်။</p> <ul style="list-style-type: none"> ကုန်ချောဆန်ဖြူများအား ထုတ်ပိုးသည့်ဆန်အိတ်များမှာ လည်း ပြင်ပဆံဆိပ်ရိုက် သည့် နေရာတွင် အပ်နှံဆောင်ရွက် ခြင်းဖြစ်ပါကြောင်းနှင့် စက်ရုံ 	

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	ပြန်လည်တင်ပြချက်	စာမျက်နှာ
		<ul style="list-style-type: none"> စွမ်းအင်သုံးစွဲမှုအနေဖြင့် နေ့စဉ်လျှပ်စစ်ဓာတ်အား အသုံးပြု သည့် ပမာဏ၊ နှစ်စဉ်လောင်စာဆီလိုအပ်ချက်ပမာဏ၊သို့ လှောင်ထားရှိမှုအခြေအနေများအား ထည့်သွင်းဖော်ပြရန်၊ ကုန်ကြမ်းရယူမည့်အရင်းအမြစ်နှင့် ကုန်ကြမ်းသိုလှောင်ထားရှိမှုနှင့် ပတ်သက်၍ သိုလှောင်မည့်ပမာဏနှင့် ဆောင်ရွက်မည့် အစီအစဉ်၊ သိုလှောင် ထားသည့် အခြေအနေတွင် ဆန်များအား မှိုတက်ခြင်း၊ ပိုးဝင်ခြင်း၊ အနံ့ထွက်ခြင်းများ မဖြစ်စေရန် ဆောင်ရွက်ထားရှိမှု အခြေအနေများကို ထည့်သွင်းဖော်ပြရန်၊ 	<p>တွင် တံဆိပ်ရိုက်နှိပ်ခြင်းမပြုပါကြောင်း တင်ပြအပ်ပါသည်။</p> <ul style="list-style-type: none"> စွမ်းအင်သုံးစွဲမှုအနေဖြင့် နေ့စဉ်လျှပ်စစ်ဓာတ်အား အသုံးပြု သည့် ပမာဏ အား အခန်း ၄.၇.၁ တွင်လည်းကောင်း၊ လောင်စာဆီလိုအပ်ချက်နှင့် သိုလှောင်ထားရှိမှု အခြေအနေအား အခန်း ၄.၇.၂ တွင် လည်းကောင်း တင်ပြထားပါသည်။ ကုန်ကြမ်းအနေဖြင့် ဆန်လုံးညိုအား ဒေသတွင်း ရောင်းချသူများ ထံမှ တိုက်ရိုက်ဝယ်ယူခြင်းဖြစ်သည့်အတွက် ကုန်သည်များမှ စက်ရုံသို့ ကားများဖြင့် လာရောက်ချပေးပါသည်။ သိုလှောင်ထားသည့် အခြေအနေတွင်ဆန်များအားမှိုတက် 	<p>(၄-၁၇)</p> <p>(၄-၂၀)</p> <p>(၄-၁၆)</p>

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	ပြန်လည်တင်ပြချက်	စာမျက်နှာ
		<ul style="list-style-type: none"> ထုတ်လုပ်သည့် ထုတ်ကုန်အမျိုးအစား (Product) နှင့် အခြားထွက်ကုန်အမျိုးအစား (By-product) ၏ ထွက်ရှိမှု ပမာဏများ၊ သိုလှောင်ထားရှိမှု အခြေအနေအား ထည့်သွင်း ဖော်ပြရန်၊ သုံးစွဲမည့် ဓာတုပစ္စည်းများ လိုအပ်ချက် ပမာဏနှင့် ရယူ သုံးစွဲမှု၊ သိုလှောင်ထားရှိမှုအခြေအနေအား ထည့်သွင်းဖော်ပြ ရန်၊ 	<p>ခြင်း၊ ပိုးဝင်ခြင်း၊ အနံ့ ထွက်ခြင်းများ မဖြစ်စေရန် ဆောင်ရွက်ထားရှိမှု အခြေအနေများကိုအခန်း ၄.၅.၃ တွင် တင်ပြထားပါသည်။</p> <ul style="list-style-type: none"> ကုန်ကြမ်း၊ ဘေးထွက်ပစ္စည်းနှင့် ကုန်ချောများအား သိုလှောင်မှု အခြေအနေအား အခန်း ၄.၇.၃ တွင် တင်ပြထားပါသည်။ ဓာတုဗေဒဆေးလိုအပ်ချက်အနေဖြင့် ဆန်ပိုးများကျရောက်ပါက Aluminum Phosphid 56% ဆေးပြားဖြင့် မှိုင်းတိုက်ခြင်းအား တတိယ အဖွဲ့အစည်းဖြင့် ဆောင်ရွက်ပါသဖြင့် သိုလှောင်ထားရှိမှု မရှိပါကြောင်းတင်ပြအပ်ပါသည်။ အဆိုပါဆေးနှင့် ပတ်သက် 	(၄-၂၁)

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	ပြန်လည်တင်ပြချက်	စာမျက်နှာ
		<ul style="list-style-type: none"> • အဓိကစွန့်ထုတ်အခိုးအငွေ့၊ အမှုန်အမျိုးအစားနှင့် စီမံခန့်ခွဲမှု စနစ်၊ စွန့်ပစ်အစိုင်အခဲ (Solid Waste) ထွက်ရှိမှုပမာဏ၊ အမျိုးအစား အလိုက်ပါဝင်မှုနှင့် စီမံခန့်ခွဲမှုစနစ်၊ စွန့်ထုတ်အရည် (Effluent)/စွန့်ပစ်ရေ (Wastewater) ထွက်ရှိမှုပမာဏ နှင့် စီမံခန့်ခွဲမှုစနစ်၊ လုပ်ငန်း၏ စွန့်ပစ်ပစ္စည်း (အစိုင်အခဲ၊ အရည်၊ အခိုးအငွေ့) စီမံခန့်ခွဲမှု အကျဉ်းချုပ်၊ စွန့်ပစ်ပစ္စည်းများ ထွက်ရှိမှု နှင့် စွန့်ထုတ်မည့်လုပ်ငန်းစဉ်တို့ကို ရှင်းလင်းစွာ ဖော်ပြသည့် ကားချပ်များနှင့် အညွှန်းများဖြင့်ဖော်ပြရန်၊ 	<p>သည့် Material Safety Data Sheet အား နောက်ဆက်တွဲ (c)တွင် တင်ပြ ထားပါသည်။</p> <ul style="list-style-type: none"> • Generation of Waste and Management နှင့် ထွက်ရှိနိုင်မည့် ပမာအား အခန်း ၄.၈ တွင် တင်ပြထားပြီး စီမံခန့်ခွဲမှု အနေဖြင့် စီမံကိန်းလုပ်ဆောင်မှုမှ ထွက်ရှိသည့် ဖွဲ့စည်းဆန်ကွဲများအား တိရိစ္ဆာန်အစာ အဖြစ်လည်းကောင်း၊ မော်တော်ယာဉ်နှင့် စက်များမှ စွန့်ပစ်ဆီများကိုလည်း ကုန်သည်များမှ စက်ရုံ အရောက် လာရောက်ဝယ်ယူ ကြခြင်း ဖြစ်ပါသဖြင့် စွန့်ပစ် ပစ္စည်း အနေဖြင့် အလုပ်သမား များ၏ စားကြွင်း စားကျန်များနှင့် မိသားစု ထွက်ရှိပြီး YCDC နှင့် ချိတ်ဆက် သိမ်းဆည်းပါ 	(၄-၂၈)

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	ပြန်လည်တင်ပြချက်	စာမျက်နှာ
		<ul style="list-style-type: none"> စီးဆင်းရေ (Storm Water) နှင့် ရေမြောင်း စနစ် (Drainage System) အခြေအနေများဆောင်ရွက်ထားရှိမှုအခြေအနေများ အား ကားချပ်များနှင့် အညွှန်းများဖြင့် ဖော်ပြရန်၊ ဆန်ပေါင်းရာတွင် အသုံးပြုသည့် နည်းစနစ်အား ထည့်သွင်း ဖော်ပြရန်၊ စီမံကိန်း၏ တည်ဆောက်ခြင်း၊ လုပ်ငန်းလည်ပတ်ခြင်းနှင့် ပိတ်သိမ်းသည့် ကာလများ အတွက် စတင်/ပြီးစီးမည့် ရက်များ၊ ကြာမြင့်မည့်ကာလများကို ခန့်မှန်း ဖော်ပြထားသော စီမံကိန်း အကောင် အထည် 	<p>ကြောင်း အား ရှင်းလင်း တင်ပြထားပါသည်။</p> <ul style="list-style-type: none"> စီးဆင်းရေအနေဖြင့်မိုးရေနှင့် အစားအသောက် ဆေးကြောခြင်းများမှ ရေဆိုးများထွက်ရှိပါသဖြင့် ဆောင်ရွက်ထားရှိသည့် ရေမြောင်းစနစ်အား ကားချပ်နှင့် တစ်ကွ ပုံ ၄-၁၀ တွင် တင်ပြထားပါသည်။ ပေါင်းဆန်ကိုလည်း စက်ရုံတွင် ဆောင်ရွက်ခြင်းမရှိဘဲ ဒေသခံများထံမှ တိုက်ရိုက် ဝယ်ယူ၍ ဆန်ဖွတ်ခြင်းအား ဆောင်ရွက်ခြင်းဖြစ်ပါသည်။ စီမံကိန်းဆောင်ရွက်သည့် အချိန် ဇယားအား လုပ်ငန်းလည်ပတ်ချိန်ထိ အခန်း ၄-၁၀ တွင် တင်ပြထားပါသည်။ ပိတ်သိမ်းသည့် ကာလအား ခန့်မှန်းမဖော်ပြနိုင်ပါကြောင်း နှင့် 	<p>(၄-၃၀)</p> <p>(၄-၃၂)</p>

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	ပြန်လည်တင်ပြချက်	စာမျက်နှာ
		<p>ဖော်မည့် အချိန်ဇယားအား ထည့်သွင်းဖော်ပြပေး ရန်၊</p> <ul style="list-style-type: none"> စီမံကိန်း၏ လက်ရှိအခြေအနေနှင့် အကောင်အထည်ဖော်ဆောင်ရွက်နေသည့် အချိန်ဇယား၊ အခြေအနေများအား ထည့်သွင်းဖော်ပြရန်။ 	<p>စက်ရုံအား နှစ်(၅၀) ဆောင်ရွက်ခွင့်ရရှိထားပါကြောင်း တင်ပြအပ်ပါသည်။</p>	
၄။	မူဝါဒ၊ ဥပဒေနှင့် အဖွဲ့အစည်းဆိုင်ရာမူဘောင်			
	<p>အစီရင်ခံစာတွင် စီမံကိန်းနှင့် သက်ဆိုင် သည့် ဥပဒေ၊ နည်းဥပဒေ၊ လုပ်ထုံး လုပ်နည်းများ၊ နိုင်ငံတကာစံချိန်စံညွှန်း များ စသည်တို့ကို ထည့်သွင်းဖော်ပြ ထားခြင်းမရှိသည်ကို စိစစ်တွေ့ရှိပါသည်။</p>	<ul style="list-style-type: none"> အစီရင်ခံစာတွင် စီမံကိန်းနှင့်သက်ဆိုင်သည့် ဥပဒေ၊ နည်းဥပဒေများမှ သက်ဆိုင်ရာပုဒ်မ၊ အပိုဒ်များကိုညွှန်း၍ ထည့်သွင်းဖော်ပြရန်နှင့် လုပ်ထုံးလုပ်နည်း များ၊ နိုင်ငံတကာစံချိန်စံညွှန်းများ၊ကျန်းမာရေးနှင့် ဘေးအန္တရာယ်ဆိုင်ရာ လမ်းညွှန်ချက် စသည်တို့ကို ထည့်သွင်း ဖော်ပြရန်နှင့် လိုက်နာဆောင်ရွက်မည် ဖြစ်ကြောင်း ကတိကဝတ်ကိုလည်း ထည့်သွင်းဖော်ပြရန်။ 	<ul style="list-style-type: none"> အစီရင်ခံစာ၏ အခန်း (၃) တွင် ပြည့်စုံစွာ ဖြည့်စွက်တင်ပြထားပါသည်။ 	(၃-၁ မှ ၃-၃၀)

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	ပြန်လည်တင်ပြချက်	စာမျက်နှာ
၅။	စီမံကိန်းအနီးပတ်ဝန်းကျင် အကြောင်းအရာဖော်ပြချက်			
	<p>အစီရင်ခံစာတွင် စီမံကိန်းသည်</p> <ul style="list-style-type: none"> • ပင်လယ်ရေမျက်နှာပြင်အမြင့် (၄.၃) မီတာ၊ ရာသီဥတု အခြေအနေ၊ မိုးရေချိန်၊ မြေဆီလွှာအခြေအနေ၊ လှိုင်မြစ်၊ ဧရာဝတီမြစ်များ၏ ရေမြေ သဘာဝအခြေအနေများနှင့် ပတ်ဝန်း ကျင်ရေမြေသဘာဝများ၊ အဝီစိ ရေတွင်းမှရေ အား စက်မှုဇုန်များ အတွက် ရေအရင်းအမြစ်အဖြစ် အသုံး ပြုကြောင်း၊ မြေငလျင် အခြေအနေများအား ဖော်ပြထား ကြောင်း၊ • ပတ်ဝန်းကျင်လေအရည်အသွေး တိုင်းတာရာတွင် တိုင်းတာသည့် ရက်၊ အချိန်၊ နေရာနှင့် တိုင်းတာ ရရှိသည့် တန်ဖိုးများအား WHO စံချိန်စံညွှန်းနှင့် နှိုင်းယှဉ်ဖော်ပြ ထားပြီး လုပ်ငန်းလည်ပတ်သည့် အချိန်၊ တိုင်းတာရရှိ သည့် SO₂ တန်ဖိုးသည် 	<ul style="list-style-type: none"> • စက်ရုံစီမံကိန်း၏ အနီးဝန်းကျင်ရှိ ယဉ်ကျေးမှုဆိုင်ရာ အစိတ် အပိုင်းဖြစ်သော ဘာသာရေးဆိုင်ရာ အချက်အလက်များ၊ ရိုးရာ ဓလေ့များကို ဖြည့်စွက်ဖော်ပြ ပေးရန်၊ • အစီရင်ခံစာတွင် နေစဉ်ရေသုံးစွဲမှုပမာဏ အား ဖော်ပြရန်၊ • စွန့်ပစ်အပိုင်အခဲများအနေဖြင့် ဆန်မှုန့် များ၊ ဝန်ထမ်းသုံးအမှိုက်များ ထွက်ရှိပြီး စွန့်ပစ်ပစ္စည်းစီမံခန့်ခွဲမှုများအား ဖော်ပြ ရန်၊ 	<ul style="list-style-type: none"> • စီမံကိန်းဧရိယာသည် စက်မှုဇုန် ဖြစ်သည့် အားလျော်စွာ Cultural Heritage များ အနေဖြင့် မတွေ့ရှိရပဲ ရှေးဟောင်း ဘုရား(၂)ဆူအဖြစ် အောင် မြေသာယာစေတီနှင့် ရွှေရင် အေးဘုရားတို့အား အကွာ အဝေးနှင့်တစ်ကွ အခန်း (၅-၄) တွင် တင်ပြ ထားပါသည်။ • နေ့စဉ်ရေသုံးစွဲမှုအခြေအနေ အား အခန်း ၄.၇.၅ တွင် တင်ပြထားပါသည်။ • အခန်း ၄.၈ တွင် တင်ပြ ထားရှိပါသည်။ 	<p>(၅-၂)</p> <p>(၄-၂၂)</p> <p>(၄-၂၈)</p>

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	ပြန်လည်တင်ပြချက်	စာမျက်နှာ
	<p>သတ်မှတ်စံချိန်စံညွှန်း ထက် ကျော်လွန်နေကြောင်း၊</p> <ul style="list-style-type: none"> • စာမျက်နှာ (၃၀-၃၁)တွင် စက်ရုံ ဝင်ပေါက်နှင့် စက်ရုံ နောက်ဘက် တို့ရှိအဝီစိရေတွင်းများမှ မြေအောက် ရေအရည်အသွေးအား တိုင်းတာ၍ တိုင်းတာရရှိသည့် တန်ဖိုးများအား WHO စံချိန်စံညွှန်းနှင့် နှိုင်းယှဉ် ဖော်ပြ ထားကြောင်း၊ • ဆူညံသံအား တိုင်းတာသည့် နေ့ရက်၊ အချိန်၊ တိုင်းတာ ရရှိသည့် တန်ဖိုး များအား WHO စံချိန်စံညွှန်းနှင့် နှိုင်းယှဉ်ဖော်ပြထားကြောင်း၊ • Appendix (9,10,11) တွင် မြေ အရည်အသွေးတိုင်းတာမှု အခြေ အနေများကို ဓာတ်ခွဲတိုင်းတာ ရရှိသည့် တန်ဖိုးများဖြင့် ဖော်ပြ ထားကြောင်း၊ • စီမံကိန်းသည် စက်မှုဇုန်နယ်မြေ ဖြစ်သောကြောင့် အပင် နှင့် တိရစ္ဆာန်များအပေါ် သက်ရောက်မှု 	<ul style="list-style-type: none"> • စွန့်ပစ်ရေအရည်အသွေး တိုင်းတာချက် များအား ဖော်ပြရန်နှင့် တိုင်းတာ ရရှိသည့် တန်ဖိုးများအား ပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန် ချက်များနှင့် နိုင်ငံ တကာစံချိန်စံညွှန်း များနှင့် နှိုင်းယှဉ်ဖော်ပြရန်၊ 	<ul style="list-style-type: none"> • စွန့်ပစ်ရေအရည်အသွေး ပါဝင်သည့် ပတ်ဝန်းကျင် ဆိုင်ရာအရည်အသွေး (လေ/ရေ/မြေ) အရည် အသွေး ဆန်းစစ်ချက် အား update ဆောင်ရွက် ထားရှိ ပြီး တိုင်းတာရရှိသည့် တန်ဖိုးများအား ပတ်ဝန်း ကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန် ချက်များနှင့် နိုင်ငံ တကာ စံချိန်စံညွှန်း များနှင့် နှိုင်းယှဉ်၍ အခန်း ၅.၁.၆ တွင် တင်ပြထားပါသည်။ 	(၅-၅)

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	ပြန်လည်တင်ပြချက်	စာမျက်နှာ
	<p>အခြေအနေများအား ထောက်ပံ့ ထားမှု မရှိကြောင်း ဖော်ပြထားပြီး လှိုင်သာယာမြို့နယ်ရှိ လူမှုစီးပွားရေး ဆိုင်ရာ အချက် အလက်များ၊ အနီးဝန်းကျင်ရှိ လူမှုရေး၊ ပညာရေး၊ အသက်မွေးဝမ်းကြောင်းမှု အခြေ အနေများအား ဖော်ပြ ထားကြောင်း စိစစ်တွေ့ရှိပါသည်။</p>			
၆။	ပတ်ဝန်းကျင်အပေါ်သက်ရောက်မှုများဆန်းစစ်ခြင်းနှင့်လျော့နည်းစေရေးဆောင်ရွက်မည့်နည်းလမ်းများ၊			
	<ul style="list-style-type: none"> • အစီရင်ခံစာ စာမျက်နှာ (၄၄) မှ (၅၈) အထိ တည်ဆောက် ရေးကာလနှင့် ပတ်သက်၍ မြေဆီလွှာနှင့် မြေအောက် ရေ ထိခိုက်နိုင်မှု၊ လေအရည်အသွေး၊ အမှုန်အမွှာထုတ်လွှတ်မှုများနှင့် ပတ်သက်၍ ပြင်းထန်မှုအနည်းငယ်သာလျှင် ရှိကြောင်း ထိခိုက်မှုဆန်းစစ်ခြင်း မက်ထရစ်ကို အသုံးပြု တွက်ချက်၍ ဖော်ပြထားကြောင်း၊ အစိုင်အခဲစွန့်ပစ်ပစ္စည်း ထွက်ရှိမှု တစ်ရက်လျှင် (၉.၅) တန်၊ အစားအစာ 	<ul style="list-style-type: none"> • ထုတ်လုပ်ခြင်းလုပ်ငန်းမှ ထွက်ရှိလာသည့် စွန့်ပစ်ရေများအား စွန့်ပစ်မှုမပြုမီ ပြန်လည်သန့်စင်သည့် နည်းစနစ်အား ထည့်သွင်း ဖော်ပြရန်၊ စက်ရုံမှထုတ်လွှတ်သည့် စွန့်ပစ်ပစ္စည်း (အရည်၊ အစိုင်အခဲ) သန့်စင်ရန် အသုံးပြုမည့်နည်းစနစ်ကို အသေးစိတ် ဖော်ပြရန်၊ • အဆိုပါထုတ်လုပ်ခြင်းလုပ်ငန်းကြောင့် ထွက်ရှိလာသည့် အမှုန် အမွှားများအား ပတ်ဝန်းကျင်သို့ ပျံ့လွင့်ခြင်းမရှိစေရန် 	<ul style="list-style-type: none"> • ထုတ်လုပ်ခြင်းလုပ်ငန်းမှ စွန့်ပစ်ရေ အနေဖြင့် ထွက်ရှိမှုမှာ လွန်စွာနည်းပါးသည့် အတွက်စွန့်ပစ်ရေသန့်စင်သည့် နည်းစနစ်အနေဖြင့် အသုံးပြုဆောင်ရွက်ထားခြင်းမရှိပါကြောင်းတင်ပြအပ်ပါသည်။ • ဆန်လုံးညိုနှင့် ပေါင်းဆန်းအား သန့်စင်ခြင်းမှ ထွက်ရှိလာသည့် ဖွဲနုခွံများမှာ စက်မှ ဖွဲနု 	

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	ပြန်လည်တင်ပြချက်	စာမျက်နှာ
	<p>စွန့်ပစ်ပစ္စည်းထွက်ရှိမှု တစ်ရက်လျှင် (၁၅.၅) ကီလိုဂရမ်၊ မိလ္လာစွန့်ပစ်ပစ္စည်း ထွက်ရှိမှု တစ်ရက်လျှင် (၇.၈၃၅) လီတာ ဖြစ်ကြောင်း တွက်ချက်ဖော်ပြထားပြီး တည်ဆောက်ရေး ကာလမှ ထွက်ရှိ လာသော အန္တရာယ်ရှိသော စွန့်ပစ် ပစ္စည်းများ၊ အန္တရာယ်မရှိသော အစိုင် အခဲ စွန့်ပစ်ပစ္စည်း များနှင့် အန္တရာယ် မရှိသော စွန့်ပစ်အရည်များနှင့် ပတ်သက်၍ အလယ်အလတ်ပြင်းထန် နိုင်ကြောင်း၊ ဆူညံသံ၊ ဂေဟစနစ်အပေါ် ထိခိုက်နိုင်မှု အနည်းငယ်သာ ရှိနိုင် ကြောင်း၊ လူမှု- စီးပွားအပေါ်ထိခိုက်နိုင်မှု၊ ဒေသခံပြည်သူ များ၏ ဘေးကင်း လုံခြုံရေး အခြေအနေ၊ အလုပ်သမားများ ၏ ဘေးကင်းလုံခြုံရေး အခြေအနေ များကို ဖော်ပြထားကြောင်း၊</p> <ul style="list-style-type: none"> • အစီရင်ခံစာ၏ စာမျက်နှာ (၅၈) မှ (၆၇) အထိ လုပ်ငန်းလည်ပတ် ထုတ်လုပ်မှု ကာလနှင့်ပတ်သက်သော လေအရည် အသွေး ထိခိုက်နိုင်မှု အလယ်အလတ် ရှိပါကြောင်း၊ မြေဆီလွှာနှင့် မြေအောက် 	<p>ဆောင်ရွက်ထားသည့် အခြေအနေများ အား စီမံကိန်း အကြောင်းအရာ ဖော်ပြ ချက်အခန်းတွင် ထည့်သွင်းဖော်ပြရန်၊</p> <ul style="list-style-type: none"> • လေအရည်အသွေးတိုင်းတာမှုအား လုပ်ငန်းခွင်အတွင်း တိုင်းတာရန်၊ တိုင်းတာ ရရှိသည့် တန်ဖိုးများအား ပတ်ဝန်းကျင် ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များနှင့် နိုင်ငံတကာ စံချိန် စံညွှန်းများနှင့် နှိုင်းယှဉ်ဖော်ပြရန်၊ • လေအရည်အသွေးတိုင်းတာရရှိသည့် တန်ဖိုး (SO₂) သည် သတ်မှတ်စံချိန် စံညွှန်းတန်ဖိုးထက် ကျော်လွန်နေသော ကြောင့် သတ်မှတ်စံချိန်စံညွှန်း အတွင်း 	<p>သိုလှောင်သည့် အခန်းသို့ တိုက်ရိုက်မှုထုတ်ပါသည်။ အဆိုပါအခန်းမှ ဖွဲ့နုများအား ထုတ်ပိုးရာတွင် အမှုန်အမွှား များထွက်ရှိသော်လည်း ဖွဲ့နု အားလုံးအား လှည်းကျင်းပြီး အားလုံး အပြောင် ထုတ်ပိုး ၍ ကုန်သည်များအား ရောင်းချ ခြင်း ဖြစ်ပါသည်။</p> <ul style="list-style-type: none"> • လေအရည်အသွေးတိုင်းတာမှု အား update ထပ်မံ တိုင်းတာရာ၍ အခန်း ၅.၁.၆ တွင် တင်ပြထားပါသည်။ • လေအရည်အသွေးတိုင်းတာရ ရှိသည့် တန်ဖိုး (SO₂) သည် သတ်မှတ်စံချိန် စံညွှန်းတန်ဖိုး ထက် ကျော်လွန်နေခြင်းမှာ စက်မှုဇုန်အတွင်း အချိန်နှင့် အမျှ ဝင်ထွက်သယ်ယူ ပို့ 	<p>(၅-၅)</p> <p>(၆-၁)</p>

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	ပြန်လည်တင်ပြချက်	စာမျက်နှာ
	<p>ရေအား ညစ်ညမ်းနိုင်ချေရှိသော အရင်းအမြစ်များ၊ သက်ရောက်နိုင်ချေများ၊ စွန့်ပစ်အရည်နှင့် အစိုင်အခဲ များဆိုင်ရာ အချက်များ၊ မိလ္လာစွန့်ပစ်ပစ္စည်း ထွက်ရှိမှု တစ်ရက်လျှင် (၁၂၆) လီတာ၊ အစားအစာစွန့်ပစ်ပစ္စည်း ထွက်ရှိမှု တစ်ရက်လျှင် (၁၈) ကီလိုဂရမ်ဖြစ်ပြီး စွန့်ပစ်ပစ္စည်း များကြောင့် ထိခိုက်နိုင်မှု၊ ဂေဟစနစ်အပေါ် ထိခိုက်နိုင်မှုများသည် ပြင်းထန်မှုအနည်းငယ်သာလျှင် ရှိကြောင်း၊</p>	<p>ဝင်ရန် ဆောင်ရွက်မည့်အစီအစဉ် များအား ထည့်သွင်းဖော်ပြရန်၊</p> <ul style="list-style-type: none"> စက်ရုံမှ အမှန်တကယ်ဆောင်ရွက်မည့် စွန့်ပစ်ပစ္စည်းစီမံခန့်ခွဲမှု စနစ် (Collection, Storage, Transportation, Treatment, Disposal) နှင့်ပတ်သက်၍ အသေးစိတ် ဖော်ပြရန်။ 	<p>ဆောင်နေကြသည့် ကားကြီး/ ကားငယ်များမှ ဆီလောင် ကျွမ်းမှုမှ ထွက်ရှိခြင်း ဖြစ်ပါကြောင်းအား ရှင်းလင်း တင်ပြထားပါသည်။ စီမံကိန်း ဆောင်ရွက်မှုကြောင့် SO2 ထွက်ရှိမှု နည်းနိုင်သမျှနည်းရန် လျှော့ချနိုင်မည့်နည်းလမ်းများအား အခန်း (၆) တွင် ထည့်သွင်း တင်ပြထား ပါသည်။</p>	
	<ul style="list-style-type: none"> အစီရင်ခံစာ စာမျက်နှာ (၆၇) မှ (၆၉) အထိ လူမှုစီးပွားအပေါ် ထိခိုက်နိုင်မှုနှင့် ပတ်သက်၍ ယာဉ်ယန္တရားများ သွားလာ မှု၊ ဒေသတွင်းစီးပွားရေး၊ ကလေး လုပ်သားများ၊ ဒေသခံပြည်သူများ၏ ဘေးကင်းလုံခြုံရေး၊ လုပ်ငန်းခွင် ဘေးကင်းမှုများတွင် ထိခိုက်နိုင်မှုမှာ ပြင်းထန်မှုမြင့်မားနိုင်ကြောင်း၊ အစီရင်ခံစာ စာမျက်နှာ (၆၉) မှ (၇၂) အထိ စီမံကိန်းပိတ်သိမ်း သည့် ကာလ နှင့်ပတ်သက်၍ လေအရည်အသွေး၊ 			

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	ပြန်လည်တင်ပြချက်	စာမျက်နှာ
	<p>မြေဆီလွှာ နှင့် မြေအောက်ရေ၊ စွန့်ပစ်ပစ္စည်းများ (အန္တရာယ်ရှိသော စွန့်ပစ်ပစ္စည်း၊ စွန့်ပစ်အရည်၊ စွန့်ပစ်အစိုင်အခဲ)၊ ဆူညံသံ၊ ဂေဟစနစ်၊ စွမ်းအင်အသုံးချမှု၊ လူမှုစီးပွားစသည့်တို့အပေါ် တွင် ထိခိုက်နိုင်မှုများအား ဖော်ပြထားကြောင်း၊</p> <ul style="list-style-type: none"> • တည်ဆောက်ရေးကာလအတွက် လျော့ချမည့်နည်းလမ်းများ နှင့်ပတ်သက်၍ စာမျက်နှာ (၇၄) မှ (၈၃) အထိ ပတ်ဝန်းကျင် ထိခိုက်မှု လျော့ချရေး အစီအစဉ်ကို အဓိကထိခိုက်နိုင်မှုများနှင့် လျော့ချမည့်စီမံချက်များအား ဇယားဖြင့် ဖော်ပြထားကြောင်း၊ • လုပ်ငန်းလည်ပတ်ထုတ်လုပ်သည့်ကာလ အတွက် လျော့ချမည့် နည်းလမ်းများ နှင့် ပတ်သက်၍ စာမျက်နှာ (၈၄) မှ (၉၀) အထိ ပတ်ဝန်းကျင်နှင့် လူမှုရေးဆိုင်ရာ များအတွက် ထိခိုက်မှု လျော့ချရေး အစီအစဉ်အား အဓိကထိခိုက်နိုင်မှုများ နှင့် လျော့ချမည့်စီမံချက်တို့အား ဇယား ဖြင့် ဖော်ပြထားကြောင်း၊ 			

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	ပြန်လည်တင်ပြချက်	စာမျက်နှာ
	<ul style="list-style-type: none"> စီမံကိန်းရှိ အလုပ်သမားများအား လုပ်ငန်းခွင်ကာကွယ်ရေးသုံးပစ္စည်းများ စီစဉ်ဆောင်ရွက်ပေးသွားမည်ဖြစ်ကြောင်း ဖော်ပြထားသည်ကို စိစစ်တွေ့ရှိရပါ သည်။ 			
၇။	ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်နှင့် စောင့်ကြပ်ကြည့်ရှုမည့်အစီအစဉ်များ			
	<p>စာမျက်နှာ (၇၃-၉၀) တွင် ပတ်ဝန်းကျင် စီမံခန့်ခွဲမှုအစီအစဉ်တွင် လုပ်ငန်းချဲ့ထွင်ခြင်း/တည်ဆောက်ခြင်း၊ လုပ်ငန်းလည်ပတ်ခြင်းနှင့် လုပ်ငန်းပိတ်သိမ်းခြင်းများရှိ အဆင့်တစ်ခုစီး၏ ထိခိုက်မှုများနှင့် လျော့ချခြင်းဆိုင်ရာများအား ဖော်ပြထားကြောင်း စိစစ်တွေ့ရှိပါသည်။</p>	<ul style="list-style-type: none"> ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်တွင် ဖော်ပြထားသော လုပ်ငန်းများအား လိုက်နာဆောင်ရွက်ခြင်း၊ တာဝန်ယူခြင်း၊ အစီရင်ခံခြင်း၊ ကြီးကြပ်ခြင်းနှင့် စောင့်ကြပ်ကြည့်ရှုခြင်းဆိုင်ရာလုပ်ငန်းများအတွက် တာဝန်ယူဆောင်ရွက်မည့် ဌာနခွဲတွင် ပါဝင်သူတစ်ဦးချင်းစီနှင့် ၎င်းတို့၏ သက်ဆိုင်ရာတာဝန်များ၊ ရာထူးများအား ဖော်ပြ၍ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်အား လုပ်ငန်းတစ်ခု ချင်းစီ အလိုက် တာဝန်ယူဆောင်ရွက်မည့်အဖွဲ့အစည်း ဆိုင်ရာ မူဘောင်များ စသည်တို့ကို ထည့်သွင်း ဖော်ပြရန်၊ 	<ul style="list-style-type: none"> အခန်း (၇) တွင် ဆောက်လုပ်ခြင်းနှင့် လုပ်ငန်းလည်ပတ်ခြင်းဆိုင်ရာအလိုက် တာဝန်ယူမည့် အဖွဲ့အစည်းနှင့် တစ်ဦးချင်း၏တာဝန်များအား ဖြည့်စွက်တင်ပြထားပါသည်။ 	(၇-၁)

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	ပြန်လည်တင်ပြချက်	စာမျက်နှာ
		ဆောင်ရွက်မည့် အစီအစဉ်တို့ကို ထည့်သွင်းဖော်ပြရန်။	မတော်တဆမှုများ ဖြစ်ပွားနိုင်ပါသဖြင့် Contingency/ Emergency Response Plan၊ Fire Management Plan များအားရေးဆွဲထားရှိ၍ အခန်း ၇-၃ တွင် တင်ပြထားရှိသည့် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်အား အကောင်အထည်ဖော်ဆောင်ရွက်ရန် ရံပုံငွေမှ ကျခံသုံးစွဲသွားပါမည့်အကြောင်းအား ရှင်းလင်း တင်ပြအပ်ပါသည်။ စီမံကိန်း ဧရိယာအနေဖြင့် ပန်းလှိုင်မြစ်နှင့် နီးသည့် အတွက် ရေကြီးမှုအခြေအနေ အားတွေ့ကြုံနိုင်ပါသဖြင့် Disaster management plan အား အခန်း ၇.၈ တွင် ဖြည့်စွက်တင်ပြ အပ်ပါသည်။	

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	ပြန်လည်တင်ပြချက်	စာမျက်နှာ
	အစီရင်ခံစာတွင် စောင့်ကြပ်ကြည့်ရှုခြင်းနှင့်ပတ်သက်၍ ဖော်ပြ ထားခြင်းမရှိသည်ကို စိစစ်တွေ့ရှိပါသည်။	<ul style="list-style-type: none"> • စောင့်ကြပ်ကြည့်ရှုခြင်းအစီအစဉ်ကို ဖော်ပြရာတွင် တည်ဆောက် ရေးကာလ၊ လည်ပတ်ထုတ်လုပ်ခြင်း ကာလနှင့် ပိတ်သိမ်းခြင်းကာလတို့အတွက် ကျန်းမာရေးနှင့် လုပ်ငန်းခွင် ဘေးအန္တရာယ် ကင်းရှင်းရေး၊ လေအရည်အသွေး၊ ဆူညံသံ၊ ရေအရည်အသွေး၊ မြေအရည် အသွေး၊ စွန့်ပစ်ပစ္စည်း(အစိုင်အခဲ/အရည်)၊ မီးဘေးအန္တရာယ်၊ ပတ်ဝန်းကျင်ဆိုင်ရာ စာရင်းစစ်များနှင့်ပတ်သက်၍ စောင့်ကြပ်ကြည့်ရှုမည့်နေရာ၊ ခန့်မှန်းကုန်ကျစရိတ်၊ အကြိမ်ရေ၊ Parameter များကို အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များနှင့် နိုင်ငံတကာအဖွဲ့အစည်းများ၏ စံချိန်စံညွှန်း၊ သတ်မှတ်ချက်များနှင့် နှိုင်းယှဉ်၍ စောင့်ကြပ်ကြည့်ရှုသွားမည်ဖြစ်ကြောင်း ဖော်ပြပေးရန်၊ • စောင့်ကြပ်ကြည့်ရှုခြင်းအစီရင်ခံစာအား ပတ်ဝန်းကျင် ထိန်းသိမ်းရေးဦးစီးဌာနသို့ (၆) လ တစ်ကြိမ် တင်ပြရန် လိုအပ်သဖြင့် 	<ul style="list-style-type: none"> • စောင့်ကြပ်ကြည့်ရှုခြင်းအစီအစဉ်အား ညွှန်ကြားထားသည့် အတိုင်း အခန်း (၈) တွင် ပြန်လည် ဖြည့်စွက် တင်ပြ ထားပါသည်။ • စောင့်ကြပ်ကြည့်ရှုခြင်းအစီရင်ခံစာကို ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီး ဌာန သို့ 	<p>(၈-၁)</p> <p>(၈-၅)</p>

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	ပြန်လည်တင်ပြချက်	စာမျက်နှာ
		<p>အစီရင်ခံစာအားတင်ပြမည့် အစီအစဉ်ကို ဖော်ပြရန်၊</p> <ul style="list-style-type: none"> • ထိုအစီရင်ခံစာတွင် အောက်ပါအချက်များ ပါဝင်ရမည်- <ul style="list-style-type: none"> ◦ လုပ်ငန်းခွင်တွင်း စောင့်ကြပ်ကြည့်ရှုခြင်းနှင့် စစ်ဆေးခြင်း၊ • လုပ်ငန်းခွင်တွင်း စောင့်ကြပ်ကြည့်ရှုခြင်းနှင့် စစ်ဆေးခြင်း၊ • အသေးအဖွဲ့ဖြစ်ရပ်များ၊ မတော်တဆမှုနှင့် အရေးပေါ်ကိစ္စရပ်များအား အစီရင်ခံခြင်း၊ • လုပ်ဆောင်ချက်များကို ညွှန်းကိန်းများဖြင့် သတ်မှတ်တိုင်းတာခြင်းနှင့် ယင်းညွှန်းကိန်းများအတိုင်း အရေးယူဆောင်ရွက်ခြင်း၊ • စောင့်ကြပ်ကြည့်ရှုမည့်အစီအစဉ်တွင် ဆောင်ရွက်မည့် အဖွဲ့အစည်း၊ ဖွဲ့စည်းပုံတို့အား ထည့်သွင်းဖော်ပြရန်၊ • လေ့ကျင့်သင်တန်းပေးခြင်းအစီအစဉ်များ၊ 	<p>တင်ပြမည့် အစီအစဉ်ကို အခန်း ၈-၁-၂ တွင် တင်ပြထားပါသည်။</p> <ul style="list-style-type: none"> • ထိုအစီရင်ခံစာတွင် ပါဝင်ရမည့် အချက်များအား အခန်း(၈-၁-၂) တွင် ဖြည့်စွက် တင်ပြ ထားပါသည်။ 	(၈-၅)

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	ပြန်လည်တင်ပြချက်	စာမျက်နှာ
၈။	ဘေးအန္တရာယ်ကာကွယ်ရေးအစီအစဉ်			
	<p>စာမျက်နှာ (၉၆) တွင် အရေးပေါ်အခြေအနေ တုန့်ပြန်မှုအစီအစဉ်နှင့် ပတ်သက်၍ အရေးပေါ်အခြေအနေတုန့်ပြန်မှုအဖွဲ့ ဖွဲ့စည်း၍ သင်တန်းပို့ချပြီး အဖွဲ့၏ လုပ်ငန်းတာဝန်များ၊ အခန်းကဏ္ဍများ နှင့် လျှင်မြန်ထိရောက်စွာ တုံ့ပြန်ဆောင်ရွက်သွားမည်ဖြစ်ကြောင်း၊ ကျန်းမာရေးအရေးပေါ်ကိစ္စများအတွက် ရှေးဦး သူနာပြု သင်တန်းများ ပို့ချပေး၍ ဆေးဝါးများ ထောက်ပံ့ပေးခြင်းနှင့် သာမန်ကျန်းမာရေး ကိစ္စများအတွက် ဆေးဝါးများနှင့် ရှေးဦး သူနာပြုဆေးသေတ္တာများ လုံလောက်စွာနှင့် အသင့်ထားရှိပေး သွားမည်ဖြစ်ကြောင်း၊ မီးဘေးအန္တရာယ်အတွက် အဆောက် အဦများ နှင့် အလုပ်နေရာများတွင် မီးသတ်ပိုက်များနှင့် Fire Alarm များ တပ်ဆင်ထားရှိမည် ဖြစ်ကြောင်း ထည့်သွင်းဖော်ပြ ထားသော် လည်း အကြံပြုချက်များအနေဖြင့် ဖော်ပြ ထားသည်ကို စိစစ်တွေ့ရှိရပါသည်။</p>	<ul style="list-style-type: none"> • အရေးပေါ် အခြေအနေတုန့်ပြန်မှု အစီအစဉ်၊ ကျန်းမာရေးနှင့် ဘေးအန္တရာယ် ကင်းရှင်းရေးအစီအစဉ်၊ မီးဘေးအန္တရာယ် ကာကွယ်ရေး နှင့် ဓာတုပစ္စည်းများ သိုလှောင်ခြင်း အစီအစဉ်များနှင့် ပတ်သက်၍ ဆောင်ရွက်မည့် လုပ်ငန်း စဉ်များ၊ စီမံဆောင်ရွက်ထားရှိမှု အခြေ အနေ၊ လုပ်ငန်းတာဝန်များဖြည့်စွက်၍ ဆောင်ရွက်သွားမည် ဖြစ်ကြောင်း ဖော်ပြ ရန်။ 	<ul style="list-style-type: none"> • အရေးပေါ် အခြေအနေ တုန့်ပြန်မှုအစီအစဉ်၊ ကျန်းမာရေးနှင့် ဘေး အန္တရာယ် ကင်းရှင်းရေး အစီအစဉ်၊ မီးဘေးအန္တရာယ် ကာကွယ်ရေး အစီအစဉ် များအား အခန်း ၇-၅ နှင့် ၇-၆ တွင် ဖြည့်စွက် တင်ပြထား ရှိပါသည်။ • ဓာတုဗေဒဆေးအနေဖြင့် ဆန်ပိုးကျရောက်ပါက Aluminum Phosphid 56% Tablet ဖြင့်မှိုင်းတိုက်ခြင်းအား တတိယအဖွဲ့အစည်းဖြင့် ဆောင်ရွက်ပါသည်။ အဆိုပါဆေးသုံးစွဲမှုအား အခန်း ၄.၅.၃ တွင် ရှင်းလင်းတင်ပြ ထားပါသည်။ 	<p>(၇-၂၈)</p> <p>(၄-၁၆)</p>

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	ပြန်လည်တင်ပြချက်	စာမျက်နှာ
၉။	အများပြည်သူနှင့် ညှိနှိုင်းဆွေးနွေးထားရှိမှု			
	စီမံကိန်းနှင့်ပတ်သက်ဆက်နွှယ်သူများအား တွေ့ဆုံခြင်းနှင့် ချပြခြင်း ခေါင်းစဉ်ဖြင့် စာမျက်နှာ (၉၇) တွင် ကျင်းပရသည့် ရည်ရွယ်ချက် များ၊ ဆန်းစစ်မှုဆောင်ရွက်သည့်အဖွဲ့သည် ထိခိုက်နိုင်ချေရှိသည့် နေရာများအား သွားရောက်ခဲ့ကြောင်း၊ စီမံကိန်းအနီးရွာသုံးရွာကျော်မှ သက်ဆိုင်သူများအား အချက်အလက်များ ကောက်ရန် နှင့် စီမံကိန်းဆိုင်ရာအချက်အလက်များအား ချပြရန် တွေ့ဆုံခဲ့ ကြောင်း၊ အမေးအဖြေများ ပြုလုပ်ခဲ့ကြောင်း၊ ချပြဆွေးနွေးသူများ၊ ကျင်းပသည့်နေရာ၊ တက်ရောက်သည့် အရေအတွက်၊ လိုက်နာ ဆောင်ရွက်မည့် အစီအစဉ်များ၊ ရှေ့ဆက်ဆောင်ရွက်မည့် အစီအစဉ် များအား ဖော်ပြထားကြောင်း စိစစ်တွေ့ရှိပါသည်။	<ul style="list-style-type: none"> စက်ရုံဝန်းကျင်ရှိအများပြည်သူ၏ ဆန္ဒ သဘောထားရယူရန် နှင့် အများပြည်သူ နှင့်တိုင်ပင်ဆွေးနွေးရာတွင် တက်ရောက်သည့် ဦးရေ၏ အသေးစိတ် စာရင်း၊ ဆွေးနွေးပြောကြားချက်၊ တောင်းဆိုချက်၊ ဆွေးနွေးမှုရလဒ်နှင့် ဆောင်ရွက်ပေးမည့် အစီအစဉ်တို့အား ဖော်ပြ၍ မှတ်တမ်း ဓါတ်ပုံများ၊ အမေး အဖြေ ပုံစံများဖြင့် ပူးတွဲဖော်ပြပေးရန်။ 	<ul style="list-style-type: none"> သက်ရောက်ခံ ပြည်သူများ၏ Concerns အား ထပ်မံခိုင်မာစေရန် တွေ့ဆုံမှု ထပ်မံဆောင်ရွက်ခဲ့ပြီး အခန်း (၉) တွင် ဖြည့်စွက်တင်ပြ ထားရှိပါသည်။ 	(၉-၁)
၁၀။	စီမံကိန်းကြောင့် ထိခိုက်ခံစားရသည့် ဒေသခံပြည်သူများအတွက် ဆောင်ရွက်ပေးမည့် ဒေသဖွံ့ဖြိုးရေးအစီအစဉ်			
	စီမံကိန်းကြောင့် ထိခိုက်ခံစားရသည့် ဒေသခံပြည်သူများအတွက်ဆောင်ရွက်ပေး	<ul style="list-style-type: none"> စီမံကိန်းအကောင်အထည်ဖော်မှုကြောင့် . ထိခိုက်ခံစားရသည့် ဒေသခံ ပြည်သူ 	<ul style="list-style-type: none"> CSR အစီအစဉ်အား အခန်း ၉.၅.၅ တွင် တင်ပြထား 	(၉-၁၄)

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	ပြန်လည်တင်ပြချက်	စာမျက်နှာ
	မည့် ဒေသဖွံ့ဖြိုးရေးအစီအစဉ်အား ဖော်ပြထားခြင်း မရှိကြောင်း စိစစ်တွေ့ရှိပါသည်။	တို့အတွက် ဒေသဖွံ့ဖြိုးရေးဆောင်ရွက်ပေးမည့် အစီအစဉ်နှင့် အသုံးပြုမည့် ရန်ပုံငွေလျာထားချက်များ၊ အဆိုပါ လျာထားချက်သည် လုံလောက်ခြင်းမရှိပါက စီမံ ဆောင်ရွက်ပေးမည့် အစီအစဉ် များကို ဖော်ပြရန်။	ပါသည်။ ရန်ပုံငွေ လျာထားချက်အနေဖြင့် စီမံကိန်းမှ ရရှိလာမည့် အကျိုးအမြတ်၏ ၂% အား လျာထားဆောင်ရွက်သွားမည်ဖြစ်ပြီး ဆောင်ရွက်ထားရှိမှုများအား တင်ပြထားပါသည်။	
၁၁။	အထွေထွေအကြံပြုချက်			
	<ul style="list-style-type: none"> EIA Procedure အပိုဒ် ၁၀၈ အရ စီမံကိန်းအဆိုပြုသူသည် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်၏ ဇယားပါအတိုင်း စောင့်ကြပ် ကြည့်ရှုမှု အစီရင်ခံစာကို ဝန်ကြီးဌာနသို့ (၆) လတစ်ကြိမ် တင်ပြရန်၊ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း အပိုဒ် ၃၇ အရ ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းအစီရင်ခံစာ (IEE) Soft copy ကိုပူးတွဲ တင်ပြရန်၊ ပြန်လည်ရေးဆွဲမည့် IEE အစီရင်ခံစာတွင် ယခုပေးပို့သော အကြံပြုချက် တစ်ခုချင်းစီအလိုက် ဖြေရှင်းချက်များကို အစီရင်ခံစာ၏ မည်သည့် အပိုင်း၊ စာမျက်နှာတွင် ရေးသားထားသည်ကို ဖော်ပြသည့် (Comment Response Table) ကို ဖော်ပြပေးရန်၊ ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းအစီရင်ခံစာကို ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း အပိုဒ် ၃၆ ပါ အစီအစဉ် အတိုင်း ရေးသားတင်ပြရန်။ 		<ul style="list-style-type: none"> လိုက်နာဆောင်ရွက်ပါမည်။ ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်း အစီရင်ခံစာ(IEE) Soft copy ကို ပူးတွဲတင်ပြပါ သည်။ ဤ Comment Response Table အား ပူးတွဲတင်ပြပါသည်။ အစီအစဉ် အတိုင်း ရေးသားတင်ပြထားပါသည်။ 	

Golden Lace POSCO International Co., Ltd.

Date: 15th May 2025

Attn: Director General
Environmental Conservation Department
Ministry of Natural Resources and Environmental Conservation
Office No.(58), Ottrathiri Township
Nay Pyi Taw, Myanmar

Subject: Initial Environmental Examination Report in regard to the Rice Processing Plant Project (Hlaing Thar Yar)

Dear Sir,

We refer to the captioned IEE, which was prepared and finalized by Environmental Compliance Consultancy Co., Ltd. in accordance with the Environmental Conservation Law, Rules and Procedures under the instructions of Ministry of Natural Resources and Environmental Conservation dated on February 27, 2015, and revised on November 5, 2017.

Intending to be legally bound hereby and financially liable to the Ministry of Natural Resources and Environmental Conservation hereunder, we:

Endorse and confirm to Ministry of Natural Resources and Environmental Conservation:

- a. the accuracy and completeness of the IEE,
- b. Confirm and undertake to Ministry of Natural Resources and Environmental Conservation that the EIAs have been prepared in strict compliance with applicable Environmental Conservation Law, Rules and Procedures including Environmental Impact Assessment Procedure: Paragraph 35 and 36 (2015), and other related laws and regulations for the type of project, and
- c. Confirm and undertake to Ministry of Natural Resources and Environmental Conservation that the project company established by **Golden Lace POSCO Int'l Co., Ltd.** in respect of the **Rice Processing Plant Project (Hlaing Thar Yar)** shall at all times comply fully with: (i) any and all commitments and obligations as set second in the IEE and (ii) any and all plans and the various components thereof, including without limitation, impact avoidance, mitigation, and remediation measures, and with respect to both (i) and (ii), including but not limited to such commitments, obligations, plans and measures as relate to the development, construction, commissioning, operation and maintenance of the project, and any circumstance in which work done or to be done, or services performed or to be performed, in connection with the project's development, construction, commissioning, operation and maintenance is carried out or intended or required to be carried out by any contractor, subcontractor or other party.

The issuance of this confirmation and undertaking has been duly authorized by all necessary corporate actions and a copy of the resolution of the Board of Directors authorizing it and the power of attorney explicitly granting signing authorization to the individual who has signed below are attached as schedules hereto.

Sincerely yours.,



Park Kyung Ho
Managing Director



■■■■■



Date: 15th May 2025

Ref: 2502038_GLPI_Commitment_EnvCC

Attn: Director General
Environmental Conservation Department
Ministry of Natural Resources and Environmental Conservation
Office No. (58), Ottrathiri Township
Nay Pyi Taw, Myanmar

Subject: Initial Environmental Examination (IEE) Report in regards to the Rice Mill Project of Golden Lace POSCO INTERNATIONAL CO., LTD in Hlaing Thar Yar Township, Yangon, Myanmar

Dear Sir,

We refer to the captioned IEE, which were finalized upon the comments of Environmental Conservation Department (ECD) by Environmental Compliance Consultancy Co., Ltd in accordance with the Environmental Conservation Law, Rules and Procedures under the instructions of Ministry of Natural Resources and Environmental Conservation dated on February 27, 2015, and revised on November 5, 2017.

Intending to be legally bound hereby and financially liable to the Ministry of Natural Resources and Environmental Conservation hereunder, we:

Endorse and confirm to Ministry of Natural Resources and Environmental Conservation

- a. The accuracy and completeness of the EIA,
- b. Confirm and undertake to Ministry of Natural Resources and Environmental Conservation that the IEE has been prepared in strict compliance with applicable Environmental Conservation Law, Rules and Procedures including Environmental Impact Assessment Procedure: Paragraph 35 (2015), and other related laws and regulations for the type of project,
- c. Comply fully with any and all commitments for Third-Party Organization.

The issuance of this confirmation and undertaking has been duly authorized by Environmental Compliance Consultancy Co., Ltd. who has signed below are attached as schedules hereto.

Sincerely yours,

Myat Mon Swe
Director/ Principle Consultant
Environmental Compliance Consultancy Co., Ltd.



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ACRONYMS AND ABBREVIATIONS

Name	Description
BOD	Biological Oxygen Demand
CO	Carbon monoxide
CO ₂	Carbon dioxide
COD	Chemical Oxygen Demand
CSR	Corporate Social Responsibility
CVL	Central Volcanic Line
dB(A)	Decibel (unit used to measure noise level)
DMH	Department of Meteorology and Hydrology
ECC	Environmental Conservation Certificate
ECD	Environmental Conservation Department
ECL	Environmental Conservation Law
EHS	Environmental Health & Safety
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
ERP	Emergency Response Plan
ESMP	Environmental and Social Management Plan
FAO	Food and Agriculture Organization
FIL	Foreign Investment Law
FSC	Forward Sales Contract
FTU	Formazin Turbidity Unit
GAD	General Administrative Department
GPS	Global Positioning System
IEE	Initial Environmental Examination
IFC	International Finance Cooperation
ILO	International Labor Organization
LED	Light-emitting Diode
M	Myanmar Farmers Association
MFSPEA	Myanmar Fertilizer, Seed and Pesticide Entrepreneurs Association
MIC	Myanmar Investment Commission
MIMU	Myanmar Information Management Unit
MOAI	Ministry of Agriculture and Irrigation

MONREC	Ministry of Natural Resources and Environmental Conservation
MOF	Ministry of Forestry
MPPA	Myanmar Paddy Producers Association
MRF	Myanmar Rice Federation
MRIA	Myanmar Rice Industry Association
MRMA	Myanmar Rice Processing Complexers Association
MRPTA	Myanmar Rice & Paddy Traders Association
NCEA	National Commission for Environmental Affairs
NTU	Nephelometric Turbidity Unit)
NO ₂	Nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
OHS	Occupational Safety and Health
PAP	Project Affected People
PM ₁₀	Particulate Matter less than 10 micron
PM _{2.5}	Particulate Matter less than 2.5 micron
PPE	Personal Protective Equipment
RSC	Rice Specialization Companies
SCADA	Supervisory Control and Data Acquisition
SIA	Social Impact Assessment
SO ₂	Sulphur dioxide
SS	Suspended Solids
TSP	Total Suspended Particulate
TSP	Trisodium Phosphate
TSS	Total Suspended Solids
UN	United Nations
UNREDD	United Nations Programme on Reducing Emissions from Deforestation and Forest Degradation
WRUD	Water Resources Utilization Department
WTO	World Trade Organization

အစီရင်ခံစာ အကျဉ်းချုပ်

၁.၁ နိဒါန်း

ဤအစီရင်ခံစာသည် Golden Lace POSCO International Co., Ltd. ၏ ဆန်စက်လုပ်ငန်းအတွက် ရေးဆွဲထားသော ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်း (Initial Environmental Examination- IEE) အစီရင်ခံစာ ဖြစ်ပါသည်။ အဆိုပါလုပ်ငန်းသည် ရန်ကုန်တိုင်းဒေသကြီး၊ လှိုင်သာယာမြို့နယ်၊ ရွှေလင်ပန်းစက်မှုဇုန်တွင် တည်ရှိ၍ (၃.၃၈၈) ဧက ကျယ်ဝန်းပါသည်။ စီမံကိန်းဧရိယာတွင် ဆန်စက်(၂)လိုင်းနှင့် ဂိုဒေါင်နှစ်လုံး တည်ဆောက်ပြီးဖြစ်၍ သိုလှောင်မှုပိုမိုမြှင့်တင်ရန် ဂိုဒေါင်တစ်ခု ထပ်မံ တည်ဆောက်ခြင်းဖြင့် လိုင်း(၂)လိုင်းမှ တစ်နေ့လျှင် တန် (၁၀၀)နှင့် (၆၀)ကျစီ စုစုပေါင်း တန် (၁၆၀) ကြိတ်ခွဲနိုင်မည်ဖြစ်ပါသည်။

ဤလုပ်ငန်းနှင့်ပတ်သက်၍ ရန်ကုန်တိုင်းဒေသကြီး၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာနသို့ သဘောထား မှတ်ချက် တောင်းခံခဲ့ရာတွင် ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်း (Initial Environmental Examination- IEE) ရေးဆွဲရန် ပြန်ကြားခဲ့ပါသည်။ အဆိုပါ သဘောထားမှတ်ချက် ပြန်ကြားလာခြင်းအရ Golden Lace POSCO International Co., Ltd. မှ ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်း အစီရင်ခံစာ ရေးသားရန် ENVIRON Myanmar Co. Ltd သို့ အလုပ်အပ်နှံခဲ့ပါသည်။ ENVIRON Myanmar Co. Ltd သည် ဤပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီရင်ခံစာကို သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာနမှ ပြဌာန်းထားသော ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်း လမ်းညွှန်ချက်များနှင့်အညီ ရေးသားပြုစုခဲ့ပါသည်။

ထိုသို့ရေးသားပြုစုထားသည့် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီရင်ခံစာနှင့် ပတ်သက်၍ သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန၏ ကနဦးတွေ့ရှိချက်နှင့် သုံးသပ်အကြံပြုချက်များအား Environmental Compliance Consultancy Co., Ltd မှ တာဝန်ယူ ပြင်ဆင်ပေးရန် လုပ်ငန်းအပ်နှံခဲ့ပါသဖြင့် ယခုအစီရင်ခံစာသည် ပြန်လည်ပြင်ဆင်တင်ပြခြင်း ဖြစ်ပါသည်။

၁.၂ ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်း အားဆောင်ရွက်ရခြင်းရည်ရွယ်ချက်

ဤ ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်း (IEE) နှင့် သက်ဆိုင်ရာ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ် (EMP) ဆောင်ရွက်ရခြင်း၏ ရည်ရွယ်ချက်မှာ အဆိုပြုစီမံကိန်းနှင့် ၎င်း၏ဆက်စပ်လုပ်ငန်းများကို တည်ဆောက်ခြင်းနှင့် လည်ပတ်ခြင်းမှ ဖြစ်ပေါ်လာနိုင်သော အလားအလာရှိသော သဘာဝပတ်ဝန်းကျင်နှင့် လူမှုဝန်းကျင်ဆိုင်ရာ အကျိုး သက်ရောက်မှုများ၏ သဘောသဘာဝနှင့် အတိုင်းအတာကို သိရှိရန်နှင့် သက်ရောက်မှုများကို လျော့ပါး သက်သာစေမည့် အစီအမံများကို အကောင်အထည်ဖော်ရန် ဖြစ်ပါသည်။

၁.၃ စီမံကိန်းအကြောင်းအရာဖော်ပြချက်

ရန်ကုန်တိုင်းဒေသကြီး၊ လှိုင်သာယာမြို့နယ်၊ ရွှေလင်ပန်းစက်မှုဇုန်တွင် တည်ရှိ၍ (၁၃.၃၈) ဧက ကျယ်ဝန်း၍ တစ်နေ့လျှင် တန် (၁၆၀) ကြိတ်ခွဲထုတ်လုပ်တင်ပို့ မည်ဖြစ်ပါသည်။ Golden Lace POSCO International Co., Ltd ၏ ကုမ္ပဏီ မှတ်ပုံတင် လက်မှတ်မှာ (၁၀၅၀၃၆၂၄၈) ဖြစ်ပါသည်။

စီမံကိန်းအနေဖြင့် အဟာရတန်ဖိုးနှင့် အရည်အသွေးပြည့်မီသည့် ဆန်ဖြူနှင့် ပြည်ပသို့ တင်ပို့မည့် အရည်အသွေးမြင့်ဆန်များကို ထုတ်လုပ်ရန် ရည်ရွယ်ဆောင်ရွက်ခြင်းဖြစ်ပါသည်။

စီမံကိန်းတစ်ခုလုံးတွင် ဆောက်လုပ်ရေးလုပ်ငန်း နှင့် ကြိတ်ခွဲရေးလုပ်ငန်းစဉ်များ ပါဝင်ပါသည်။ စက်ရုံတွင် အဓိကအားဖြင့် ဂိုဒေါင် (၃) လုံး ပါဝင်သည်။

ဂိုဒေါင် ၃ လုံး၏ သိုလှောင်မှုပမာဏမှာ အောက်ပါအတိုင်းဖြစ်သည်။

- ◆ ကုန်ကြမ်း (WR Raw/BR) = ၅၈၄၆ မက်ထရစ်တန်
- ◆ By Product = ၁၀၂၀ မက်ထရစ်တန်
- ◆ ကုန်ချော = ၁၂၃၇.၅ မက်ထရစ်တန်

ဆန်ပြုပြင်ထုတ်လုပ်ပုံအဆင့်ဆင့် (စီမံကိန်းလည်ပတ်သည့်အဆင့်)

ဆန်ပြုပြင်ထုတ်လုပ်ပုံအဆင့် (၈)ဆင့်ရှိပြီး အောက်ပါအတိုင်းဖြစ်ပါသည်။

(၁) **ကုန်ကြမ်းပို့ဆောင်ခြင်း (Raw Feeding Section)-** ဆန်ဖြူ သို့မဟုတ် ပေါင်းဆန် (par boiled rice) သို့ မဟုတ် ဆန်ဖြူကုန်ကြမ်း (white rice raw) အား သန့်စင်စက်သို့ ပို့ဆောင်ခြင်းဖြစ်ပါသည်။

(၂) **အမှိုက်သန့်စင်ခြင်း (Cleaning)-** သန့်စင်စက်၏ လေစုပ်စက်မှတစ်ဆင့် ပေါ့ပါးသောအမှိုက်များ၊ အမှုန်အမွှားများ အား ဖယ်ရှားပါသည်။

(၃) **သံစနှင့် ကျောက်ခဲအစများဖယ်ရှားခြင်း (Destoner Section)-** သန့်စင်ပြီး ဆန်ဖြူ သို့မဟုတ် ပေါင်းဆန် (par boiled rice) သို့ မဟုတ် ဆန်ဖြူကုန်ကြမ်း (white rice raw) တွင် ပါဝင်နိုင်သည့် သံတိုသံစများနှင့် ကျောက်ခဲများ အား Destoner စက်၏ တုန်ခါမှုနှင့်ဖယ်ရှားပေးပါသည်။

(၄) **ဆန်ဖွတ်ခြင်း (Whitening Section)-** သန့်စင်ပြီးသည့် ဆန်ကို ဖြူစင်အောင် ပွတ်တိုက်ခြင်း လုပ်ငန်းစဉ်ဖြစ်ပြီး ငွေရောင်အခွံနှင့် ဖွဲနုအလွှာကို ဖယ်ရှားခြင်းဖြင့် ဆန်၏ ကောင်းမွန်သောအသွင်အပြင်ကို ရရှိစေပါသည်။

(၅) **အရောင်တင်ခြင်း (Polishing Section)-** ဖွတ်ထားသော ဆန်ဖြူ သို့မဟုတ် ပေါင်းဆန် (par boiled rice) သို့ မဟုတ် ဆန်ဖြူကုန်ကြမ်း (white rice raw) ကို ပိုးသားကဲ့သို့ အရောင်ပြောင်အောင် ပွတ်တိုက်ရပါသည်။

(၆) **အဆင့်သတ်မှတ်ခြင်း (Grading Section) -** ဆန်ကွဲအကြီးနှင့်အသေးများအား ဖယ်ထုတ်ခြင်းဖြင့် ဆန်အမျိုးအစားများအား သတ်မှတ် အရွယ်အစားရရှိစေပါသည်။

(၇) **အရောင်ခွဲခြားခြင်း (Color Sorting Section)-** အရောင်ရှိသောဆန်များအား စက်ဖြင့်ဖယ်ထုတ်ခြင်းဖြင့် ဆန်ဖြူအချောထည်ရရှိအောင် ဆောင်ရွက်ခြင်းဖြစ်ပါသည်။

(၈) ချိန်တွယ်ခြင်းနှင့် ထုတ်ပိုးခြင်း (Weighing and Packing) - ဆန်ချောများအား အသင့်ရောင်းချရန်အတွက် အလေးချိန်သည့်စက်ဖြင့် သတ်မှတ်ချိန်တွယ်၍ ပြင်ပတွင် အပ်နှံဆောင်ရွက်ထားသည့် တံဆိပ်နှိပ်ခတ်ထားသည့် အိတ်များအတွင်း ထည့်သွင်း ထုတ်ပိုးခြင်းဖြစ်ပါသည်။

မို့၊ ပိုးမွှားနှင့် အနံ့အသက်တို့ကို ကာကွယ်ရန် ဆန်သိုလှောင်မှု အခြေအနေ- စီမံကိန်းမှ အသင့်ကုန်ချောဆန် (Ready Cargo) နှင့် ကုန်ကြမ်းဆန် (Rice Raw) များကို ကုန်သည်များထံမှ ဝယ်ယူပါသည်။ အသင့်ကုန်ချောဆန်အား အိတ်လဲလှယ်သွတ်သွင်းရန်နှင့် ကုန်ကြမ်းဆန်များအား ပြုပြင်ထုတ်လုပ်ရန် ကုန်သည်ထံမှ ပေးပို့လာသည့် အသင့်ကုန်ချောဆန် (Ready Cargo) နှင့် ကုန်ကြမ်းဆန် (Rice Raw) များကို ယာဉ်များပေါ်မှ သိုလှောင်ရုံသို့ သယ်ယူခြင်းမပြုမီ နမူနာများရယူပြီး အစိုဓာတ်ပါဝင်မှု ရာခိုင်နှုန်း (Moisture Content) ၁၄% နှင့် ၁၄% အောက်ရှိမရှိနှင့် ပိုးပါဝင်မှုရှိမရှိကို စက်ရုံ၏ အရည်အသွေးထိန်းညှိရေး (QC) မှ စစ်ဆေးပါသည်။ စစ်ဆေးချက်အရ အစိုဓာတ်မှာ ၁၄% နှင့် ၁၄% အောက်ရှိပြီး ပိုးပါဝင်မှုမရှိပါက ယာဉ်ပေါ်မှ သိုလှောင်ရုံသို့ သယ်ယူပါသည်။

ယာဉ်ပေါ်မှ သယ်ချစဉ် ဆန်တအိတ်ချင်းစီမှ နမူနာ ထပ်မံရယူပြီး အစိုဓာတ်နှင့် ပိုးပါဝင်မှုအား ထပ်မံစစ်ဆေးပါသည်။ သတ်မှတ်ချက်နှင့် ကိုက်ညီပါက လက်ခံပြီး ကိုက်ညီမှု မရှိပါက ကုန်သည်ထံပြန်ပို့ပါသည်။ လက်ခံရရှိသော ဆန်များကိုအမျိုးအစားအလိုက် ပိုင်ပုံစနစ်ဖြင့်လက်ခံပါသည်။ ပိုင်ပုံအောက်ခံမှာ သစ်သားခုံများ ဖြစ်ပါသည်။ သိုလှောင်ထားသော ပိုင်ပုံမှ ဆန်အရည်အသွေးကို အပတ်စဉ် စစ်ဆေးပြီး လိုအပ်ပါက ပိုင်လိုက်ပြောင်းရွှေ့ခြင်း၊ ထက်အောက်လှန်ခြင်း၊ ပိုးတွေ့ပါက အဆိပ်ငွေ့ မှိုင်းတိုက်ဆေး (Aluminium Phosphid 56% Tablet) ဖြင့် ပိုးသတ်ခြင်းတို့ကို ဆောင်ရွက်ပါသည်။

ထွက်ရှိလာသော ကုန်ချောများအား ဥရောပနှင့် တရုတ်နိုင်ငံသို့ အဓိကတင်ပို့သွားမည် ဖြစ်ပါသည်။ လုပ်ငန်းလည်ပတ်ရန် စုစုပေါင်း စက်ပစ္စည်း အမျိုးအစား (၂၅၅) မျိုးအား အသုံးပြုသွားမည်ဖြစ်ပြီး ဝန်ထမ်း (၄၀) ဦးနှင့် တစ်ရက်လျှင် ၁၈နာရီမှ နာရီ(၂၀)ထိ၊ တစ်ပါတ်လျှင် (၆)ရက် ဖြင့် လုပ်ငန်းဆောင်ရွက်သွားမည်ဖြစ်ပါသည်။ တစ်နှစ်လျှင် လျှပ်စစ် အသုံးပြုမှုအနေဖြင့် (၉၆,၀၀၀) KWh ဖြစ်ပြီး အရေးပေါ်မီးစက် (၃)လုံး- (၅၀၀/၂၅၀/၉ ကီလိုဗို့နာရီ) အရထားရှိပါသည်။ တစ်ရက်လျှင် ရေအသုံးပြုမှုအနေဖြင့် ၆၀၀ m³ အသုံးပြု သွားမည်ဖြစ်၍ တစ်နှစ်လျှင် လောင်စာဆီ အသုံးပြုမှု အနေဖြင့် (၁၃၂၀) ဂါလံ အသုံးပြုသွားမည် ဖြစ်ပါသည်။ ၎င်းနှင့် ပတ်သက်သည့် အသေးစိတ် အကြောင်းအရာများကို အခန်း (၄) တွင် ဖော်ပြထားပါသည်။

၁.၄ စီမံကိန်းရင်းနှီးမြှုပ်နှံမှု

ဤလုပ်ငန်း၏ ရင်းနှီးမြှုပ်နှံမှုကာလမှာ နှစ် (၅၀) ဖြစ်၍ အမေရိကန် ဒေါ်လာ (၄,၃၈၇,၅၀၀) ဖြင့် ရင်းနှီးမြှုပ်နှံထားသော နိုင်ငံခြားရင်းနှီးမြှုပ်နှံမှု ဖြစ်ပါသည်။

၁.၅ အခြားနည်းလမ်းရွေးချယ်ခြင်း

စီမံကိန်းဧရိယာအနေဖြင့် ပြန်လည်နေရာချထားရေးပြဿနာကို ထည့်သွင်းစဉ်းစားရန် မလိုအပ်သည့် အခြား ရွေးချယ်စရာဧရိယာနှင့် လျှပ်စစ်မီးရရှိရေး၊ ရေရရှိရေးနှင့် သယ်ယူပို့ဆောင်ရေးစနစ်တို့နှင့်ပတ်သက်၍

စိုးရိမ်စရာ မရှိသည့် စက်မှုဇုန်(လှိုင်သာယာမြို့နယ်၊ ရန်ကုန်)ဖြစ်ပြီး စက်မှုဇုန်သည် ရွှေပြည်သာမြို့နယ်အနီး အမှတ်(၄) လမ်းမကြီးနှင့် ရန်ကုန်-ပြည် မီးရထားလမ်းကြားတွင် တည်ရှိပါသည်။

ရွှေလင်ဗန်းစက်မှုဇုန်တွင် အသေးစားနှင့် အလတ်စားစက်မှုလုပ်ငန်း တစ်ရာခန့်ရှိပြီး စက်မှုဇုန်ရှိ အချို့ နေရာများ တွင် လူနေ အိမ်ရာများ ချထားပေးထားပါသည်။ ယေဘုယျအားဖြင့် အများသူငှာအပေါ် သက်ရောက်မှု မှာ သိသာထင်ရှားမှုမရှိသောကြောင့် အဆိုပြုထားသော စီမံကိန်းအတွက် ယခုတည်နေရာကို ရွေးချယ်ခဲ့ပါသည်။

အဆိုပြုစီမံကိန်းအား အကောင်အထည်ဖော်ဆောင်ရွက်နိုင်ခြင်းမရှိပါက စီမံကိန်းမှ ရရှိနိုင်သည့် အောက်ဖော်ပြပါ အကျိုးကျေးဇူးများအား ရရှိနိုင်လိမ့်မည်မဟုတ်ပေ။

- စီမံကိန်း၏ဖွံ့ဖြိုးတိုးတက်မှုနှင့် လည်ပတ်မှုကာလအတွင်း ဒေသတွင်း အလုပ်အကိုင်ဖန်တီးနိုင်ခြင်း၊
- ဒေသတွင်း ကုန်သွယ်မှုနှင့် ပူးပေါင်းဆောင်ရွက်နိုင်မှုအလားအလာများဖန်တီးနိုင်ခြင်း၊
- ပြည်ထောင်စုနှင့် တိုင်းဒေသကြီးအတွင်း အခွန်ဝင်ငွေရရှိမှုနှင့် စီးပွားရေးဖွံ့ဖြိုးတိုးတက်မှု အလားအလာများ တိုးတက်ဖြစ်ပေါ်ခြင်း၊
- လှိုင်သာယာမြို့နယ်အတွင်း အခြေခံ အဆောင်အအုံများ ဖွံ့ဖြိုးတိုးတက်မှု အလားအလာများ ဖြစ်ထွန်းခြင်း၊

၁.၆ စီမံကိန်းအဆိုပြုသူ၏ အကြောင်းအရာ

Golden Lace POSCO International Co., Ltd. အနေဖြင့် မြန်မာနိုင်ငံတွင် ခေတ်မီနည်းပညာများကို ဆန်းသစ်တီထွင်အသုံးပြု၍ အရည်အသွေးမြင့် ဆန်များကို တင်ပို့ရောင်းချရန်၊ စပါးရိတ်သိမ်းချိန်လွန်ကာလ များတွင် ဆုံးရှုံးမှုကို တားဆီးရန် သင်တန်းများ ပံ့ပိုးပေးခြင်းနှင့် ထုတ်လုပ်မှုနည်းပညာများ ခေတ်မီအောင် ပေါင်းစပ်ခြင်းဖြင့် ထုတ်လုပ်မှုစွမ်းအား မြှင့်တင်ရန် ရည်ရွယ်၍ ဤဆန်စက်လုပ်ငန်းအား ဆောင်ရွက်ခြင်း ဖြစ်ပါ သည်။ Golden Lace POSCO International Co., Ltd. မှ ဤအစီရင်ခံစာအပေါ် တာဝန်ရှိသူနှင့် ဆက်သွယ်ရန်မှာ အောက်ပါအတိုင်းဖြစ်ပါသည်။

အမည်	- ဒေါ်တင်ထားဖုန်း
ရာထူး	- General Manager, HR & Admin Department
လိပ်စာ	- အမှတ်- ၅၆, (၅)လွှာ၊ မဟာလမ်းအဆောက်အဦ၊ ကမ္ဘာအေးဘုရားလမ်း၊ ရန်ကင်းမြို့နယ်၊ ရန်ကုန်မြို့
ဖုန်းနံပါတ်	- + ၉၅ ၉၂၅၀၆၈၄၉၅၉
အီးလ်မေးလ်	- htp@gl-pi.com

၁.၇ ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းအစီရင်ခံစာဆောင်ရွက်သည့် တတိယအဖွဲ့အစည်း၏ အကြောင်းအရာ

Environmental Compliance Consultancy Co. Ltd (EncvCC) သည် ကနဦးပတ်ဝန်းကျင် ဆန်းစစ်ခြင်း နှင့် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း ပြုလုပ်သည့် တတိယပုဂ္ဂိုလ် သို့မဟုတ် အဖွဲ့အစည်းများ လုပ်ငန်းလိုင်စင်

အမျိုးအစား (က)- လိုင်စင်အမှတ် EIA-CO (A) 005/2024 ရရှိပြီးသည့် တတိယအဖွဲ့အစည်းတစ်ခု ဖြစ်ပြီး ဒေသတွင်းနှင့် နိုင်ငံတကာ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လမ်းညွှန်ချက်များ၊ လုပ်ထုံး လုပ်နည်းများ၊ စီမံကိန်းဆိုင်ရာ ဥပဒေများနှင့် စည်းမျဉ်းစည်းကမ်းများအရ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းအား ဆောင်ရွက် လျက်ရှိပါသည်။

Environmental Compliance Consultancy Co., Ltd. မှ ဤအစီရင်ခံစာအပေါ် တာဝန်ရှိသူနှင့် ဆက်သွယ်ရန်မှာ အောက်ပါအတိုင်းဖြစ်ပါသည်။

အမည်	- ဒေါ်မြတ်မွန်ဆွေ
ရာထူး	- Principle Consultant
လိပ်စာ	- (၁) မ/၂၀၊ နိဗ္ဗိန္ဒလမ်း၊ နံသာကုန်းရပ်ကွက်၊ အင်းစိန်မြို့နယ်၊ ရန်ကုန်မြို့ (၂) အမှတ် (၅၆၁၁)၊ သစ်ခွ (၁) လမ်း၊ ဇေယျာသိန္နီရပ်ကွက် ၊ ဥတ္တရသီရိမြို့နယ်၊ နေပြည်တော်
ဖုန်းနံပါတ်	- + ၉၅ ၉၄၂၀၁၁၁၉၀၂
အီးလ်မေးလ်	- myatmonswe@envccmyanmar.com , myatmonswe@gmail.com

၁.၈ လိုက်နာဆောင်ရွက်ရမည့် ဥပဒေ၊ နည်းဥပဒေ၊ မူဘောင်ဆိုင်ရာလုပ်ထုံးလုပ်နည်းများ

Golden Lace POSCO International Co., Ltd. ၏ ဆန်စက်လုပ်ငန်းနှင့်ပတ်သက်သည့် တည်ဆဲ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဥပဒေနှင့် နည်းဥပဒေများ၊ အပြည်ပြည်ဆိုင်ရာ စံချိန်စံနှုန်းများနှင့် လမ်းညွှန်ချက်များ အပါအဝင် မူဝါဒနှင့် ဥပဒေရေးရာ မူဘောင်များမှာ အောက်ပါအတိုင်း ဖြစ်ပါသည်။ ၎င်းနှင့်ပတ်သက်သည့် အသေးစိတ် အကြောင်းအရာများကို အခန်း (၃) တွင် တင်ပြထားပါသည်။

- မြန်မာနိုင်ငံ အမျိုးသား ပတ်ဝန်းကျင်ရေးရာမူဝါဒ (၂၀၁၉)
- မြန်မာနိုင်ငံရာသီဥတုပြောင်းလဲမှုဆိုင်ရာမူဝါဒ(၂၀၁၉)
- ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော် ဖွဲ့စည်းပုံအခြေခံ ဥပဒေ (၂၀၀၈)
- သဘာဝဘေးအန္တရာယ်စီမံခန့်ခွဲမှုဥပဒေ (၂၀၁၃)
- ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဥပဒေ (၂၀၁၂)
- ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးနည်းဥပဒေများ (၂၀၁၄)
- ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း (၂၀၁၅)
- အမျိုးသား ပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များ(၂၀၁၅)
- ရေအရင်းအမြစ်နှင့် မြစ်ချောင်းများ ထိန်းသိမ်းရေးဥပဒေ (၂၀၀၆)
- တောရိုင်းတိရစ္ဆာန်နှင့် သဘာဝအပင်များကာကွယ်ရေးနှင့် သဘာဝနယ်မြေများ ထိန်းသိမ်းရေးဥပဒေ (၁၉၉၄)

- ဇီဝမျိုးစုံမျိုးကွဲနှင့် သဘာဝထိန်းသိမ်းရေးနယ်မြေများ ကာကွယ်စောင့်ရှောက်ခြင်းဆိုင်ရာဥပဒေ (၂၀၁၈)
- ယဉ်ကျေးမှုအမွေအနှစ်ဒေသများ ကာကွယ်ထိန်းသိမ်းရေးဥပဒေ (၁၉၉၈)
- ရှေးဟောင်းဝတ္ထုပစ္စည်းများ ကာကွယ်ထိန်းသိမ်းရေးဥပဒေ (၂၀၁၅)
- ရှေးဟောင်းအဆောက်အအုံများကာကွယ်ထိန်းသိမ်းရေးဥပဒေ (၂၀၁၅)
- မြန်မာနိုင်ငံ မီးသတ်တပ်ဖွဲ့ ဥပဒေ (၂၀၁၅)
- မော်တော်ယာဉ်ဥပဒေ (၂၀၁၅)
- ပြည်ထောင်စုမြန်မာနိုင်ငံ ပြည်သူ့ကျန်းမာရေးဆိုင်ရာ ဥပဒေ (၁၉၇၂)
- ကူးစက်ရောဂါများ ကာကွယ်နှိမ်နင်းရေးဥပဒေ (၁၉၉၅)
- လုပ်ငန်းခွင်ဘေးအန္တရာယ်ကင်းရှင်းရေးနှင့် ကျန်းမာရေးဆိုင်ရာဥပဒေ (၂၀၁၉)
- အလုပ်အကိုင်နှင့် ကျွမ်းကျင်မှု ဖွံ့ဖြိုးတိုးတက်ရေးဥပဒေ (၂၀၁၃)
- အလုပ်သမားရေးရာ အငြင်းပွားမှုဖြေရှင်းရေးဥပဒေ (၂၀၁၂)
- အလုပ်သမားလျော်ကြေးငွေအက်ဥပဒေ (၁၉၂၃၊ ပြင်ဆင်ခြင်း- ၁၉၅၅၊ ၁၉၅၇၊ ၂၀၀၅)
- အလုပ်သမားအဖွဲ့အစည်းဥပဒေ (၂၀၁၁)
- အနည်းဆုံးအခကြေးငွေဥပဒေ (၂၀၁၃)
- အခကြေးငွေပေးချေရေးဥပဒေ (၂၀၁၆)
- ခွင့်ရက်နှင့် အလုပ်ပိတ်ရက်အက်ဥပဒေ(၂၀၁၄)
- လူမှုဖူလုံရေးဥပဒေ (၂၀၁၂)
- တိုင်းရင်းသားလူမျိုးများ၏ အခွင့်အရေးကာကွယ်စောင့်ရှောက်သည့်ဥပဒေ (၂၀၁၅)
- ဆေးလိပ်နှင့် ဆေးရွက်ကြီးထွက်ပစ္စည်းသောက်သုံးမှုထိန်းချုပ်ရေးဥပဒေ (၂၀၀၆)
- ဓာတုပစ္စည်းနှင့် ဆက်စပ်ပစ္စည်းများအန္တရာယ်မှ တားဆီးကာကွယ်ရေးနည်းဥပဒေများ (၂၀၁၆)
- ဓာတုပစ္စည်းနှင့် ဆက်စပ်ပစ္စည်းများအန္တရာယ်မှ တားဆီးကာကွယ်ရေးဥပဒေ (၂၀၁၃)
- မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှု ဥပဒေ (၂၀၁၆)
- မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှုနည်းဥပဒေများ (၂၀၁၇)
- နိုင်ငံခြား ရင်းနှီးမြှုပ်နှံမှုဥပဒေ (၂၀၁၂)
- ရန်ကုန်မြို့တော် စည်ပင်သာယာရေးဥပဒေ (၂၀၁၈)
- ပို့ကုန်သွင်းကုန်ဥပဒေ (၂၀၁၂)

၁.၉ စီမံကိန်းအနီးဝန်းကျင်ရှိ ပတ်ဝန်းကျင်နှင့် လူမှုဝန်းကျင်အခြေအနေ

စီမံကိန်းဧရိယာသည် ပျမ်းမျှပင်လယ်ရေမျက်နှာပြင်အထက် (၄.၃) မီတာခန့်တွင် တည်ရှိပြီး ကျယ်ဝန်းသော မြေပြင်အနေအထားရှိပါသည်။ စီမံကိန်းတည်နေရာသည် လူနေအသင့်အတင့်ရှိသော ရွှေလင်းဗန်း စက်မှုဇုန်အတွင်းတွင် တည်ရှိပါသည်။

စီမံကိန်းဧရိယာတည်ရှိသည့် လှိုင်သာယာမြို့နယ်သည် ပူဇွန်း စွတ်စိုသော ရာသီဥတုရှိပြီး ပျမ်းမျှအပူချိန် (၂၅°C) နှင့် တစ်နှစ်ပတ်လုံးမိုးရေချိန်အနေဖြင့် ၂၂၇၆ မီလီမီတာ (၈၉.၆လက်မ)ထိ ရှိပါသည်။

ဆန်စက်ရုံသည် ဆန်ထုတ်လုပ်ခြင်းလုပ်ငန်း ဖြစ်သော်လည်း စပါးမှ ထုတ်လုပ်ခြင်းမဟုတ်ဘဲ ကုန်ကြမ်းအဖြစ် ဆန်လုံးညို (Brown Rice) ကိုသာဝယ်ယူ၍ ဆန်ထုတ်လုပ်သည့်အတွက် စက်ရုံအတွင်းတွင် အမှုန်အမွှားများ၊ ဓာတ်ငွေ့များ ထွက်ရှိမှု နည်းပါးပြီး လုပ်ငန်းလည်ပတ်ရာတွင် လျှပ်စစ်ကိုသာ အဓိက အသုံးပြုသည့်အတွက် အန္တရာယ်ရှိသော အခိုးအငွေ့ ထွက်ရှိနိုင်မှုလည်း နည်းပါးနိုင်ကြောင်း လေ့လာ တွေ့ရှိရပါသည်။

၂၀၁၅ခုနှစ်၊ စက်ရုံဝန်းကျင်တွင် တိုင်းတာစဉ်က လေအရည်အသွေးရလဒ်များနှင့် ၂၀၂၅ခုနှစ်တွင် ထပ်မံတိုင်းတာသည့်ရလဒ်အရ ဆာလ်ဖာဒိုင် အောက်ဆိုဒ်မှလွဲ၍ အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေးထုတ်လွှတ်မှု လမ်းညွှန်ချက်များ (NEQG) ရှိ သတ်မှတ်ချက်အတွင်း တည်ရှိသည်ကို တွေ့ရှိရပါသည်။

ထိုသို့ဖြစ်ပွားခြင်းမှာ ဆာလ်ဖာဒိုင် အောက်ဆိုဒ်သည် လောင်စာလောင်ကျွမ်းမှုအတွင်း ဖြစ်ပေါ်တတ်သည်ဖြစ်ရာ စက်ရုံ၏တည်နေရာသည် စက်မှုဇုန်အတွင်းတည်ရှိသဖြင့် သွားလာရေးယာဉ်များ၏ လောင်စာဆီ လောင်ကျွမ်းခြင်းမှ ထွက်ရှိလာခြင်း ဖြစ်နိုင်သည်ကို လေ့လာဆန်းစစ်ရပါသည်။

စီမံကိန်းလုပ်ဆောင်ချက်များကြောင့် ပတ်ဝန်းကျင်သို့ ထိခိုက်ညစ်ညမ်းစေသော ဆူညံသံမှ သက်ရောက်မှုရှိ/ မရှိ သိရှိစေရန် စက်ရုံအတွင်းရှိ ဆူညံသံများကို Digital Sound Level Meter ဖြင့် ထပ်မံတိုင်းတာချက်များအရ အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး ထုတ်လွှတ်မှု လမ်းညွှန်ချက်များ (NEQG) ရှိ သတ်မှတ်ချက်များမှ နေ့အချိန်တွင် ကျော်လွန်မှု မရှိသည်ကို တွေ့ရှိရသော်လည်း ညအချိန်တွင် သတ်မှတ်ချက်ထက် ၁၅ dBA ကျော်လွန်သည်ကိုတွေ့ရှိရပါသည်။ ထိုသို့ဖြစ်ပွားခြင်းမှာ စက်ရုံသည် ညအချိန်တွင် လည်ပတ်ခြင်းမရှိသော်လည်း ပတ်ဝန်းကျင်တွင် သွားလာလျှက်ရှိသည် မော်တော်ယာဉ်များ၊ ဆိုင်ကယ်များကြောင့် ဖြစ်နိုင်သည်ကို လေ့လာတွေ့ရှိရပါသည်။

စီမံကိန်း၏ မြေအရည်အသွေးဆိုင်ရာ အချက်အလက်များကို သိရှိနိုင်ရန်အတွက် စီမံကိန်းဧရိယာအတွင်း အနက် ၃ မီတာမှ ကောက်ယူခဲ့သည် မြေနမူနာအား သေချာစွာ ထုပ်ပိုး၍ စိုက်ပျိုးရေး၊ မွေးမြူရေးနှင့် ဆည်မြောင်းဝန်ကြီးဌာန၊ ဆည်မြောင်းဦးစီးဌာန (၂၀၁၅) နှင့် မြေအသုံးချရေးဦးစီးဌာန (၂၀၂၅) ရှိ ဓာတ်ခွဲခန်းသို့ ပို့ဆောင်၍ မြေနမူနာ စမ်းသပ်ခြင်းကို ပြုလုပ်ခဲ့ရာ မြေဆီလွှာသည် စိုက်ပျိုးရေးအတွက် သင့်တော်သည့် အနေအထားအဆင့်တွင် တည်ရှိပြီး ပိုတက်ဆီယမ်ပါဝင်မှု အနည်းဆုံး ဖြစ်သည်ကို တွေ့ရှိရပါသည်။

စီမံကိန်း၏ ရေအရည်အသွေးဆိုင်ရာ အချက်အလက်များကို သိရှိနိုင်ရန်အတွက် မြေအောက်ရေ (Ground Water) နှင့် စွန့်ပစ်အရည် (Wastewater) ရေနမူနာများအား စက်ရုံ အတွင်းကောက်ယူခဲ့ပြီး ဆည်မြောင်းဦးစီးဌာန

laboratory နှင့် Ecological Lab သို့ ၂၀၁၅ နှင့် (၁၅-၅-၂၀၂၅) တွင် ပို့ဆောင် စစ်ဆေးခဲ့သည့် တိုင်းတာရရှိခဲ့သော မြေအောက်ရေနှင့် ရေဆိုးအရည်အသွေး ရလဒ်များအရ Ammonia-Nitrogen (NH₃-N) နှင့် Turbidity သည် သတ်မှတ်ချက်ထက် ကျော်လွန်နေသည်ကို တွေ့ရှိရပြီး ကျန်ပါရာမီတာများမှာ စံချိန်စံညွှန်းအတွင်း ရှိသည်ကို တွေ့ရှိရပါသည်။

စီမံကိန်းဒေသ၏ ဇီဝဝန်းကျင်ဆိုင်ရာ အချက်အလက်များကို ထုတ်ဝေထားရှိသည့် သတင်းအချက်အလက် များနှင့် ပြည်သူလူထုနှင့်တွေ့ဆုံမေးမြန်းမှု၊ လေ့လာမှုများမှ လေ့လာဆန်းစစ်ချက်အရ အကျဉ်းချုပ်အား အောက်ပါ အတိုင်း လေ့လာတွေ့ရှိရပါသည်။

- (၁) အပင်မျိုးစိတ် စုစုပေါင်း (၅၉)မျိုးဖြစ်သော ဆေးဘက်ဝင်အပင် (Herb) (၁၂) မျိုး၊ နွယ်ပင် (၆)မျိုး၊ သစ်ပင်ငယ်မျိုး (၁၁)မျိုး၊ သစ်ပင်ကြီးမျိုး (၂၅) မျိုးနှင့် ခြံဖုတ်မျိုး (၅) မျိုးနှင့် အား တွေ့ရှိရပြီး အများစုမှာ ကာကွယ်ထိန်းသိမ်းရန် လိုအပ်သည့် မျိုးစိတ်များဖြစ်သည်ကို မတွေ့ရှိရဘဲ Endangered (EN) အနေဖြင့် ပိတောက်ပင်များ ပေါက်ရောက်လျက်ရှိသည်ကို တွေ့ရှိရပါသည်။
- (၂) စီမံကိန်းဧရိယာအနီး နို့တိုက်သတ္တဝါမျိုးစိတ် (၂) မျိုး ဖြစ်သည့် Grey squirrel (*Callosciurus pygerythrus*) နှင့် Farm-coloured mouse (*Mus cervicolor*) တို့ကိုတွေ့ရှိရပြီး IUCN Red List (2024-2) အရ threatened species နှင့် endemic species များကို မတွေ့ရှိရပါ။
- (၃) ကုန်းနေ ရေနေနှင့် တွားသွားသတ္တဝါမျိုးစိတ် စုစုပေါင်း (၄)မျိုးအား တွေ့ဆုံမေးမြန်းခြင်းဖြင့် စူးစမ်းလေ့လာခြင်း ဖြင့် အိမ်မြှောင်မျိုးစိတ် ၁ မျိုးနှင့် မြေမျိုးစိတ် ၃ မျိုးရှိသည်ကို တွေ့ရှိရပါသည်။
- (၄) ငှက်မျိုးစိတ် (၂၃)မျိုးအား လေ့လာတွေ့ရှိရပြီး IUCN Red List (2024-2) အရ threatened species နှင့် endemic species များကို မတွေ့ရှိရပါ။
- (၅) တွေ့ရှိရသည့် လိပ်ပြာမျိုးစိတ် (၁၄)မျိုးအနက် IUCN red list (2024-2) အရ Peacock pansy (*Junonia almanac*) သည် least concern (LC) ဖြစ်သည်ကို တွေ့ရပါသည်။
- (၆) ပုစဉ်းမျိုးစိတ်များအား စီမံကိန်းဧရိယာအတွင်း အများစုတွေ့ရှိရပြီး တွေ့ရှိရသော မျိုးစိတ် (၂)မျိုးမှာ IUCN Red List (2024-2) အရ threatened species နှင့် endemic species များ မဟုတ်ကြောင်း တွေ့ရှိရပါသည်။
- (၇) ငါးမျိုးစိတ် (၁၁)မျိုးခန့်လေ့လာတွေ့ရှိရသည့်အနက် IUCN Red List (2024-2) အရ အများစုမှာ least concern (LC) ဖြစ်သည်ကို တွေ့ရှိရပြီး threatened species နှင့် endemic species များကို မတွေ့ရှိရပါ။
- (၈) စီမံကိန်းနှင့် အနီးဆုံး ဘေးမဲ့ဧရိယာမှာ ရန်ကုန်မြို့၏ မြောက်ဘက်၊ မင်္ဂလာဒုံမြို့နယ်တွင် တည်ရှိသော လှော်ကား ဥယျာဉ် ဖြစ်ပြီး စီမံကိန်းမှ လုပ်ဆောင်ချက်များကြောင့် ထိခိုက်သက်ရောက်နိုင်မှုမရှိပါ။

စီမံကိန်းဧရိယာ၏ လူမှုဝန်းကျင်အခြေအနေနှင့် ပတ်သက်၍ ရွှေလင်းဗန်းတွင် လေ့လာတွေ့ရှိချက် အကျဉ်းချုပ်အား အောက်ပါအတိုင်း တင်ပြအပ်ပါသည်။

- (၁) မိသားစုဝင်များအဖြစ် (၂) ယောက်မှ (၄)ယောက်နှင့် (၄)ယောက်မှ (၈)ယောက်အထိရှိသည့် မိသားစု ဝင်မှာ ၄၀% စီရှိသည်ကိုတွေ့ရှိရပါသည်။

- (၂) အသက် (၅) နှစ်အရွယ် ကလေးများ၏ ကျောင်းတက်နှုန်းသည် ၁၀၀% ဖြစ်သော်လည်း တက္ကသိုလ် တက်ရန် အရည်အချင်းပြည့်မီသော ကျောင်းသားရာခိုင်နှုန်းမှာ ၃၀.၇၂% ခန့်သာရှိပါသည်။
- (၃) အိမ်အများစုမှာ သစ်သားအိမ်သည်အများစုဖြစ်ပြီး အုပ်ညှပ်အိမ်များကိုလည်း တွေ့ရှိရပါသည်။
- (၃) အိမ်အများစုတွင် ဆိုလာလျှပ်စစ်မီးကို သုံးစွဲလျက်ရှိပြီး (၁၅)ရပ်ကွက် တွင် အများဆုံးသုံးစွဲသည်ကို လေ့လာတွေ့ရှိရပါသည်။ မော်တော်ဆိုင်ကယ်နှင့် စက်ဘီးအသုံးပြုပိုင်ဆိုင်မှုအနေဖြင့်လည်း အများဆုံး တွေ့ရှိရပါသည်။ မိုဘိုင်းလ်ဖုန်းအနေဖြင့် လူတိုင်းကိုင်ဆောင်နိုင်ကြပါသည်။
- (၄) ချက်ပြုတ်ရန် လျှပ်စစ်ကို အဓိကအသုံးပြုပြီး မြေအောက်ရေကို သောက်သုံးရေအဖြစ် ရေတုံကင်နှင့် ရေတွင်းများမှ ထုတ်ယူသုံးစွဲလျက် ရှိပါသည်။
- (၅) ဝင်ငွေရရှိသည့် စီးပွားရေးအခြေခံသည် စက်မှုဇုန်တွင်အလုပ်လုပ်ကိုင်ခြင်းမှ ဖြစ်ပြီး အိမ်ဆိုင်လုပ်ငန်းများ (အထူးသဖြင့်- ဆိုင်ကယ်ပြင်ဆင်ခြင်း) မှလည်း ဝင်ငွေရရှိပါသည်။ ဝင်ငွေရရှိမှုမှာ တစ်နှစ်လျှင် ၃၀- ၁၀၀ သိန်းထိ ရှိကြပါသည်။
- (၆) ကျန်းမာရေးစောင့်ရှောက်မှုအနေဖြင့် အစိုးရမြို့နယ်ဆေးရုံနှင့် ပုဂ္ဂလိကဆေးရုံဆေးပေးခန်းများရှိပြီး ကူးစက်ရောဂါအနေဖြင့် ယခင်က တီဘီရောဂါဖြစ်ပွားမှုများသော်လည်း ယခုအခါတွင်မူ မရှိသလောက် ဖြစ်ပွားခြင်းမရှိတော့သည့်အကြောင်းအား သိရှိရပါသည်။
- (၇) အမှိုက်စွန့်ပစ်ရန်သတ်မှတ်ဧရိယာတွင် စွန့်ပစ်ပြီး ရန်ကုန်စည်ပင်သာယာရေးကော်မတီမှ လာရောက် သိမ်းဆည်းခြင်းအား ဆောင်ရွက်ပေးသည်ကို တွေ့ရှိရပါသည်။
- (၈) ယဉ်ကျေးမှု အမွေအနှစ်များအား စီမံကိန်းဝန်းကျင်တွင် မတွေ့ရှိရသော်လည်း အောင်မြေသာယာနှင့် ရွှေရင်အေးစေတီတို့မှာ စီမံကိန်းအနီး (၄.၅ နှင့် ၃.၇) ကီလိုမီတာအတွင်းတည်ရှိသည်ကို လေ့လာ တွေ့ရှိ ရပါသည်။

ယင်းပတ်ဝန်းကျင်ဆိုင်ရာ အချက်အလက်များနှင့် ဆက်စပ်လျက်ရှိသော အကြောင်းအရာများ၏ အသေးစိတ်ကို အခန်း (၅) တွင် ဖော်ပြထားပါသည်။

၁.၁၀ ဖြစ်နိုင်ချေရှိသည့် ထိခိုက်သက်ရောက်မှုအားဆန်းစစ်ခြင်း

စီမံကိန်းဆောင်ရွက်ခြင်းကြောင့် စီမံကိန်းဧရိယာနှင့် စီမံကိန်းအနီးပတ်ဝန်းကျင်ပေါ်တွင် ရုပ်ပိုင်းဆိုင်ရာ၊ ဇီဝဗေဒပိုင်းဆိုင်ရာ၊ လူမှုစီးပွားဆိုင်ရာအားဖြင့် ပြောင်းလဲမှုများ ရှိလာနိုင်ပါသည်။ စီမံကိန်း အဆင့်ဆင့်နှင့် အချိန် ကာလအလိုက် (လည်ပတ်ခြင်းကာလနှင့်ဖျက်သိမ်းခြင်းကာလ)များတွင် ပတ်ဝန်းကျင်ဆိုင်ရာ အချက်အလက်များ ဖြစ်သော လေအရည်အသွေး၊ ရေအရည်အသွေး၊ မြေအရည်အသွေး၊ ဆူညံသံနှင့် တုန်ခါမှု၊ စွန့်ပစ်ပစ္စည်း (အစိုင်အခဲ၊ အရည်)၊ မီးဘေးအန္တရာယ်နှင့် ဝန်ထမ်းများကျန်းမာရေးနှင့် ဘေးအန္တရာယ် ကင်းရှင်းရေးများပေါ်တွင် လုပ်ငန်းဆောင်ရွက်ခြင်းကြောင့် စီမံကိန်း ပတ်ဝန်းကျင်နှင့် လူမှုရေးအပေါ်တွင် ကောင်းကျိုးနှင့် ဆိုးကျိုး သက်ရောက်မှုများကို ဖြစ်ပေါ်စေနိုင်ပါသည်။

လုပ်ငန်းဆောင်ရွက်ခြင်းကြောင့် ပတ်ဝန်းကျင်နှင့် လူမှုရေးအပေါ် ဖြစ်ပေါ်လာနိုင်သော သိသာထင်ရှား သည့် သက်ရောက်မှုများကို အကဲဖြတ် တိုင်းတာသည့် သတ်မှတ်ချက်ဘောင်များနှင့် ၎င်း၏ အတိုင်းအတာများ

ဖြစ်သော ထိခိုက်မှုပမာဏ၊ ကြာချိန်၊ နေရာအကျယ်အဝန်းနှင့် အကြိမ်အရေအတွက် (ဖြစ်နိုင်ချေ) များကို အခြေခံ၍ လေ့လာဆန်းစစ်ခြင်းများ ပြုလုပ်ခဲ့ပါသည်။

စီမံကိန်းတည်ဆောက်ရေးလုပ်ငန်းများ ဆောင်ရွက်ပြီးစီး၍ လုပ်ငန်း လည်ပတ်လျက်ရှိပါသဖြင့် စီမံကိန်း အချိန်ကာလအလိုက် (လည်ပတ်ခြင်းကာလနှင့် ဖျက်သိမ်းခြင်းကာလ) လုပ်ငန်းလုပ်ဆောင်ချက်များကို အောက်ပါ အတိုင်း လေ့လာဆန်းစစ်ထားရှိပါသည်-

လည်ပတ်ခြင်းကာလ

လေအရည်အသွေး

- ကုန်ကြမ်းပစ္စည်းဖြစ်သော ဆန်လုံးညိုအား သယ်ယူသည့်အဆင့်နှင့် သန့်ရှင်းရေး ဆောင်ရွက်သည့် အဆင့်တွင် Rotary Shifter ၏ လှုပ်ရှားမှု၊ သန့်ရှင်းသည့်စက်၏ လေမှုတ်ထုတ်မှုဖြင့် သန့်ရှင်းရေးဆောင်ရွက်သည့် Cleaner များနှင့် နောက်ဆုံးအဆင့် De-Stoner စက်နှင့် သန့်ရှင်းရေး ဆောင်ရွက်သည့် အဆင့်များမှ အမှုန်အမွှားများ ထွက်ရှိမှု၊
- ကြိတ်ခွဲစက်(Mill) ၏ လုပ်ငန်းစဉ်များဖြစ်သော Bucket Elevator ဖြင့် ရွှေ့လျားခြင်း၊ ဆန်အဖြူ ဖွတ်ခြင်း (အရောင်တင်ခြင်း) နှင့် Length Grader တွင် ဆန်အဆင့်သတ်မှတ်ခြင်းများမှ ထုတ်လွှတ်မှု၊
- ဖွဲနု ကိုင်တွယ်ခြင်း၊ သိုလှောင်ခြင်းနှင့် ပို့ဆောင်ခြင်းမှ ထုတ်လွှတ်မှု၊
- မီးစက် လည်ပတ်ခြင်းမှ ထုတ်လွှတ်မှု၊
- လုပ်ငန်းသုံးယာဉ်များ သွားလာခြင်းမှ ထုတ်လွှတ်မှု၊

လုပ်ငန်းလည်ပတ်ချိန်တွင် လေအရည်အသွေးအား အဓိက ထိခိုက်သက်ရောက်နိုင်မှု(၃) မျိုးမှာ-

- (၁) ဆန်ထုတ်လုပ်ခြင်းအဆင့်ဆင့်မှ ထွက်ရှိလာသည့် အမှုန်အမွှား (PM₁₀)- အလယ်အလတ်အဆင့်
- (၂) မော်တော်ယာဉ်များမှ ထုတ်လွှတ်မှု - အလယ်အလတ်အဆင့်
- (၃) အရံဒီဇယ်ဂျင်နရေတာမှ ထုတ်လွှတ်မှု- လျစ်လျူရှုထားနိုင်သည့်အဆင့်

ဆူညံသံ

လုပ်ငန်းလည်ပတ်ချိန်တွင် ဆူညံသံအနေဖြင့် အဓိက ထိခိုက်သက်ရောက်နိုင်မှု(၂) မျိုးမှာ-

- (၁) ဆန်ထုတ်လုပ်ခြင်းအဆင့်ဆင့်မှ ထွက်ရှိလာသည့် ဆူညံသံ- လျစ်လျူရှုထားနိုင်သည့်အဆင့်
- (၂) မော်တော်ယာဉ်များနှင့် ဒီဇယ်ဂျင်နရေတာမှ ထုတ်လွှတ်မှု - အလယ်အလတ်အဆင့်

မြေဆီလွှာနှင့် မြေအောက်ရေအရည်အသွေး

လုပ်ငန်းလည်ပတ်ချိန်တွင် မြေဆီလွှာနှင့် မြေအောက်ရေအရည်အသွေးအား ထိခိုက်နိုင်သည့် အဓိက ညစ်ညမ်းမှု ဖြစ်နိုင်ခြေ (၃) မျိုးမှာ-

- (၁) စက်ရုံဝန်ထမ်းများအနေဖြင့် နေ့စဉ်လုပ်ငန်းဆောင်တာများ လုပ်ဆောင်ခြင်းမှ စားကြွင်း စားကျန်များ၊ သန့်ရှင်းရေးသုံးရေများ ထွက်ရှိမှု- လျစ်လျူရှုထားနိုင်သည့်အဆင့်

(၂) လောင်စာဆီ သိုလှောင်မှုမှ ယိုဖိတ်မှု- လျစ်လျူရှုထားနိုင်သည့်အဆင့်

(၃) လုပ်ငန်းသုံးယာဉ်များနှင့် မီးစက်များမှ ဆီမတော်တဆ ဖိတ်စင်ခြင်း- လျစ်လျူရှုထားနိုင်သည့်အဆင့်

စွန့်ပစ်အမှိုက်နှင့် ရေဆိုး

လုပ်ငန်းလည်ပတ်ချိန်တွင် အဓိက ထိခိုက်သက်ရောက်မှုများမှာ-

(၁) စက်ရုံဝန်ထမ်းများအနေဖြင့် နေ့စဉ်လုပ်ငန်းဆောင်တာများ လုပ်ဆောင်ခြင်းမှ စားကြွင်း စားကျန်များ- လျစ်လျူရှုထားနိုင်သည့်အဆင့်

(၂) ဆန်စပါးသန့်ရှင်းရေးလုပ်ငန်းစဉ်မှ ရေဆိုးထွက်ရှိမှု- လျစ်လျူရှုထားနိုင်သည့်အဆင့်

(၃) သန့်ရှင်းရေး သုံးရေနှင့် မိလ္လာရေဆိုးထွက်ရှိမှု - လျစ်လျူရှုထားနိုင်သည့်အဆင့်

(၄) လောင်စာဆီ သိုလှောင်မှုမှ ယိုဖိတ်မှု- လျစ်လျူရှုထားနိုင်သည့်အဆင့်

(၅) လုပ်ငန်းသုံးယာဉ်များနှင့် မီးစက်များမှ ဆီမတော်တဆ ဖိတ်စင်ခြင်း- လျစ်လျူရှုထားနိုင်သည့်အဆင့်

ဂေဟစနစ်

စီမံကိန်းဧရိယာတွင် သိသာထင်ရှားသော အပင်နှင့် သက်ရှိသတ္တဝါများနေထိုင်မှု မရှိသည့်ပြင် ကာကွယ်စောင့်ရှောက်ထားသည့် ဧရိယာများနှင့် ဝေးကွာသဖြင့် ဂေဟစနစ်အပေါ် သက်ရောက်မှုအား လျစ်လျူရှုထားနိုင်သည့်အဆင့်အဖြစ် သတ်မှတ်နိုင်ပါသည်။

လူမှုဝန်းကျင်အားသက်ရောက်မှုများ

လုပ်ငန်းလည်ပတ်ချိန်တွင် အဓိက ထိခိုက်သက်ရောက်မှုများမှာ-

(၁) တစ်ပတ်လျှင် ထရပ်ကား စီးရေ (၂၀) မှ (၅၀) ထိ ကုန်းလမ်းမှ စက်ရုံသို့ ကုန်ကြမ်းများ ပို့ဆောင်ရန် ဝင်ရောက်ခြင်းနှင့်ထွက်ကုန်များအား ပို့ဆောင်သယ်ယူခြင်းအတွက် ယာဉ်ကြော ပိတ်ဆို့မှု- အမြင့်ဆုံးအဆင့်

(၂) ရွှေ့ပြောင်းလုပ်သားများ တိုးပွားလာမှု- အလယ်အလတ်အဆင့်

(၃) ဒေသတွင်းစီးပွားရေးတိုးတက်မှု- အမြင့်ဆုံးအဆင့်

(၄) ခလေးသူငယ်အလုပ်သမားတိုးပွားလာမှု- အမြင့်ဆုံးအဆင့်

(၅) ဒေသတွင်းလုံခြုံမှုမရှိခြင်း- အမြင့်ဆုံးအဆင့်

(၆) လုပ်ငန်းခွင် ဘေးအန္တရာယ်ကင်းရှင်းရေး- အလယ်အလတ်အဆင့်

ဖျက်သိမ်းခြင်းကာလ

ဖျက်သိမ်းခြင်းကာလအတွင်း အဓိက ထိခိုက်သက်ရောက်မှုများမှာ-

- စီမံကိန်းဖျက်သိမ်းခြင်းကာလအတွင်း အသုံးပြုသော အဆောက်အအုံဖျက်သည့် ယာဉ်၊ ယန္တရားများကြောင့် ပတ်ဝန်းကျင်ဆိုင်ရာ လေအရည်အသွေး ညစ်ညမ်းမှုများ ဖြစ်ပေါ်နိုင်ခြင်း - အလယ်အလတ်အဆင့်

- စက်ရုံဖျက်သိမ်းရာ၌ အသုံးပြုသော ယာဉ်များ၊ ပတ်ဝန်းကျင်နှင့် လိုက်လျောညီထွေ မရှိသော စက်ကိရိယာကြီးများကြောင့် ပတ်ဝန်းကျင်နှင့် အလုပ်သမားများအပေါ် ထိခိုက်မှုများ ဖြစ်ပေါ်နိုင်ခြင်း- အမြင့်ဆုံးအဆင့်
- အလုပ်သမား၊ ဝန်ထမ်းများ၏ နစ္စဓူဝ အလုပ်များမှ အမှိုက်များ၊ အညစ်အကြေးများ၊ ရေဆိုးများ ထွက်ရှိနိုင်ခြင်း- အလယ်အလတ်အဆင့်
- စက်ရုံဖျက်သိမ်းခြင်းမှ ရေဆိုးများ ထွက်ရှိနိုင်ခြင်းနှင့် စက်ရုံဖျက်သိမ်းသော စက်ပစ္စည်းများမှ လောင်စာ ဆီများ ယိုဖိတ်နိုင်ခြင်းမှ မြေဆီလွှာနှင့် မြေအောက်ရေညစ်ညမ်းခြင်း- အလယ်အလတ်အဆင့်

၁.၁၁ ထိခိုက်မှုများအား လျော့ချနိုင်မည့် အစီအစဉ်နှင့် ကြွင်းကျန်သက်ရောက်မှု

လည်ပတ်ခြင်းကာလ

- စက်ရုံလုပ်ငန်းခွင်အတွင်း အမှုန်အမွှားများ ထွက်ရှိမှုအား ထိန်းချုပ်နိုင်ရန် အမှုန်စုပ်စက် (Dust Collector)၊ လေမှုတ်ထုတ်သည့်စက် (Exhaust Fan) နှင့် လေသန့်စင်သည့်စက် (Roof Ventilator) များ တပ်ဆင်ခြင်း၊
- စက်ပစ္စည်းများအား ရေရှည်အသုံးပြုနိုင်ရန် ပြုပြင်ထိန်းသိမ်းခြင်း၊
- ဖုန်မှုန့်များထွက်ရှိသော အဝင် ကားလမ်းအား ရေဖြန်းခြင်း၊
- ဝန်ထမ်းများအား တစ်ကိုယ်ရည် ကာကွယ်ရေးသုံးကိရိယာများ တပ်ဆင်လုပ်ကိုင်စေခြင်း၊
- မိလ္လာစနစ်နှင့်ရေမြောင်းများကို ပုံမှန်သန့်ရှင်းရေးပြုလုပ်ခြင်းနှင့် ပုံမှန်စစ်ဆေးခြင်း၊
- ဂျင်နရေတာနှင့် လုပ်ငန်းသုံးယာဉ်များမှ ဆီများ ဖိတ်စင်မှု မရှိစေရန် ပုံမှန် စစ်ဆေးမှုများ ပြုလုပ်ခြင်း၊
- ဘေးပတ်ဝန်းကျင်သို့ ဆူညံသံနှင့် တုန်ခါမှုများ မဖြစ်ပေါ်စေရန် အဆိုပါ ဆူညံသံ ထွက်ရှိရာ နေရာများအား လုံခြုံစွာ ကာရံထားခြင်း၊
- ဆူညံသံများသော နေရာများတွင် လုပ်ကိုင်သော လုပ်သားများကို အလှည့်ကျ လုပ်ကိုင်စေခြင်း၊
- စက်ရုံဝင်းအတွင်း သစ်ပင်၊ ပန်းပင်များ စိုက်ပျိုးထိန်းသိမ်းခြင်း၊
- မီးသတိပေးစနစ်၊ မီးသတ်စနစ်၊ မီးသတ်ဆေးဘူးများ၊ အရေးပေါ်တံခါးပေါက်၊ လှေကား နှင့် အရေးပေါ် စုရပ်များအား ထားရှိပေးခြင်း၊
- မီးသတ်ဌာနနှင့်ဆက်သွယ်၍ စီမံကိန်းရှိဝန်ထမ်းများအား မီးဘေးအန္တရာယ်နှင့် မီးသတ်ခြင်းဆိုင်ရာ လုပ်ငန်းများအား လေ့ကျင့်ပေးခြင်း၊
- လုပ်သားများအား ပုံမှန်ကျန်းမာရေးစစ်ဆေးပေးခြင်း၊ ကျန်းမာရေး စောင့်ရှောက်မှုပေးခြင်း၊
- ဝန်ထမ်းများအား လုပ်ငန်းခွင်ဘေးအန္တရာယ်ကင်းရှင်းရေးဆိုင်ရာ သင်တန်းများအား စေလွှတ်၍ စက်ရုံတွင် ဆင့်ပွားသင်တန်းများပြုလုပ်ပေးခြင်း၊
- စက်ရုံတွင် စွန့်ပစ်ပစ္စည်းများအား ပြန်လည်အသုံးပြုနိုင်သောပစ္စည်း၊ စွန့်ပစ်ရန်ပစ္စည်းများနှင့် ဘေးအန္တရာယ်ရှိသော စွန့်ပစ်ပစ္စည်းများဟူ၍ ခွဲခြား စွန့်ပစ်ခြင်း၊ YCDC သန့်ရှင်းရေးဌာနအား အကြောင်းကြားပြီး သိမ်းဆည်းစေခြင်း၊

ဖျက်သိမ်းခြင်းကာလ

- ဖျက်သိမ်းရေး လုပ်ငန်းသုံးစက်များကို အသုံးမပြုစဉ်ကာလတွင် စက်ပိတ်ထား၍ ပတ်ဝန်းကျင်သို့ အခိုးအငွေ့ ထွက်ရှိမှုအား နည်းနိုင်သမျှနည်းအောင် ထိန်းချုပ် ဆောင်ရွက်ခြင်း၊
- လုပ်ငန်းသုံးယာဉ်များနှင့် စက်ပစ္စည်းများအား ပုံမှန်စောင့်ကြပ်ကြည့်ရှုခြင်းနှင့် ပြုပြင်ထိန်းသိမ်းခြင်း၊
- အမှုန်အမွှားများထွက်ရှိမှုနည်းပါးစေရန် စီမံကိန်းအတွင်း ရေဖြန်းခြင်း၊
- စွန့်ပစ်ပစ္စည်းများအား မီးရှို့ခြင်း မပြုလုပ်ခြင်း၊
- ဖျက်သိမ်းခြင်းကာလ၌ သွယ်ယူထားသော ပိုက်လိုင်းများကို စနစ်တကျ ပြန်လည်ဖြုတ်ယူခြင်းနှင့် ပြန်လည်အသုံးပြုစေခြင်း၊
- ဆူညံသံထွက်သောစက်၊ ပစ္စည်းကိရိယာများကို အသုံးမပြုချိန် ကြားကာလတွင် ပိတ်ထားရန်နှင့် ဆူညံမှုပြင်းထန်သည့်စက်၊ ကိရိယာများကို ယှဉ်ပြိုင်အသုံးပြုခြင်းတို့မှ အတတ်နိုင်ဆုံး ရှောင်ကြဉ် ဆောင်ရွက်ခြင်း၊
- မီးသတ်ဘူးများ၊ မီးသတ်ရေသိုလှောင်ကန်များ ထားရှိခြင်းနှင့် မီးဘေးအန္တရာယ် နှင့်ပတ်သက်သည့် ဆိုင်းဘုတ်များတပ်ဆင်ခြင်း၊
- လျှပ်စစ်ဝါယာကြိုးများအား ဂရုတစိုက်ဖြုတ်၍ သိမ်းဆည်းခြင်း၊
- သတိပေးဆိုင်းဘုတ်များ တပ်ဆင်ပေးခြင်းနှင့် တစ်ကိုယ်ရည်ကာကွယ်ရေး အသုံးအဆောင်ပစ္စည်းများ အသုံးပြုစေခြင်း၊
- အမှိုက်ပုံများထားရှိပေးခြင်းနှင့် သတ်မှတ်ထားသော ဧရိယာတွင်စွန့်ပစ်ခြင်း၊
- လုပ်ငန်းခွင်အတွင်း ယာယီယင်လုံအိမ်သာများ စနစ်တကျ တည်ဆောက်၍ လုံလောက်စွာ ထားရှိပေးခြင်း၊
- အရေးပေါ်သုံးဆေးဝါးများနှင့် ဆေးသေတ္တာများအား လက်လှမ်းမှီရာတွင် ထားရှိခြင်း၊
- ဝန်ထမ်းများအတွက် သောက်သုံးရေကို လုံလောက်စွာ ထားရှိပေးခြင်း၊
- ဖျက်သိမ်းရေး လုပ်ငန်းခွင်ရှိရုံးများ၊ လုပ်သားမိသားစုများမှ စွန့်ပစ်သော အမှိုက်များနှင့် မီးဖိုချောင် သုံးစွန့်ပစ်ပစ္စည်းများကို သင့်တော်သောနေရာတွင် စနစ်တကျစုပုံစွန့်ပစ်ခြင်း၊ ဖုံးအုပ်ထားခြင်းနှင့် အန္တရာယ်ရှိသော စက်မှု လုပ်ငန်းဆိုင်ရာ စွန့်ပစ်ပစ္စည်းများကို လုံခြုံစွာ ထုတ်ပိုး၍ သတ်မှတ်ထားသော နေရာများသို့ စနစ်တကျစွန့်ပစ်ခြင်း၊

၎င်းနှင့်ပတ်သက်သည့် အသေးစိတ် အချက်အလက်များနှင့် ကြွင်းကျန်သက်ရောက်မှုများကို အခန်း (၆) တွင် ဖော်ပြထားပါသည်။

၁.၁၂ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်အကျဉ်းချုပ်

Golden Lace POSCO International Co., Ltd. ၏ ဆန်စက်လုပ်ငန်းအနေဖြင့် ပတ်ဝန်းကျင်စီမံ ခန့်ခွဲမှုအစီအစဉ်များတွင် အဓိကအားဖြင့် စက်ရုံလုပ်ငန်းကြောင့် ထိခိုက်နစ်နာနိုင်မှုများအား လျော့ပါးသက်သာ စေရေးကို အစဉ်တစိုက် အလေးပေး ဂရုပြု ဆောင်ရွက်သွားရမည် ဖြစ်သည့်အပြင် လုပ်ငန်း လုပ်ဆောင်ရာတွင် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်များကို လိုက်နာဆောင်ရွက်ရပါမည်။ ယင်းပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်တွင်

အစီအစဉ် (၅) ခု ရေးဆွဲထားပါသည်။ ၎င်းတို့မှာ ပတ်ဝန်းကျင်ထိခိုက်မှု လျော့ချရေး/ ကာကွယ်မှုအစီအစဉ်၊ ပတ်ဝန်းကျင်စောင့်ကြပ်ကြည့်ရှုစစ်ဆေးမည့်အစီအစဉ်၊ ကျန်းမာရေးနှင့် ဘေးအန္တရာယ် ကင်းရှင်းရေး အစီအစဉ်၊ အရေးပေါ်အခြေအနေတုံ့ပြန်မှုအစီအစဉ်၊ ဝန်ထမ်းများအတွက် အသိပညာပေးနှင့် သင်တန်း အစီအစဉ်နှင့် လူမှုရေးဆိုင်ရာ တာဝန်ယူမှု အစီအစဉ်များ ဖြစ်ပါသည်။

Golden Lace POSCO International Co., Ltd. အနေဖြင့် ယင်းအစီအစဉ် များကို အကောင်အထည်ဖော် ဆောင်ရွက်ရန် လိုအပ်ပါသည်။ ထို့အပြင် အကောင်အထည်ဖော် ဆောင်ရွက်လျက် ရှိသည့် ယင်းအစီအစဉ်များ ကိုလည်း ကြီးကြပ်ရန်နှင့် စောင့်ကြပ်ကြည့်ရှုရန် တာဝန်ရှိပါသည်။ ယင်းအစီအစဉ်များကို အကောင်အထည်ဖော် ဆောင်ရွက်ခြင်းအားဖြင့် လုပ်ငန်းလုပ်ဆောင်ခြင်းကြောင့် ဖြစ်ပေါ်နိုင်ခြေရှိသော ပတ်ဝန်းကျင်နှင့် လူမှုရေး အပေါ် ဆိုးကျိုးသက်ရောက်မှုများကို လျော့နည်းစေနိုင်မည် ဖြစ်ပါသည်။ စီမံကိန်း ဆောင်ရွက်သည့် တာဝန်ရှိသူများ အနေဖြင့်လည်း ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်များကို ပုံမှန်စစ်ဆေးခြင်း နှင့် စက်ရုံလည်ပတ် နေသည့်ကာလ တစ်လျှောက်လုံး ပုံမှန်စောင့်ကြပ်ကြည့်ရှုစစ်ဆေးခြင်းကို ပြုလုပ်သင့်ပါသည်။ ၎င်းနှင့်ဆက်စပ်လျက်ရှိသော အသေးစိတ် အကြောင်းအရာများကို အခန်း (၇) တွင် ဖော်ပြ ထားပါသည်။

၁.၁၃ အများပြည်သူသဘောထားရယူခြင်းနှင့် သတင်းအချက်အလက်ဖြန့်ဝေခြင်း

Environ Myanmar အနေဖြင့် အစီရင်ခံစာအားရေးဆွဲစဉ် စီမံကိန်းနှင့်သက်ဆိုင်သူများနှင့် တွေ့ဆုံ ဆွေးနွေးပွဲအား စီမံကိန်းဧရိယာ၏ အစည်းအဝေးခန်းမတွင် ၂၀၁၅ ခုနှစ်တွင် ကျင်းပခဲ့ရာတွင် ပါဝင်ဆွေးနွေးခဲ့သည့် တက်ရောက်သူဦးရေ (၁၅) ဦး တက်ရောက်ခဲ့ပါသည်။

စစ်တမ်းရလဒ်များက ဖြေဆိုသူအားလုံးသည် စီမံကိန်းအကြောင်းကို သတိပြုမိကြောင်း ပြသခဲ့ပါသည်။ ဤစီမံကိန်းသည် ဂိုဒေါင်တစ်ရုံတည်ဆောက်မှုနှင့် ဆန်စက်လည်ပတ်မှုအတွင်း အလုပ်အကိုင် အခွင့်အလမ်းများ ပေးစွမ်းနိုင်သည်ဟု ယူဆသောကြောင့် စီမံကိန်းကို ဆက်လက်လုပ်ဆောင်သင့်သည်ဟု ဖြေဆိုသူအများစုက သဘောတူကြသည်။ ဆန်စက်တွင် လုပ်ကိုင်နေသော ဖြေဆိုသူများသည် ဆန်စက်၏ ထုတ်လုပ်မှု တိုးမြှင့်လာပါက ကုမ္ပဏီတွင် ဆက်လက်လုပ်ကိုင်နိုင်ခွင့်ကို ရရှိစေမည်ဟု မျှော်လင့်ပါသည်။

အဆိုပါ ၂၀၁၅ခုနှစ်တွင် ကျင်းပခဲ့သည့် တွေ့ဆုံဆွေးနွေးပွဲသို့ တက်ရောက်ခဲ့သည့် ပြည်သူများ၏ လက်မှတ်ရေးထိုးထားသည့် မှတ်တမ်းများအား တင်ပြနိုင်ခြင်းမရှိပါသဖြင့်လည်းကောင်း၊ Environmental Compliance Consultancy Co., Ltd (EnvCC) အနေဖြင့်လည်း ပြည်သူများ၏ တင်ပြချက်များအား ပိုမိုခိုင်မာ စေရန်ရည်ရွယ်၍ (၁၅-၅-၂၀၂၅) ရက်နေ့တွင် ထပ်မံ၍ ဆန်စက်၏ အစည်းအဝေးခန်းမတွင် ပြည်သူများနှင့် တွေ့ဆုံမှု ပြုလုပ်ခဲ့ ပါသည်။ တက်ရောက်ခဲ့သည့် လူဦးရေမှာ (၁၆)ဦး ဖြစ်ပါသည်။

ထိုသို့တွေ့ဆုံဆွေးနွေးရာတွင် တက်ရောက်လာသူပြည်သူများမှ အောက်ပါအချက်များအား ဆွေးနွေးခဲ့ကြပါသည်။

- (၁) မှတ်ချက်အနေဖြင့် စက်ရုံမှ ရေဆိုးများ စွန့်ပစ်ခြင်း မရှိကြောင်း ပြောကြားပြီး ပြည်တွင်း ဆန်လုံးညှိနှင့် ဖွဲနု ရောင်းဝယ်ရေး မြှင့်တင်မှုအရ ပြည်တွင်းလုပ်ငန်းရှင်များအနေဖြင့် ဤစီမံကိန်းကို လက်ခံပါ ကြောင်း တင်ပြခဲ့ပါသည်။

(၂) ဆွေးနွေးမှုအပေါ်အရလည်းကောင်း၊ ဆန်စက်မှ တာဝန်ရှိသူများမှ ဆန်စက်လုပ်ငန်းစဉ်အဆင့်ဆင့်တွင် နိုင်ငံတကာ အဆင့်အတန်းနှင့်အညီ လုပ်သားများအား လုပ်ကိုင်စေခြင်း၊ လုံခြုံရေးနှင့် ပတ်ဝန်းကျင် ထိန်းသိမ်းရေးတွင်လည်း ဦးစားပေးအဆင့်အဖြစ် တာဝန်ယူလုပ်ကိုင်လျက်ရှိသည့်အပြင် မည်သည့် အန္တရာယ်ရှိသည့် အမှိုက်နှင့် ရေဆိုးများအား တူးမြောင်းအတွင်း တိုက်ရိုက်စွန့်ပစ်ခြင်း မပြုသည့်အပြင် ဒေသတွင်းစီးပွားရေးကို မြှင့်တင်နိုင်သည့်အတွက် စီမံကိန်းလုပ်ဆောင်ချက်နှင့် ပတ်သက်၍ မည်သည့် မကျေနပ်ချက်မှ မရှိပါကြောင်းအား ပြောကြားခဲ့ပါသည်။

(၂) Golden Lace POSCO International Co., Ltd. အနေဖြင့် CSR အစီအစဉ်အရ စီမံကိန်း အနီး ဝန်းကျင် တွင် နေထိုင်သူများအတွက် သန့်ရှင်းသည့် သောက်သုံးရေများနှင့် လျှပ်စစ်မီး ပံ့ပိုးပေးရန် တင်ပြခဲ့ သည့်အပေါ် တာဝန်ခံမှ ကုမ္ပဏီ၏ တာဝန်ရှိသူများထံ ဆက်လက်တင်ပြ၍ ဆောင်ရွက်ပေးမည် ဖြစ်ပါကြောင်းအား ပြောကြားခဲ့ပါသည်။

သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာနမှ ထုတ်ပြန်ထားရှိသည့် ပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ထုံးလုပ်နည်း (၂၀၁၅) အရ စီမံကိန်းနှင့် ပတ်သက်ဆက်နွှယ်သော ပြည်သူများနှင့် ဒေသဆိုင်ရာ အာဏာပိုင်များနှင့် ပုံမှန် ဆက်သွယ်ခြင်းဖြင့် သတင်းအချက်အလက်များ ထုတ်ဖော်ရာတွင် လွယ်ကူ ချောမွေ့စေရန် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာနမှ အတည်ပြုချက်ရရှိပြီးသည့် အစီရင်ခံစာမှ အကျဉ်းချုပ် (မြန်မာဘာသာဖြင့်)အား ဒေသခံများအား ဖြန့်ဝေပေးသွားမည့်အပြင် စီမံကိန်းလုပ်ဆောင်မှုကြောင့် ထိခိုက် ခံစားရမှုများအား ထုတ်ဖော်ဖြေရှင်းနိုင်ရန် သတင်းအချက်အလက်စင်တာတစ်ခုအား တည်ထောင်ပြီး ဆောင်ရွက် သွားမည်ဖြစ်ပါသည်။

၁.၁၄ ပတ်ဝန်းကျင်စောင့်ကြပ်ကြည့်ရှုရေး အစီအစဉ်နှင့် ရံပုံငွေ

ပတ်ဝန်းကျင်စောင့်ကြပ်ကြည့်ရှုရေးအစီအစဉ်အကျဉ်းနှင့် ရံပုံငွေအား ဇယား ၁.၁ တွင် တင်ပြထားပါသည်။

ဇယား ၁.၁ ပတ်ဝန်းကျင်စောင့်ကြပ်ကြည့်ရှုရေးအစီအစဉ်အကျဉ်းနှင့် ရံပုံငွေ

တိုင်းတာမည့် နယ်ပယ်	တိုင်းတာမည့် အရည်အသွေးများ	တိုင်းတာမည့် နေရာ	တိုင်းတာမည့် အကြိမ်အရေအတွက်	နှစ်စဉ်ခန့်မှန်း အသုံးစရိတ် (ကျပ်)
လေအရည်အသွေး	NOx, SO2, PM2.5, PM10 and O2	♦ Project area at (A 1) 16°54'28"N, 96° 0.4'14"E	ခြောက်လတစ်ကြိမ် (ECD သို့ တင်ပြရန်)	၂,၀၀၀,၀၀၀
ဆူညံသံ	ဆူညံသံအဆင့် (dB (A) scale)	♦ Project area at (A 1) 16°54'28"N, 96° 0.4'14"E	ခြောက်လတစ်ကြိမ် (ECD သို့ တင်ပြရန်)	၁၀၀,၀၀၀
ရေထုအရည်အသွေး	Alkalinity (Alk), Magnesium (Mg ++), Sodium (Na+), Potassium (K+), Total Hardness (TH), Sulfate (SO4-), Chloride (Cl-), Iron (Fe), Dissolve Oxygen (DO), Chemical Oxygen Demand (COD), Biochemical Oxygen Demand (BOD), pH, Ammonia-Nitrogen (NH3-N), Turbidity, Salinity, Arsenic (As), Lead (Pb)	♦ Groundwater (GW-1) 16°54'29.01"N, 96° 4'14.36"E ♦ Groundwater (GW-2) 16°54'29.83"N, 96° 4'14.08"E ♦ Effluent 16°54'28.06"N, 96° 4'10.55"E	ခြောက်လတစ်ကြိမ် (ECD သို့ တင်ပြရန်)	၂,၄၀၀,၀၀၀
မြေအရည်အသွေး	pH, Salinity Electrical Conductivity, Cation Exchangeable Capacity, Potassium (Potash)	♦ (S-1) 16°54'26.78"N, 96° 4'10.69"E	ောက်လတစ်ကြိမ် (ECD သို့ တင်ပြရန်)	၅၀၀,၀၀၀

တိုင်းတာမည့် နယ်ပယ်	တိုင်းတာမည့် အရည်အသွေးများ	တိုင်းတာမည့် နေရာ	တိုင်းတာမည့် အကြိမ်အရေအတွက်	နှစ်စဉ်ခန့်မှန်း အသုံးစရိတ် (ကျပ်)
ဘေးအန္တရာယ်ကင်းရှင်းရေးနှင့် ကျန်းမာရေးဆိုင်ရာ ထိခိုက်မှု	လျှပ်စစ်အန္တရာယ်နှင့် မီးဘေး အန္တရာယ်	စီမံကိန်းဧရိယာအတွင်းရှိ မီးကြိုများများ ၎င်းတို့၏ ဆက်စပ်ပစ္စည်းများနှင့် မီးလောင်လွယ်သည့် နေရာများ	လစဉ်	၁,၀၀၀,၀၀၀
	မတော်တဆထိခိုက်မှု မှတ်တမ်းများ	စီမံကိန်းဧရိယာအတွင်းရှိ လုပ်ငန်းခွင်နေရာ	လစဉ်	

၁.၁၅ နိဂုံးနှင့် အကြံပြုချက်

စီမံကိန်းလုပ်ဆောင်မှုမှ ထိခိုက်သက်ရောက်မှုများအား ကြိုတင်ခန့်မှန်းခြင်းဖြင့် ထိခိုက်သက်ရောက်မှုများအား ရှောင်ရှားခြင်း၊ လျော့ချခြင်းများအား ဆောင်ရွက်နိုင်သဖြင့် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်အရ လျော့ပါးသက်သာစေရေးအား အကောင်အထည်ဖော်ဆောင်ရွက်ခြင်း၊ ဆောင်ရွက်ထားရှိမှုအပေါ် အကဲဖြတ် စောင့်ကြပ်ကြည့်ရှုခြင်းဖြင့် စီမံကိန်းဖွံ့ဖြိုးတိုးတက်မှုအား ရေရှည်ဆောင်ရွက်နိုင်မည်ဖြစ်ပါသည်။

ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းဆိုင်ရာလေ့လာမှုမှ အကဲဖြတ်ထားရှိသည့် သက်ရောက်မှုအများစုသည် အနည်းငယ်သာဖြစ်ပြီး လျော့ပါးသက်သာစေရေးအစီအမံများကို အကောင်အထည်ဖော်ဆောင်ရွက်ခြင်းဖြင့် ထိခိုက်သက်ရောက်မှုများ လျော့နည်းသွားနိုင်မည်ဖြစ်ပါသည်။

စီမံကိန်းဆောင်ရွက်သူအနေဖြင့်လည်း စီမံကိန်းကာလတစ်လျှောက်တွင် ဖြစ်ပေါ်လာနိုင်မည့် စိုးရိမ်ပူပန်မှုများအား လျော့ပါးသက်သာစေရန် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးအစီအမံများအား သေချာစေရပါမည်။

1. EXECUTIVE SUMMARY

1.1 Introduction

This report is an Initial Environmental Examination (IEE) report prepared for rice milling project of Golden Lace POSCO International Co., Ltd. The project is located in the Shwe Lin Ban Industrial Area (Hlaing Thar Yar Township, Yangon). It is covering an area of (3.388) acres.

The existing Golden Lace - Daewoo currently has two lines and two warehouses. The proponent plans to add one warehouse to augment its storage capacity. The two lines have the capacity of milling 100 tons and 60 tons per day (total 160 tons per day).

The Yangon Regional Environmental Conservation Department requested comments on this project and was asked to prepare an Initial Environmental Examination (IEE). Based on the comments, Golden Lace POSCO International Co., Ltd. commissioned ENVIRON Myanmar Co. Ltd to prepare an Initial Environmental Examination (IEE) report. ENVIRON Myanmar Co. Ltd prepared this Environmental Management Report in accordance with the Environmental Impact Assessment Guidelines set by the Ministry of Natural Resources and Environmental Conservation.

This report is a revised version of the report, which was commissioned by Environmental Compliance Consultancy Co., Ltd. to prepare the initial findings and recommendations of Environmental Conservation Department (ECD), Ministry of Natural Resources and Environmental Conservation (MoNREC).

1.2 Objectives of IEE

The purpose of this IEE and the associated Environmental Management Plan (EMP) is to determine the nature and extent of the potential environmental and social impacts that may arise from the construction and operation of the Rice Mill project and its associated activities, and to implement measures to mitigate those impacts.

1.3 Project Description

Golden Lace POSCO International Co., Ltd plans to add one warehouse to augment its storage capacity. The two lines have the capacity of milling 100 tons and 60 tons per day (total 160 tons per day).

The company registration number of the company is (105036248).

The project aims to produce both white rice and high quality export rice, which is pre-treated to preserve nutritional values and quality.

As a whole, the establishment of the project consists of Expansion/ construction and milling process.

The factory mainly consists of (3) Warehouses.

The storage capacity of 3 warehouse is as follow.

- ◆ Raw (WR Raw / BR) = 5846 MT,
- ◆ By product = 1020 MT
- ◆ Finished good = 1237.5 MT

Rice Processing Complex process consists of 8 steps as follow.

- 1) Raw Feeding Section: White rice or par boiled rice or white rice raw is transported to the cleaning machine.
- 2) Cleaning Section: Light carbage and dust / points are removed through the air intake of the cleaner machine.
- 3) Destoner Section: The Destoner machine vibrates to remove any iron particles and stones that may be present in cleaned white rice, parboiled rice, or raw white rice.
- 4) Whitening Section: The process of polishing that the cleaned rice to whiten it, removing the silvery layer and bran for giving the rice as a finer appearance.
- 5) Polishing Section: The white rice is polished to a silky white color.
- 6) Grading Section: By removing large and small broken rice, rice types are made to a specific standard size.
- 7) Color Sorting Section: The process of removing colored rice by machine produces white rice.
- 8) Weighing & Packing Section: The milled rice is weighed and packed into sealed bags ready for sale. (Packing marking printing work is made by outsource printing work.)

State of Rice Storage to Prevent Mold, Infection, and Odor: Before transporting RC and raw rice from the importer to the warehouse, samples are taken and checked by the factory QC to ensure that the moisture content is between 14% and 14% and that there are no pests.

According to the QC result, if the moisture is 14% or less and there are no pests, the product is transported to the storage facility by vehicle.

While unloading the truck, a sample is taken from each bag of rice and checked for moisture and bacteria. If it meets the specifications, it is accepted, and if it does not, it is returned to the supplier.

The rice received is accepted by the type of rice in a pallet system.

The pallets are supported by wooden pallets.

The quality of rice in the stored bins is checked weekly and if necessary, the bins are moved, turned upside down, and disinfected with fumigation (Aluminium Phosphide 56% Tablet) if pests are found.

The finished products will be mainly exported to EU and China. A total of (255) types of equipment will be used to operate the business, and (40) employees will work from (9) hours per day, (6) days per week.

The annual electricity consumption is 96,000 KWh, and there are three (3) emergency generators (500/250/9 KV). The water consumption per day will be 600 m³ and the fuel consumption per year will be 1320 gallons. Details on this are provided in Chapter (4).

1.4 Investment for the Proposed Project

The investment period of this project is (50) years and the company is joint venture with local partner and its foreign investment amount is US\$ (4,387,500). The company is foreign direct investment company.

1.5 Alternatives of the Project

In terms of alternative, such area which does not need to take into account the resettlement issue, and no concerns about electricity, availability of water and transport system of Industrial Area (Hlaing Thar Yar Township, Yangon). The industrial estate is situated between No. 4 Highway and Yangon - Pyay Railway line near Shwe Pyi Thar Township.

There are about a hundred small and medium scale industries in the industrial estate. Some areas in the industrial zone are allocated for residential housing.

Therefore, generally the impact on public is not much significant and hence that location was selected for the proposed project.

If the proposed project is not implemented as “No Project”, the following benefits that could not be achieved from the project.

- Creation of local employment opportunities during the development and operation of the project;
- Creation of regional trade and cooperation opportunities;
- Increased tax revenue and economic development opportunities in the Union and Region;
- Development of infrastructure development opportunities in Hlaing Thar Yar Township.

1.6 Presentation of the Project Proponent

With innovative use of modern technology, Golden Lace POSCO International Co., Ltd. produces high export quality rice. Its mission in Myanmar is to curb losses in rice industry's post-harvest stages and to boost productivity yield through the incorporation of providing trainings and modernizing production techniques.

The project proponent and contact details are as follows:

Contact person:	Ms. Tin Htar Phone
Position:	Admin & HR Manager, Golden Lace POSCO INTERNATIONAL CO., LTD
Address:	No. 56, 5 th Floor, Mahaland Building, Kabar Aye Pagoda Road, Yankin Township, Yangon, Myanmar
Phone:	+(95) 9250684959
Email:	htp@gl-pi.com

1.7 Presentation of Third-Party Organization and Experts

Environmental Compliance Consultancy Co. Ltd (EncvCC) is a third-party organization that has obtained an Organization License Type (A) - License No. EIA-CO (A) 005/2024 for conducting Initial Environmental Examination (IEE) and Environmental Impact Assessment (EIA) in accordance with

local and international environmental impact assessment guidelines, procedures, laws and regulations.

The contact details of Environmental Compliance Consultancy Co., Ltd (EnvCC) is as follow;

Contact Person: Daw Myat Mon Swe
Address: (1) No. 20, Neikbainda Street, Lanthit Road, Nanthar Gone Ward,
Insein Township, Yangon, Myanmar
(2) No. (5611), Thitkwa (1) Street, Zawantheikhti Ward,
Ottarathiri Township, Naypyitaw, Myanmar
Telephone: +95 (9) 420111902
Email: myatmonswe@envccmyanmar.com, myatmonswe@gmail.com

1.8 Policy, Legal and Institutional Framework

The policy and legal framework, including existing environmental laws and regulations, international standards and guidelines, related to the rice mill operations of Golden Lace POSCO International Co., Ltd. are as follows. Details are provided in Chapter (3).

- ◆ The National Environment Policy, 2019
- ◆ Myanmar Climate Change Policy, 2019
- ◆ The Constitution of the Republic of the Union of Myanmar, 2008
- ◆ Natural Disaster Management Law, 2013
- ◆ Environmental Conservation Law, 2012
- ◆ Environmental Conservation Rules, 2014
- ◆ Environmental Impact Assessment Procedure, 2015
- ◆ Environmental Quality (Emissions) Guidelines (EQEG), 2015
- ◆ Conservation of Water Resources and Rivers Law, 2006
- ◆ The Protection of Wildlife and Conservation of Natural Area Law, 1994
- ◆ The Conservation of Biodiversity and Protected Area Law, 2018
- ◆ The Protection and Preservation of Cultural Heritage Regions Law, 1998
- ◆ The Protection and Preservation of Antique Objects Law, 2015
- ◆ The Protection and Preservation of Ancient Monuments Law, 2015
- ◆ Myanmar Fire Force Law, 2015
- ◆ Motor Vehicle Law, 2015
- ◆ Public Health Law, 1972
- ◆ The Prevention and Control of Communicable Diseases Law, 1995
- ◆ Occupational Safety and Health Law (The Pyidaungsu Hluttaw Law No.8.2019) (not in force)
- ◆ Employment and Skill Development Law, 2013
- ◆ The Settlement of Labour Dispute Law, 2012

- ◆ The Workmen Compensation Act, 1923 (amended in 1955, 1957, 2005)
- ◆ Labour Organisation Law, 2011
- ◆ Minimum Wages Law (2013) , Notification No. 1/2024
- ◆ Payment of Wages Law, 2016
- ◆ Leaves and Holidays Act, 1951
- ◆ Social Security Law, 2012
- ◆ Law protecting Ethnic Right, 2015
- ◆ Control of Smoking and Consumption of Tobacco Product Law, 2006
- ◆ Prevention from Danger of Hazardous Chemical and Associated Materials Rule, 2016
- ◆ Prevention from Danger of Hazardous Chemical and Associated Materials Law, 2013
- ◆ Myanmar Investment Law, 2016
- ◆ Myanmar Investment Rules, 2017
- ◆ Foreign Investment Law (2012)
- ◆ Yangon City Development Law (2018)
- ◆ The Import and Export Law, 2012

1.9 Description of Surrounding Environmental and Social Conditions

Overwhelming flat terrain approximately 4.3 m above mean sea level constitutes the project landscape. The project land plot is situated inside a moderately populated industrial zone in Shwe Lin Ban.

The project area has a warm and humid climate with average temperature of (25°C) and the annual rainfall is 2276 mm (89.6 inch).

Although the rice mill is a rice processing business, it is not made from paddy, but rather from brown rice, which is purchased as raw material and produces rice. Therefore, there is less dust and emission in the mill, and since electricity is mainly used in the operation, the potential for hazardous fumes is also low.

Based on the existing testing for the environmental baseline survey since 2015, an updated environmental sampling points within the rice mill conducted in 2025 were also conducted and found to be within the National Environmental Quality Emission Guidelines (NEQG) except for sulfur dioxide.

This is because sulfur dioxide is produced during fuel combustion, so the location of the rice mill is lying in the industrial zone, so it is possible that it is emitted from fuel combustion by vehicles.

To determine whether the project activities are causing environmental noise pollution, noise levels inside the rice mil were measured using a Digital Sound Level Meter. It was found that the noise levels did not exceed the National Environmental Quality Guidelines (NEQG) during the day, but exceeded the limits by 15 dBA at night.

It was found that this may be due to the noise of vehicles moving around the area.

To obtain information on the soil quality of the project, soil samples were collected from a depth of 3 meters within the project area. The samples were carefully packaged and transported to the

laboratory at the Irrigation Department (2015) and Land Use Department (2025) of the Ministry of Agriculture, Livestock and Irrigation. Soil samples were tested and found to be in a suitable condition for agriculture and had a minimum potassium content.

To obtain information on the water quality of the project, samples of ground water and Effluent were collected and sent to the Irrigation Department (2015) and Ecological laboratory (2025) for testing. The results of the measured the ground water quality showed that Ammonia-Nitrogen (NH₃-N) and Turbidity were found to be above the limits, while the remaining parameters were found to be within the standard.

Based on the analysis of published information, public interviews, and studies on the bio-environmental data of the project area, the following summary findings were obtained.

- (1) A total of 59 plant species were recorded in the Hlaing Thar Yar area. There are 12 species of herb, 6 species of climber or creeper, 11 species of small tree and 25 species of tree, and 5 species of shrub were also recorded. The Padauk tree were found to be growing as Endangered spp.(EN).
- (2) 2 species of mammals were observed in the study area. There are Grey squirrel (*Callosciurus pygerythrus*), and Farm-coloured mouse (*Mus cervicolor*) was recorded. According to the IUCN Red List (2024-2), there was no threatened species and no endemic species in this area.
- (3) A total of 4 species of amphibian and reptile were recorded in the survey period through interviewed and observation. There are 1 species of lizard and 3 species of snake.
- (4) A total of 23 bird species were recorded in the project area. According to the IUCN red list of threatened species (2024-2), there are no endemic species in the survey area.
- (5) A total of 16 butterfly species are recorded in the survey area. According to the IUCN red list (2024-2), Peacock pansy (*Junonia almanac*) is least concern. There are no threatened species and no endemic species.
- (6) A total of 2 dragonfly species were identified around the survey area. According to the IUCN red list of threatened species, there was no threatened species and no endemic species.
- (7) A total of 11 fish species were identified within the survey area. There are no endemic species in the survey area.
- (8) The closest protected area to the project is the Hlawka Park located in Mingalardon Township, north of Yangon, and will not be affected by project activities.

The following is a summary of the findings of the study on the social environment of the project area in Shwe Lin Ban area.

- ◆ The population, population growth rate, family size, density and distribution are, to a large extent, related to the socio-economic status of the inhabitants.
- ◆ School enrolment rate of 5 years old children is 100% but percentage of students eligible for university is only about 30.72 %.
- ◆ It was found that families with (2) to (3) members and (4) to (8) members accounted for 45% of the total.
- ◆ Most of the houses were made of wood and some were made of Brick with Wood.

- ◆ Most Households use solar electricity, and it was found that the highest usage was in 15 Ward. Motorcycles and bicycles were also found to be the most common in everywhere. Mobile phones are available to everyone around the project area.
- ◆ Electricity of national grid is mainly used for cooking, and groundwater is extracted from hand pump and wells for drinking.
- ◆ The main source of income is industrial workers and home-based activities (especially motorcycle repair) is also source of income. The annual income is 30-100 million Kyat.
- ◆ For health care, it is rely only the government township and private hospitals, and clinics. As for infectious diseases, the tuberculosis, which used to occur frequently in the past, is now almost non-existent
- ◆ There is a designated area for waste disposal, and YCDC comes to collect it.
- ◆ There are not existed Cultural heritage sites around the project area, however The Famous pagoda as historical buildings in Hlaing Thar Yar Township are Aung Myay Thar Yar Pagoda (4.5 km of south of Project Area) and Shwe Yin Aye Pagoda (3.7 km of southern west of Project area).

Details of the environmental data and related issues are provided in Chapter (5).

1.10 Summary of the Identification of Potential Impact Assessment

The project implementation may result in physical, biological, and socio-economic changes to the project area and surrounding environment. The project may have positive and negative environmental and social impacts due to the work carried out on environmental factors such as air quality, water quality, soil quality, noise and vibration, waste (solid and liquid), fire hazard, and occupational health and safety at all project phases (operation and decommissioning).

The analysis was conducted based on the assessment and measurement parameters of the significant environmental and social impacts that may arise from the project activities and their dimensions, such as the magnitude, duration, area, and frequency (likelihood) of the impact.

Since the project construction work has been completed and the project is in operation, the following activities have been analyzed according to the project period (operation phase and decommissioning phase):

Operation Phase

Air Quality

- ◆ The Emission that perform during the transportation of the raw material (brown rice) and the cleaning stage at the movement of the Rotary Shifter with the vibration of the cleaning machine, the De-Stoner machine and the Cleaners.
- ◆ The Emission release by mill processes such as moving by Bucket Elevator, whitening (polishing) of rice, and discharging from Length.
- ◆ The Emission release by Handling, transporting and storing bran and selling to local Marchants
- ◆ Emissions from generator operation.
- ◆ Emissions from vehicle traffic.

The three main sources of air quality impact during operations are:

- (1) Particulate matter (PM₁₀) from rice processing - moderate
- (2) Emissions from vehicles - moderate
- (3) Emissions from auxiliary diesel generators - negligible

Noise Level

The two main noise impacts during operation are:

- (1) Noise from rice processing – Negligible
- (2) Emissions from vehicles and diesel generators – Moderate

Soil and Groundwater Quality

The three (3) main sources of contamination that could affect soil and groundwater quality during operation are:

- (1) Wastewater and sanitation discharges from daily operations by plant personnel - Negligible
- (2) Spillage from fuel storage - Negligible
- (3) Accidental oil spills from utility vehicles and generators – Negligible

Waste and Wastewater

The main impacts during operation are:

- (1) Wastewater from daily operations by factory workers - Negligible
- (2) Wastewater from rice cleaning process - Negligible
- (3) Kitchen water, wastewater and sewage - Negligible
- (4) Spillage from fuel storage - Negligible
- (5) Accidental oil spills from vehicles and generators – Negligible

Ecosystem

The project area does not have significant flora and fauna and is located far from protected areas, so the impact on the ecosystem can be considered negligible.

Social Impact

The main impacts during operation are:

- (1) Traffic congestion due to the (20) to (50) truck trips per week from the road to the factory to transport raw materials and the transportation of final products - High Level
- (2) Increase in migrant workers - Medium Level
- (3) Local economic growth - High Level
- (4) Increase in child labor - High Level

(5) Local insecurity - High Level

(6) Occupational safety - Medium Level

Decommissioning Phase

The main impacts during the decommissioning period are:

- ◆ Potential environmental air Emission due to demolition vehicles and machinery used during the project decommissioning - Medium Level
- ◆ Potential impacts to environment and workers due to vehicles movement, environmentally unfriendly equipment used during the decommissioning phase - Highest Level
- ◆ Potential waste, debris, and wastewater from workers and employees - Medium Level
- ◆ Potential soil and groundwater pollution from the decommissioning of the factory and spillage of fuel from the decommissioning equipment - Medium Level

1.11 Description of Proposed Mitigation Measures and Residual Impacts

Operation Phase

- ◆ Installing dust collectors, exhaust fans, and roof ventilators to control dust emissions in the factory;
- ◆ Maintaining equipment for long-term use;
- ◆ Spraying dusty access road to the project area with water;
- ◆ Provide employees with personal protective equipment (PPE);
- ◆ Regular cleaning and inspection of sewage systems and drains;
- ◆ Regular inspections to prevent oil spills from generators and vehicles;
- ◆ Safely enclose noise and vibration sources to prevent noise and vibration from being emitted into the surrounding area;
- ◆ Rotate workers working in noisy areas;
- ◆ Plant and maintain trees and shrubs in the factory yard;
- ◆ Install fire alarm systems, fire suppression systems, fire extinguishers, emergency exits, ladders, and emergency exits;
- ◆ Train project staff on fire safety and firefighting in coordination with the fire department;
- ◆ Regular health check-ups and health care for workers;
- ◆ Provide employees to occupational safety training and follow-up training at the factory;
- ◆ Separate waste materials into recyclable materials, disposable materials, and hazardous waste at the factory and report to the YCDC's Sanitation Department and have them collected.

Decommissioning Period

- ◆ Decommissioning equipment should be turned off when not in use to minimize emissions to the environment;
- ◆ Regular inspection and maintenance of vehicles and equipment;
- ◆ Water spraying within the project to minimize dust emissions;

- ◆ No burning of waste materials;
- ◆ Properly remove and reuse pipelines that have been removed during the dismantling period;
- ◆ Turn off noisy machines and equipment when not in use and avoid using noisy machines and equipment at the same time as much as possible.
- ◆ Provide fire extinguishers, fire water tanks, and install fire hazard signs.
- ◆ Carefully remove and store electrical wires,
- ◆ Install warning signs and use personal protective equipment,
- ◆ Provide garbage dumps and dispose of waste in designated areas,
- ◆ Properly construct and provide adequate temporary latrines in the workplace;
- ◆ Keep emergency medicines and first aid kits within reach;
- ◆ Provide adequate drinking water for employees;
- ◆ Disposal waste and kitchen waste from offices and staff houses in the workplace are systematically collected and disposed of in appropriate places, covered, and hazardous industrial waste is safely packaged and disposed of in designated areas.

Details about this and the residual effects are described in Chapter (6).

1.12 Summary of Environmental Management Plan

Golden Lace POSCO International Co., Ltd.'s rice mill must continuously focus on reducing potential impacts from its operations, and must also comply with environmental management plans in its operations. The Environmental Management Plan has five (5) plans: Environmental Impact Reduction/Prevention Plan, Environmental Monitoring Plan, Health and Safety Plan, Emergency Response Plan, Employee Awareness and Training Plan, and Social Responsibility Plan.

Golden Lace POSCO International Co., Ltd. is required to implement these programs. In addition, it is responsible for supervising and monitoring these programs that are being implemented.

By implementing these programs, it can be reduced the potential environmental and social impacts of project's activities. Project managers should also conduct regular reviews of environmental management plan and conduct regular monitoring throughout the plant's operational phase. Details related to this are provided in Chapter 7.

1.13 Public Consultation and Information Disclosure

Environ Myanmar held a Public Consultation Meeting (PCM) with project stakeholders during the preparation of the IEE report at the office of the Rice Mill in Shwe Lin Ban Industrial Zone, Hlaing Thar Yar, which is located within the project area in 2015. Fifteen (15) participants participated in the discussion.

The survey results showed that all of the respondents were aware of the project. Most of the respondent agree that the project should proceed as they feel that this project can provide job opportunities in the construction of the two warehouses as well as during the operations of the rice mill. The respondents who are working at the Golden Lace Rice Mill also expect the increase of production of the rice mill will ensure their continued employment with the company.

Since the signed attendance of Participants who attended the public consultation meeting (PCM) held in 2015 were not available, Environmental Compliance Consultancy Co., Ltd (EnvCC) held another PCM at the Rice Mill Office with the project affected persons nearby aims to get the strengthen public concerns on 15-5-2025. The number of people who attended was (16).

During the meeting, the following points were discussed by the participants:

- (1) As a comment, said that there is not wastewater discharge from the factory and we accept this project according to the promoting of local trading for the brown rice gain and bran which can be promoted to the local business.
- (2) There is nothing complaints for the responsibilities of the Rice Mill because of the Job opportunities given with international standardized facilities at working area. Due to the safety priority and standardization for environmental conservation point of view, there is no hazards waste and wastewater to disclose from the factory to the environment as well.
- (3) It is stated that promoting of the facilities of nearby the project area such as improved access to electricity and drinking water should be included in CSR Programme of GLPI.

In accordance with the Environmental Impact Assessment Procedures (2015) issued by the Ministry of Natural Resources and Environmental Conservation, regular communication with the public and environmental authorities related to the project will be carried out to facilitate the disclosure of information and the Executive summary of the IEE report (in Myanmar Language) that has been approved by the Department of Environmental Conservation will be distributed to local residents. An information center will be established and operated to identify and resolve impacts caused by project activities.

1.14 Environmental Monitoring Plan and Budget

The Environmental Monitoring Plan and reserved funds are presented in Table 1-1.

Table 1-1 Environmental Monitoring Plan and reserved funds

Baseline	Parameters	Location of Sampling Point	Frequency of Sampling	Budget (Kyat)
Air Quality	NOx, SO2, PM2.5, PM10 and O2	♦ Project area at (A 1) 16°54'28"N, 96° 0.4'14"E	6 monthly Monitoring Report to ECD	2,000,000
Noise Level	Noise Level (dB (A) scale)	♦ Project area at (A 1) 16°54'28"N, 96° 0.4'14"E	6 monthly Monitoring Report to ECD	1,000,000
Water Quality	Alkalinity (Alk), Magnesium (Mg ++), Sodium (Na+), Potassium (K+), Total Hardness (TH), Sulfate (SO4-), Chloride (Cl-), Iron (Fe), Dissolve Oxygen (DO), Chemical Oxygen Demand (COD), Biochemical Oxygen Demand (BOD), pH, Ammonia-Nitrogen (NH3-N), Turbidity, Salinity, Arsenic (As), Lead (Pb)	♦ Groundwater (GW-1) 16°54'29.01"N, 96° 4'14.36"E ♦ Groundwater (GW-2) 16°54'29.83"N, 96° 4'14.08"E ♦ Effluent 16°54'28.06"N, 96° 4'10.55"E	6 monthly Monitoring Report to ECD	2,400,000
Soil Quality	pH, Salinity, Electrical Conductivity, Cation Exchangeable Capacity, Potassium (Potash)	♦ (S-1) 16°54'26.78"N, ♦ 96° 4'10.69"E	6 monthly Monitoring Report to ECD	500,000
Occupational Health and Safety	Electrical and Fire Hazard	♦ Electrical cables, their accessories and flammable areas within the project area	Monthly	1,000,000
	Accident	♦ Workplace within the project area	Monthly	

1.15 Conclusion and Recommendation

By predicting the impacts of project activities, it is possible to avoid or mitigate impacts and by implementing mitigation measures according to the Environmental Management Plan, and monitoring and evaluating their implementation, the project development will be sustainable in the long term.

Most of the impacts assessed in the IEE study are minor and could be reduced by implementing mitigation measures.

The project developer must also ensure that environmental protection measures are in place to mitigate any concerns that may arise during the project period.

2. INTRODUCTION

Proposed Rice Processing Complex with the capacity of 280 tons per day falls in the category of Initial Environmental Examination (IEE) requirement as specified in the section of “Food and Beverage Manufacturing” from Appendix 1 of MONREC’s Environmental Impact Assessment (EIA) Procedure (2015). Hence, this document is prepared as an IEE pursuant to sections 15 and 16 of Chapter VII of the Environmental Conservation Act, 2012 and to section 10, 11, and 12 of Chapter II of EIA Procedure (2015). As instructed in the EIA Procedures (2015), this IEE identifies relevant key environmental factors of the project site and potential environmental impacts from the project and outlines an environmental management plan with mitigation measures.

The proponent, Golden Lace POSCO International Co., Ltd. (GLPI) has entrusted ENVIRON as an independent third party to conduct IEE for the project and the IEE report was submitted to the Environmental Conservation Department (ECD) for seeking IEE approval and subsequent permit from Myanmar Investment Commission (MIC) in 2015 and Environmental Compliance Consultancy Company Limited (EnvCC) has been commissioned by GLPI to update the Initial Environmental Examination (IEE) report for the outcomes of the comments by ECD’s assessment.

In general, this document covers:

- Overview of the proposed Rice Processing Complex;
- Description of the project implementation;
- Key environmental factors relevant to the project and
- Environmental impact assessment and management plan.

2.1 Objectives of Approach

The purpose of this IEE and relevant Environmental Management Plan (EMP) is to provide information on the nature and extent of potential environmental and social impacts arising from the construction and operation of the proposed project and its related activities, and to commit implementation of mitigation measures to minimize the impacts. It is hoped that this information will help MONERC and MIC on determining the project’s approval:

This report comprises specialists’ assessment of the potential impacts by the project on the environment (both in natural and social contexts). It highlights areas of particular concerns, receptors, and vulnerability. In addition, the report describes in-depth mitigation measures in EMP to address and minimize the impacts.

2.2 Presentation of the Project Proponent and Justification

The proposed Rice Processing Complex project is operated by a joint venture company formed by Daewoo International Corporation and Golden Lace Co. Ltd. Daewoo International Corporation is involved in trading including imports, exports and tripartite trade, IT, financing and operation of engineering procurement operation, and construction, as well as resource

development for industrial and agribusiness operations. With innovative use of modern technology, the company produces high export quality rice. Its mission in Myanmar is to curb losses in rice industry's post-harvest stages and to boost productivity yield through the incorporation of providing trainings and modernizing production techniques.

Started as a family business in 1957 and then, turned into a company in 2001, Golden Lace Co. Ltd., has emerged as one of the leading agri-business in Myanmar. It engages in production and sale of export quality rice and agricultural machineries. Its products have been known both in the regional markets and overseas. The company exported over 10,000 tons of processed rice during 2013-2014 fiscal year. Its chairman, Mr. Thaung Win has been serving as one of the executive members of Myanmar Rice Federation (MRF).

The proposed project is developed on 13.8 acres land and will have approximate production capacity of 280 tons per day – totalling 85,000 tons per year.

In accordance with criteria specified in MONREC's EIA Procedure's section of "Food and Beverage Manufacturing" from Appendix 1, the proposed project meets IEE requirement. Therefore, Golden Lace POSCO International Co., Ltd. appointed ENVIRON Myanmar to conduct IEE to comply with MONREC environmental standards and to fulfil Myanmar Investment Commission (MIC)'s regulation for obtaining approval and permit.

This IEE study for the existing Rice Processing Complex was been conducted by a joint venture company formed by Daewoo International Corporation and Golden Lace Co. Ltd. in 2015.

Due to the following history of Company Name Changes, the Golden Lace POSCO International Co., Ltd. (GLPI) is the project owner of this project since April 2019. The Changes of Company's Name approved by MIC is shown in **Appendix A**.

Table 2-1 History of Changes of Company Name and MIC Approved

Year	POSCO	GLPI	Remark
Up to February 2016	DAEWOO International Corporation		
March 2016	POSCO DAEWOO Corporation		
November 2016		Golden Lace DAEWOO Co., Ltd 28-11-2016	Shareholder: POSCO DAEWOO Corporation & Golden Lace Co., Ltd
March 2019	POSCO International Corporation 19-3-2019	Golden Lace POSCO International Co., Ltd 21-3-2019	MIC Approved 8-4-2019

The project proponent and contact details are as follows:

- Contact person: Ms. Tin Htar Phone
- Position: HR Manager,
Golden Lace POSCO INTERNATIONAL CO., LTD
- Address: No. 56, 5th Floor, Mahaland Building,
Kabar Aye Pagoda Road, Yankin Township,
Yangon, Myanmar
- Phone: +(95) 9250684959
- Email: http@gl-pi.com

2.2.1 Project Developer's Contractual and Commitments for Proposed Project

Outline Laws, regulations and standards shall be followed for environmental quality, safety and health, protection of sensitive areas, protection of endangered species, siting, and land use control at the international, national, and local levels.

Golden Lace POSCO International Co., Ltd will comply with the Environmental Conservation Law dated on March 30, 2012, Rules dated on June 5, 2014, and Procedures dated on December 29, 2015, National Environmental Quality (Emission) Guideline dated on April 22, 2015 and all necessary national and international standards Golden Lace POSCO International Co., Ltd. 's commitments are illustrated in Table 2-2.

According to Article (77) of the Environmental Impact Assessment Procedure, Golden Lace POSCO International Co., Ltd. shall issue the commitment for the accuracy and completeness of the IEE, that the IEE has been prepared in strict compliance with applicable laws including this Procedure, and that the Project will at all times comply fully with the commitments, mitigation measures, and plans in the IEE.

The copy of company's registration is demonstrated in **Appendix B**.

The signed commitment letter of Golden Lace POSCO International Co., Ltd. for the IEE is attached with report.

Table 2-2 GOLDEN LACE POSCO INTERNATIONAL CO., LTD.'s Commitment

No.	Brief Summary of the Commitments	Description of Commitments	Reference Chapter
1.	<ul style="list-style-type: none"> Authenticity, recognition and obligations 	<ul style="list-style-type: none"> Golden Lace POSCO International Co., Ltd. acknowledges all the correctness of all the description being described. Golden Lace POSCO International Co., Ltd. commits to take any obligation and responsibility being described. 	Chapter 1: Executive Summary
2.	<ul style="list-style-type: none"> Authenticity, recognition and obligations 	<ul style="list-style-type: none"> Golden Lace POSCO International Co., Ltd. acknowledges all the correctness of all the description being described for the context of the project. 	Chapter 2: Introduction
3.	<ul style="list-style-type: none"> Authenticity, recognition and obligations Commitment 	<ul style="list-style-type: none"> Golden Lace POSCO International Co., Ltd. acknowledges all the correctness of all the description being described for the context of the project. Golden Lace POSCO International Co., Ltd. commits to comply the described environmental and social policies, existing environmental conservation laws and regulations, Myanmar's existing laws and regulations, policy and legal frameworks including national and international standards and guidelines, being explored in this report. Golden Lace POSCO International Co., Ltd. commits to comply policies which is prepared and undertaken by the government authorities for the state requirements. Golden Lace POSCO International Co., Ltd. abides by the terms and conditions, stipulations of special licenses, permits, and business operation certificates issued to them, including the rules, notifications, orders, and directives and procedures issued by the MIC and the applicable laws, terms and conditions of contract and tax obligations; Golden Lace POSCO International Co., Ltd. carries out in accordance with the stipulations of the relevant department if it is, by the nature of business or by other need, required to obtain any license or permit from the relevant Union Ministries government departments and governmental organizations, or to carry out registration; Golden Lace POSCO International Co., Ltd. abides by the applicable laws, rules, procedures and best standards practiced internationally for this investment so as not to cause damage, pollution, and loss to the natural and social environment and not to cause damage to cultural heritage; Golden Lace POSCO International Co., Ltd. takes responsibilities for its actions and omissions and those of its officers, employees, agents, representatives, and consultants employed, hired, or 	Chapter 3: Policy and Legal Framework

No.	Brief Summary of the Commitments	Description of Commitments	Reference Chapter
		<p>authorized by the company acting for or on behalf of the Project;</p> <ul style="list-style-type: none"> Golden Lace POSCO International Co., Ltd. closes and discontinues the investment only after payment of compensation to employees in accordance with applicable laws for any breach of employment contracts, closure of investment, sale and transfer of investment, discontinuation of investment, or reduction of workforce; Golden Lace POSCO International Co., Ltd. supervises foreign experts, supervisors and their families, who employ in its investment, to abide by the applicable laws, rules, orders and directives, and the culture and traditions of Myanmar; Have the right to sue and to be sued in accordance with the laws; Pay effective compensation for loss incurred to the victim, if there is damage to the natural environment and socioeconomic losses caused by logging or extraction of natural resources which are not related to the scope of the permissible investment, except from carrying out the activities required to conduct investment in a Permit or an Endorsement. Ensure that all foreign employees apply for the proper work permit and visa through the Myanmar Investment Commission (MIC). Provide rights and benefits including but not limited to, leave, holidays, overtime pay, compensation and social security. Most of the relevant particulars are in the Myanmar Companies Act. Golden Lace POSCO International Co., Ltd. is responsible for, and shall fully and effectively implement, all requirements set forth in the Environmental Compliance Certificate (ECC), applicable Laws, the Rules, this Procedure and standards. According to the EIA Procedure, "A detailed decommissioning plan" is submitted before the start of decommissioning activities. 	
4	<ul style="list-style-type: none"> Correctness and acknowledgement 	<ul style="list-style-type: none"> Golden Lace POSCO International Co., Ltd. acknowledges all the correctness of all the description being described. 	Chapter 4: Project Description
5	<ul style="list-style-type: none"> Correctness and acknowledgement 	<ul style="list-style-type: none"> Golden Lace POSCO International Co., Ltd. acknowledges all the correctness of all the description being described. 	Chapter 5: Description of the Project Environment
6	<ul style="list-style-type: none"> Authenticity, recognition and obligations 	<ul style="list-style-type: none"> Golden Lace POSCO International Co., Ltd. acknowledges all the correctness of all the description being described environmental and social impacts. 	Chapter 6: Anticipated Environmental and

No.	Brief Summary of the Commitments	Description of Commitments	Reference Chapter
			Social Impacts and Mitigation Measures
7	<ul style="list-style-type: none"> Authenticity, recognition and obligations Commitment 	<ul style="list-style-type: none"> Golden Lace POSCO International Co., Ltd. acknowledges fully implement the Environmental Management Plan (EMP), all Project commitments, and conditions, and is liable to ensure that the Project comply fully with all applicable Laws, the Rules, this Procedure, the EMP, Project commitments and conditions when providing services to the Project; Golden Lace POSCO International Co., Ltd. acknowledges all the requirements to implement the Environmental Monitoring being explored and committed to undertake; Golden Lace POSCO International Co., Ltd. commits to undertake environmental and social performance monitoring and commits to submit the monitoring report in 6th Monthly to the Ministry as per schedules being explored in Environmental Management Plan. Golden Lace POSCO International Co., Ltd. acknowledges and committed to allocate the cost for the implementing of Environmental Monitoring. 	Chapter 7: Environmental Management Plan
8	<ul style="list-style-type: none"> Public consultation and Disclosure commitments 	<ul style="list-style-type: none"> Golden Lace POSCO International Co., Ltd. acknowledges all the process for public consultation and commits to comply to undertake the methodologies being explored. Golden Lace POSCO International Co., Ltd. acknowledges all the process for disclosure and committed to comply to undertake as per those. 	Chapter 8: Public Consultation and Disclosure
9	<ul style="list-style-type: none"> Authenticity, recognition and obligations 	<ul style="list-style-type: none"> Golden Lace POSCO International Co., Ltd. acknowledges all the description being described in Conclusion and Recommendation. 	Chapter 9: Conclusion and Recommendation

2.3 Presentation of the Environmental and Social Experts

The submitted IEE report to ECD for the proposed project was prepared by **ENVIRON Myanmar Co., Ltd** and all enquiries pertaining to the IEE study shall be directed to:

Contact Person: Dr. Flordeliz Guarin
Position: Technical Director and Principal,
ENVIRON Myanmar Co. Ltd
Address: 4th Floor, Building 17, MICT Park
Hlaing Township, Yangon, Myanmar
Telephone: +01 654914
Website: www.ramboll-environ.com

The team members involved in the preparation of the IEE and EMP are provided in.

Table 2-3 Key Environmental and Social Consultants for the Project of EnvCC

Name	Qualification	Responsibility
Joel Gonzales	<ul style="list-style-type: none">▪ Bachelor of Science in Biology (Major in Ecology)▪ NEBOSH National Diploma in Environmental Management▪ NEBOSH International General Safety Certificate	Senior Consultant
Josiah Bowles	<ul style="list-style-type: none">▪ M.Sc. in Water and Wastewater Engineering	Senior Consultant
Dr. Zin Mar Lwin	<ul style="list-style-type: none">▪ Ph.D in Environmental Science	Environmental Consultant
Mr. Htay Aung Pyae	<ul style="list-style-type: none">▪ M.Eng: Civil Engineering	Environmental Consultant
Ms. Khing Thwe Oo	<ul style="list-style-type: none">▪ M.Eng: Environmental Engineering and Management	Environmental Consultant
Ms. Kaythi Soe Myint	<ul style="list-style-type: none">▪ M.P.H Primary Health Care	Social and Health, Research
Mr. Min Zar Ni Aung	<ul style="list-style-type: none">▪ Bachelor of Mining Engineering	Field Survey Supervisor

Environmental Compliance Consultancy Company Limited (EnvCC) has been commissioned by Golden Lace POSCO International Co., Ltd to update the Initial Environmental Examination (IEE) report for the outcomes of the comments by ECD's assessment to submit as an updated IEE report to Environmental Conservation Department (ECD) of Ministry of Natural Resources and Environmental Conservation (MONREC) in order to inform the decision to award an Environmental Compliance Certificate.

EnvCC is a one of the Third Party Organizations in Myanmar and has been awarded the Third-Party License for Organization (**EIA-CO(A)005/2024**) under the Ministry of Natural Resources and Environmental Conservation (MONREC) since 30-7-2024 to provide the technical capabilities and best practices to solve the challenges of risks and safety through local and international EIA guidelines, procedures, project related laws and regulation, and stakeholders' satisfaction to deliver the right environmental solution. We are supervising to conduct the EIA, IEE, EMP, EMO and Due Diligence according to the Article 18 of Environmental Impact Assessment Procedure (2015) of Myanmar.

EnvCC commits to MONREC and ECD that the EMP has been prepared in strict compliance with applicable Environmental Conservation Law (2012), Environmental Conservation Rules (2014) and Environmental Impact Assessment Procedure (2015)'s clause (35) and (36), and other related laws and regulation for the type of project and the environmental impact plan is accurate and complete.

The commitment letter of EnvCC is illustrated with IEE Report.

The copies of company's registration, and Licenses of organization and experts are illustrated in **Appendix C and D**.

The contact details of Environmental Compliance Consultancy Co., Ltd (EnvCC) is as follow;

Contact Person:	Daw Myat Mon Swe
Address:	No. 20, Neikbainda Street, Lanthit Road, Nanthar Gone Ward, Insein Township, Yangon, Myanmar
Telephone:	+95 (9) 420111902
Email:	myatmonswe@envccmyanmar.com , myatmonswe@gmail.com

The key EnvCC environmental and social consultants that conducted the EMP Study are presented in Table 2-4 and CVs of the supporting members are described in **Appendix E**.

Table 2-4 Key Environmental and Social Consultants for the Project of EnvCC

No.	Project requirement	Name of Consultant	License Number/ Education	Expertise of Consultant	Responsibilities
Necessary Requirement of Expertise (6) for theproject					
1.	Air Pollution Monitoring	U Ye Myat Phone Hlaing	EIA-AC 114/2024	(1) Air Pollution Monitoring	Team Leader
2.	Air Pollution Prevention and Control	U Aung Zayer Wint	EIA-AC 008/2023	(1) Air Pollution Prevention and Control	
3.	Water Pollution Prevention, Control, Monitoring and Prediction of Impacts	U Chit Bo Bo Win	EIA-AC 118/2024	(1) Water Pollution Prevention, Control, Monitoring and Prediction of Impacts (2) Hydrology, Surface Water and Ground Water Conservation	
4.	Social Study and Analysis	Daw Myat Mon Swe	EIA-C 018/2023	(1) Social Study and Analysis (2) General Environmental Management (3) Environmental Quality Monitoring (Air, Water, Soil)	
5.	Solid Waste and Hazardous Waste Management	Daw Soe Moe Nwe	EIA-C 030/2023	(1) Social Study and Analysis (2) Ecology and Biodiversity (3) Solid Waste and Hazardous Waste Management	
6.	Risk Assessment and Hazard Management	U Arker Phyo	EIA-C 059/2024	(1) Risk Assessment and Hazard Management	
Other Expertise Involved					
1.	Ecology and Biodiversity	Daw Than Than Htay	EIA-C 045/2023	(1) Ecology and Biodiversity	
2.	(1) Meteorology, Air Quality Assessment and Forecast	Dr. Phyo Thu Aung	EIA-AC 092/2024	(1) Meteorology, Air Quality Assessment and Forecast	

No.	Project requirement	Name of Consultant	License Number/ Education	Expertise of Consultant	Responsibilities
	(2) Water Pollution Prevention, Control, Monitoring and Prediction of Impacts			(2) Water Pollution Prevention, Control, Monitoring and Prediction of Impacts	
3.	Legal Study and Analysis	Daw Ei Ei Win Myat	EIA-AC 065/2023	(1) Legal Study and Analysis	
4.	(1) Geological Assessment (2) Land Use	U Aung Nyein Myat	EIA-AC 013/2023	(1) Geological Assessment (2) Land Use	
5.	Health	Dr. Hein Lin Aung	EIA-AC 052/2023	(1) Health	
6.	Archaeology and Cultural Heritage	U Than Htut	EIA-AC104/2024	(1) Archaeology and Cultural Heritage	

Supporting Member (2)

No.	Expertise	Name	Education	Responsibilities
1.	Air Pollution Prevention and Control	U Aung Kaung Myat	<ul style="list-style-type: none"> • Master of Science and Engineering (Environmental Planning and Management) • Post-graduate Diploma (Environmental Planning and Management) • BE (Port and Harbor Engineering), • Post-graduate Diploma (Civil Service Management) 	
2.	Solid Waste and Hazardous Waste Management	Daw Aye Chan Wyutyi	<ul style="list-style-type: none"> • Master of Science and Engineering (Environmental Planning and Management) • Post-graduate Diploma (Environmental Planning and Management) • BE (Naval Architecture & Ocean Engineering), • Post-graduate Diploma (Civil Service Management) 	

3. POLICY AND LEGAL FRAMEWORK

This section reviews the policy and legal framework of Myanmar and structures set up to protect the environment, as well as ongoing activities that are intended to promote sustainable development and environmental protection in Myanmar.

3.1 Myanmar Legislation Relevant to the Project

3.1.1 *National Commission for Environmental Affairs–(Also known as Environmental Conservation Committee) and MONREC*

The National Commission for Environmental Affairs (NCEA) was formed in 1990 and it was chaired by the Minister of Foreign Affairs until 2005. In 2005 the NCEA was transferred to the Minister of Forestry (MoF), which assumed the role of the NCEA chairperson and was later renamed as Ministry of Environmental Conservation and Forestry (MONREC). The state objectives of now MONREC include setting environmental standards, creating environmental policies for using natural resources and laying down rules and regulations to prevent pollution, as well as to create short and long term environmental policies that balance between environmental conservation and long overdue economic developments.

MONREC has drafted EIA rules and regulations pending approval by the Parliament, to complement the Environmental Conservation Law of 2012. EIA rules and regulations were enacted in June 2014.

The National Commission for Environmental Affairs (NCEA) was formed in 1990 and was chaired by the Minister of Foreign Affairs until 2005. In 2005 the NCEA was transferred under the Minister of Forestry (MOF), which assumed the role of the NCEA chairperson and later it changed the name to Ministry of Environmental Conservation and Forestry (MONREC). The stated objectives

of MONREC include setting environmental standards, creating environmental policies for using natural resources and laying down rules and regulations to control pollution, as well as to create short and long term environmental policies which balance between environmental conservation and long overdue developments for the country.

To complement the Environmental Conservation Law promulgated in 2012, MONREC has drafted the “Environmental Impact Assessment Procedure and ESIA Guidelines” which are currently pending approval by the government. Thus, the ESIA study for the project has been conducted in line with the 6th draft of the EIA Procedure.

3.1.2 *National Environmental Legislation*

There are currently several laws and regulations related to environmental protection in Myanmar. Most are old environmental laws for which enforcement was spread over many ministries without a centralized environmental regulatory agency until 2011. The authority of the Ministry of Natural Resources and Environmental Conservation (MONREC) (Former: Ministry of Environment, Conservation, and Forestry) was established in September 2011 as

the focal and coordinating agency for the overall environmental management including monitoring and auditing based on the Environmental Conservation Law 2012.

The environmental legislations and regulations considered relevant to the Rice Processing Complex are presented below.

Table 3-1 Myanmar Legislation and Relevance to Project

Relevant Laws, Rules and Regulations	Relevant Articles	Commitments
ENVIRONMENTAL LEGISLATION		
The National Environment Policy, 2019	Section 7	<p>This Policy builds on Myanmar's 1994 National Environmental Policy and reaffirms its core values:</p> <p>(a) The wealth of the nation is its people, its cultural heritage, its environment and its natural resources.</p> <p>(b) It is the responsibility of the State and every citizen to preserve our natural resources in the interests of present and future generations.</p> <p>(c) Environmental protection should always be the primary objective in seeking development.</p> <p>In order to meet the visions, the Government of the Republic of the Union of Myanmar adopts the following 23 National Environmental Policy principles as the guiding framework for achieving: a clean environment and healthy, functioning ecosystems; sustainable economic and social development; and the mainstreaming of environmental protection and management:</p>
Myanmar Climate Change Policy, 2019	Section 12	<p>This is established with the vision to be a climate-resilient, low carbon society that is sustainable, prosperous and inclusive, for the wellbeing of present and future generations.</p> <p>There clearly set-up a guiding principle for</p> <ul style="list-style-type: none"> ■ Sustainable development ■ Precaution ■ Prevention ■ Environmental integrity ■ Shared responsibility and cooperation ■ Inclusiveness ■ Good governance ■ Climate justice and equity ■ Gender equality and women's empowerment

Relevant Laws, Rules and Regulations	Relevant Articles	Commitments
The Constitution of the Republic of the Union of Myanmar, 2008	Article 37 (a)(b) , 45, 390	<p>The Constitution of the Union of Myanmar is the supreme law of the country and has provisions regarding the protection of the environment in Myanmar.</p> <p>The Project Proponent commits to comply as these three Articles in the Constitution provide a basis for legalising and institutionalising environmental health impact assessment and social impact assessment. There stipulates that:</p> <ul style="list-style-type: none"> ■ The Union is the ultimate owner of all lands and all natural resources above and below the ground, above and beneath the water and in the atmosphere in the Union; The Union shall enact necessary law to supervise extraction and utilization of State owned natural resources by economics forces; ■ The Union shall protect and conserve natural environment. ■ Every citizen has the duty to assist the Union in carrying out the following matters: <ul style="list-style-type: none"> (a) preservation and safeguarding of cultural heritage; (b) environmental conservation; (c) striving for development of human resources; (d) protection and preservation of public property.
Natural Disaster Management Law, 2013	Section 15 (a, b, f)	<p>The Project Proponent commits to comply with the following:</p> <p>15. In areas prone to natural disasters, the following are among the preparedness activities that must be planned and carried out before a natural disaster strikes:</p> <ul style="list-style-type: none"> (a) Identifying areas prone to natural disasters, preparing a natural disaster risk assessment and developing emergency response plans; (b) Providing public awareness of natural disaster knowledge, establishing early warning systems, providing training and conducting exercises for search and rescue operations; (f) Collecting and storing the minimum necessary emergency food, relief supplies, and rehabilitation materials for each type of natural disaster in order to provide ready assistance;
Environmental Conservation Law, 2012	Section 7(o), 14,15, 29	<p>The Project Proponent commits to comply with the following:</p> <ul style="list-style-type: none"> ■ That MONREC has the right to manage a proponent to (1) provide compensation for environmental impact and contribute funds, (2) the need for prior permission from MONREC for businesses that have been

Relevant Laws, Rules and Regulations	Relevant Articles	Commitments
		<p>categorized for potentially causing impact on the environment and (3) the right to issuing permit with terms and conditions relating to environmental conservation.</p> <ul style="list-style-type: none"> ■ To treat, emit, discharge and deposit substances which cause pollution in the environment in accordance with stipulated environmental quality standards. ■ That the owner or occupier of any business, material or place which causes a point source of pollution must install or use an on-site facility or controlling equipment in order to monitor, control, manage, reduce or eliminate environmental pollution. If it is impracticable, it must be arranged to dispose the wastes in accordance with environmentally sound methods. <p>To not violate any prohibition contained in the rules, notifications, orders, directives and procedures under the Environmental Conservation Law.</p>
Environmental Conservation Rules, 2014	Rule 69(a) (b)	<p>The Project Proponent commits:</p> <ul style="list-style-type: none"> ■ Not to emit, cause to emit, dispose, by any means, the pollutants and the hazardous waste or material (stipulated as such under the Law) at any place which may affect the public directly or indirectly. ■ Not to damage the ecosystem and the natural environment due to such system, except for carrying out with the permission of MONREC in the interest of the people.
Environmental Impact Assessment Procedure, 2015	Section 87, 102(a)(b), 103, 104, 105, 106, 107, 108, 110, 113, 115, 117	<p>The EIA Procedure sets out the procedures for completing an IEE, EIA and/or EMP in Myanmar. This includes information on project categorisation, responsibilities of project developers and ministries, EIA review, monitoring and auditing, amongst other issues.</p> <p>The Project Proponent commits to bear full legal and financial responsibility:</p> <ul style="list-style-type: none"> ■ For their actions and omissions and those of its contractors, subcontractors, officers, employees, agents, representatives, and consultants employed, hired, or authorised by the Project acting for or on behalf of the Project, in carrying out work on the Project; and ■ To support programs for livelihood restoration and resettlement in consultation with the PAPs, related government agencies, and organizations and other concerned persons for all Adverse Impacts until PAPs have achieved socio-economic stability at a level not lower than that in effect prior to the commencement of the Project.

Relevant Laws, Rules and Regulations	Relevant Articles	Commitments
		<p>For EMP, the Project Proponent commits:</p> <ul style="list-style-type: none"> ■ to implement the EMP, all Project commitments, and conditions, ■ to ensure that all contractors and subcontractors of the Project comply fully with all applicable Laws, the Rules, this Procedure, the EMP, Project commitments and conditions when providing services to the Project. ■ Responsible for, and to fully and effectively implement the requirements set forth in ECC, applicable Laws, Rules, EIA Procedure and standards. ■ Project commitments and conditions when providing services to the Project and inform the Ministry with detailed information as to the proposed project's potential adverse impacts. <p>For monitoring and reporting, Project Proponent commits:</p> <ul style="list-style-type: none"> ■ To notify and identify in writing to the Ministry, providing detailed information as to the proposed Project's potential Adverse Impacts. ■ To engage in continuous, proactive, and comprehensive self-monitoring of the Project and activities related thereto, all Adverse Impacts, and compliance with applicable laws, the Rules, this EIA Procedure, standards, the ECC, and the EMP during all phases of the Project (pre-construction, construction, operation, decommissioning, closure and post-closure). ■ To notify and identify in writing to the Ministry for any breaches of his obligations or other performance failures or violations of the ECC and EMP as soon as reasonably possible and in any event, in respect of any breach which would have a serious impact or where the urgent attention of the Ministry is or may be required, to undertake within not later than twenty-four (24) hours, and in all other cases within seven (7) days of the Project Proponent becoming aware of such incident. ■ To submit monitoring reports to the Ministry not less frequently than every six (6) months, as provided in a schedule in the EMP, or periodically as prescribed by the Ministry. ■ To publically disclose the monitoring report within ten (10) days of completing a monitoring report and the information to be included. ■ To make a monitoring report as contemplated in Article 108 and Article 109 in accordance with the EMP schedule, (except as may relate to National Security concerns) publicly available on the Project's website, at public meeting places (e.g. libraries, community halls) and at the Project offices within ten (10) days of completing

Relevant Laws, Rules and Regulations	Relevant Articles	Commitments
		<ul style="list-style-type: none"> ■ To submit a digital copy of a monitoring report within ten (10) days of receiving such request via email or as may otherwise be agreed upon with the requestor for the request of any organisation or person. <p><i>For the purposes of monitoring and inspection, the event of emergency,</i> the Project Proponent commits to</p> <ul style="list-style-type: none"> ■ Grant the ministry and/or its representatives, at any time during normal working hours, access to the Project's offices and to the Project site and any other location at which the Project activities or activities related to the Project are performed; ■ Grant, from time to time as and when the Ministry may reasonably require, the Ministry access to the Project's offices and to the Project site and any other location at which the Project activities or activities related to the Project are performed. ■ Grant full and immediate access to the Ministry at any time as may be required by the Ministry in the event of an emergency, or where, in the opinion of the Ministry, there is or may exist a violation or risk of violation of the compliance by the Project with all applicable environmental and social requirements. ■ Ensure that the Ministry's rights of access can extend to access by the Ministry to the Project's contractors and subcontractors. ■ For the Conditions and Revisions to Conditions prescribed in Environmental Compliance Certificate, the Project Proponent commits to commence the implementation of the Project in accordance with the conditions attached to the ECC and including the EMP, within such time as may be prescribed by the Ministry upon receipt of the written approval from the relevant authority.
Environmental Quality (Emissions) Guidelines (EQEG), 2015	Section 1.1, 1.2, 1.3, 1.4	The Project Proponent commits to comply with the EQEG and its emission standards for air, noise, and effluent discharges for sector specific operations. The Project Proponent considers this emissions standard in its environmental management plan.
Conservation of Water Resources and Rivers Law, 2006	Section 10, 11(a), 19	<p>The Project Proponent commits to comply prohibitions for the following activities:</p> <ul style="list-style-type: none"> ■ No person shall anchor the vessels where vessels are prohibited from anchoring in the rivers and creeks. ■ No person shall dispose of engine oil, chemical, poisonous material and other materials which may cause environmental damage or dispose of explosives from the bank or from a vessel which is plying, vessel which has berthed, anchored, stranded or sunk.

Relevant Laws, Rules and Regulations	Relevant Articles	Commitments
		<ul style="list-style-type: none"> ■ No one shall dispose of any substance into the river creek that may cause damage to waterway or change of watercourse from the bank or vessel.
The Protection of Wildlife and Conservation of Natural Area Law, 1994	Section 15, 31, 35, 36,37,39	<ul style="list-style-type: none"> ◆ The Project Proponent commits to comply the stipulations: <ul style="list-style-type: none"> a) To protect wildlife or protected wildlife plant species. (15) b) To pay a fine if PTGE kills, hunts, wounds, or raises a seasonally protected wildlife species without permission during the close season. (31) ◆ The Project Proponent commits the following acts (35): <ul style="list-style-type: none"> a) Hunting without a license; b) Violation of any condition of the hunting license; c) Farming protected and seasonally protected wildlife species without permission for commercial purposes; d) Causing water and air pollution, causing damage to a watercourse or poisoning water; e) Possession or disposal of pollutants or mineral wastes in a protected area. ◆ The Project Proponent commits the following acts (36): <ul style="list-style-type: none"> a) Killing, hunting or wounding a protected wildlife species or seasonal protected wildlife species without permission; possessing selling, transportation or transferring such wildlife or any par there of; b) Removing, collecting or destroying in any manner any protected wild plant within the designated area without permission; c) Destroying ecosystems or any natural setting in the protected area. ◆ The Project Proponent commits the following acts (37): <ul style="list-style-type: none"> a) Killing, hunting or wounding a completely protected wildlife species without permission; possessing selling, transportation or transferring such wildlife or any par there of;

Relevant Laws, Rules and Regulations	Relevant Articles	Commitments
		<p>b) Exporting without the recommendation of the Director General a completely protected wild plant species or any part thereof.</p> <p>◆ The Project Proponent commits to follow the stipulations: (39)</p> <p>a) To compensate the value of the loss and damage to the Forest Department,</p> <p>b) To be confiscated the wild animal, wild plants and parts thereof involved in the commission of the offence and hand over the same to the Forest Department.</p> <p>To be confiscated the vehicles/ vessels, animals and other machinery and implements involves in the commission of the offense.</p>
The Conservation of Biodiversity and Protected Area Law, 2018	Section 39 (d) (e)	<p>The Project Proponent commits to comply the stipulation that there may be charge with fine or imprisonment or both if guilty of:</p> <ul style="list-style-type: none"> ■ Using dynamite or explosive chemicals, electrocuting, destroying water flow or poisoning water, intentionally pollutes the soil, water, air in the conservation area; ■ Disposing or handling chemical waste and poisoning materials in the conservation area.
Socio-Economic Legislation		
The Protection and Preservation of Cultural Heritage Regions Law, 1998	Section 13, 15, 22	<p>The Project Proponent commits:</p> <ul style="list-style-type: none"> ■ To apply for prior permission and must abide by provisions of existing laws for certain land-based construction works. ■ To comply the stipulation to the person desirous of carrying out construction works to abide by the provisions of other existing laws and apply in accordance with the stipulations to the Department to obtain prior permission under this law. ■ To conform to conditions prescribed by the Ministry of Culture for buildings in cultural heritage region.
The Protection and Preservation of	Section 12, 13	Project Proponent commits to comply the stipulation:

Relevant Laws, Rules and Regulations	Relevant Articles	Commitments
Antique Objects Law, 2015		<ul style="list-style-type: none"> ■ For person who finds any object which has no owner or custodian, needs to inform the relevant Ward or village-tract administrator if he knows or it seems reasonable to assume that the said object is an antique object. ■ For a procedure to inform and the responsibility to inspect whether it is a real ancient monument or not and keep or cause to protect as may be necessary in accordance with the stipulation
The Protection and Preservation of Ancient Monuments Law, 2015	Section 12, 13, 15, 20	<p>Project Proponent commits to comply the stipulations:</p> <ul style="list-style-type: none"> ■ For a person who finds an ancient monument over one hundred years old under the water or above ground to promptly inform the relevant Ward or Village-Tract Administrative Office. ■ For procedure to inform and the responsibility to inspect whether it is a real ancient monument or not and keep or cause to protect as may be necessary in accordance with the stipulation. ■ To apply prior permission from the Department before implementing <ol style="list-style-type: none"> (a). Extending towns, wards and villages; (b). Constructing or extending or repairing new buildings including hotels, factories and residential buildings or fencing or extending a fence; (c). Digging to search petroleum, natural gas, gem or mineral, piping petroleum and natural gas, constructing factories, connecting national grid, constructing communication tower, constructing or extending infrastructures such as road, bridge, airfield, irrigation and embankment; (d). Connecting underground electric cable, communication cable and other underground works; (e). Digging or extending wells, lakes, canals and ponds; (f). Gold sieving, digging, burning bricks, digging well, lake, creek, ditch, gully, pit digging, refilling, level ling, mining, quarry, gravel digging and unearth sand, removing the mounds and hills which can damage the physical feature of the land; (g). Placing and fencing ancient monuments in a private compound and area; (h). Constructing a building which is not consistent with the terms and conditions stipulated according to the region by the Ministry near and at the surrounding of an ancient monument. ■ For prohibitions not to damage to an ancient monument within the specified area without a written prior permission by carrying out:

Relevant Laws, Rules and Regulations	Relevant Articles	Commitments
		<ul style="list-style-type: none"> (a). Taking photo, video, film or copying and modelling an ancient monument stipulated as a listed ancient monument for commercial purposes; (b). Using machines which causes vibration within the specified place of an ancient monument and running various types of vehicles; (c). Cultivating, gardening, breeding, fencing by blocking nearby an ancient monument or doing any other act which can affect an ancient monument; (d). Emission of gas such as hot-air balloon which can affect an ancient monument; (e). Landing and taking off and, flying airplane and helicopter which can directly or indirectly affect an ancient monument; (f). Discarding chemical substance and rubbish which can affect an ancient monument and the environment.
Myanmar Fire Force Law, 2015	Section 25	<p>The Project Proponent commits:</p> <ul style="list-style-type: none"> ■ To obtain the opinion of the Fire Services Department for the purpose of fire precaution and prevention, when laying down plans for construction for town, village and downtown or village development plans. ■ To comply the stipulations for the factory, workshop, highway bus, airport, jetty, hotel, motel, guest house, collective-owned building, market, work-site or business exposed to fire hazard of the owner or manager; <ul style="list-style-type: none"> (a). Not fail to form a reserve fire brigade (b). Not fail to provide materials and apparatuses for fire safety; in conformity with the directive of the Fire Services Department.
Motor Vehicle Law, 2015	Chapter 1, 2(v)	<p>The Project Proponent commits to comply the stipulations:</p> <ul style="list-style-type: none"> ■ For reducing environmental pollution caused by motor vehicles ■ For the right of the Department to issue directives, the standards, guidelines for the purposes of importing, manufacturing, assembling, maintaining to be safe in accident and environment conservation. ■ To take actions to conserve the green environment and the reduction in pollution of air, water, land and noises caused by motor vehicles.

Relevant Laws, Rules and Regulations	Relevant Articles	Commitments
Public Health Law, 1972	Section 3, 5	<p>The Project Proponent commits to cooperate with the authorized person or organization in line with the stipulations:</p> <ul style="list-style-type: none"> ■ To abide by any instruction or stipulation for public health. ■ To accept any inspection, anytime, anywhere if it is needed.
The Prevention and Control of Communicable Diseases Law, 1995	Section 3(a), 9, 11	<p>The Project Proponent commits to comply the stipulations:</p> <ul style="list-style-type: none"> ■ For the Department of Health to carry out immunisations and health education activities related to communicable diseases ■ For all responsible persons to prepare report for an outbreak of a communicable disease to the nearest Health Officer. ■ For Health Officer to undertake investigations and medical examinations to prevent the control the spread of Principal Epidemic Disease.
Occupational Safety and Health Law (The Pyidaungsu Hluttaw Law No.8.2019) (not in force)	Section 12 (a)(b)	<p>The Project Proponent take the responsibility prescribed for Employers to:</p> <p>(a) Appoint the occupational safety and health responsible person in order to closely inspect for the safe and health of workers as per types of business defined by Ministry of Labour, Immigration and Population.</p> <p>(b) Organize the Safety and Health Committee in accordance with the stipulations of the Ministry including the equal numbers of representative from employees and employers for the purposes to implementing the working environment, which is in safe and healthy for the business where the number of workers are not less than the number stipulated by the Ministry. In this case, the committee is formed for the considerations of occupational safety and health for women as per nature of the workplace.</p>
Employment and Skill Development Law, 2013	Section 5, 14, 15, 30	<p>The Project Proponent commits to comply the stipulation</p> <ul style="list-style-type: none"> ■ For the agreement, training and probation period as prescribed in: <ol style="list-style-type: none"> 1. If the employer has appointed the employee to work for an employment, the employment agreement shall be made within 30 days. But it shall not be related with government department and organization for a permanent employment.

Relevant Laws, Rules and Regulations	Relevant Articles	Commitments
		<ol style="list-style-type: none"> 2. If pre training period and probation period are stipulated before the appointment the said trainee shall not be related with the stipulation of sub-section (1). ■ For particulars to be included in the employment agreement: <ol style="list-style-type: none"> 1. the type of employment; 2. the probation period; 3. wage, salary; 4. location of the employment; 5. the term of the agreement; 6. working hour; 7. day off, holiday and leave; 8. overtime; 9. meal arrangement during the work hour; 10. accommodation; 11. medical treatment; 12. ferry arrangement to worksite and travelling; 13. regulations to be followed by the employees; 14. if the employee is sent to attend the training, the limited time agreed by the employee to continue to work after attending the training; 15. resigning and termination of service; 16. termination of agreement; 17. the obligations in accord with the stipulation of the agreement; 18. the cancellation of employment agreement mutually made between employer and employee; 19. other matters; 20. specifying the regulation of the agreement, amending and supplementing;

Relevant Laws, Rules and Regulations	Relevant Articles	Commitments
		<p>21. Miscellaneous.</p> <ul style="list-style-type: none"> ■ For the worksite regulations contained in the employment agreement to be in compliance with any existing law and the benefits of the employee not to be less than those of the any existing law. (a). For the employment agreement, the Ministry can issue the notification for paying the stipulated compensation to the employee by the employer, if the work is completed earlier than the stipulated period or the whole work or any part of it have to be terminated due to unexpected condition or the work has to be terminated due to various conditions. (b). For the employment agreement made under sub-section (a) to be related with daily wage workers, piece rate workers who are appointed temporarily in the government department and organization. (c). For the worksite regulations and benefits contained in the employment agreement mutually made between the employer and employee or among the employees to be amended as necessary, in accord with the existing law. (d). For the employer to send a copy of the employment agreement made between the employer and employee, to the relevant employment and labour exchange office within the stipulated period and to get the approval of it. (e). For the employment agreement made before the enforcement of this law has to be confirmed up to the end of the term of the original agreement. ■ To carry out the training program in accordance with the work requirement in line with the policy of the skill development team to develop the skill relating to the employment for the workers who are proposed to appoint and working at present. ■ To carry out the training for each work or compounding the work individually or group-wise by opening on-job training, training systematically at worksite, sending outside training and training by using information technology system, for arranging the training program to enhance the employment skill of the workers; ■ For appointing the youths of 16 years as apprentices, to arrange the training for technology relating to the employment systematically in accord with the regulations prescribed by the skill development team. ■ For the employer of the industry and service business to put in to the fund monthly as put in fees without fail for the total wages of the subordinates and the supervisors' salary for not less than 0.5%;

Relevant Laws, Rules and Regulations	Relevant Articles	Commitments
		<ul style="list-style-type: none"> ■ To put in money paid under sub-section (a) not to be deducted from the wage and salary of the employees.
The Settlement of Labour Dispute Law, 2012	Section 38, 39, 40, 51	<p>The Project Proponent commits to comply:</p> <ul style="list-style-type: none"> ■ Not to fail to negotiate and coordinate in respect of a complaint within the prescribed period without sufficient cause ■ Not to alter the conditions of service of workers involved in disputes prior to investigation by tribunals ■ For no party to strike or lock-out without negotiation, conciliation and arbitration by Arbitration Body. For the employer if commits acts without sufficient cause, to be liable to pay full compensation to workers as determined by Arbitration Body or Tribunal.
The Workmen Compensation Act, 1923 (amended in 1955, 1957, 2005)	Section 3	<p>The Project Proponent commits to comply the stipulations:</p> <ul style="list-style-type: none"> ■ For the payment by certain classes of employers to their workmen of compensation for injury by accident. ■ For the liability for compensation of employer's, amount of compensation, compensation to be paid when due and penalty for default, method of calculating wages, review, commutation of half-monthly payments, payment of a lump sum amount, distribution of compensation, compensation not to be assigned, attached or charged, notice and claim, power to require from employers statements regarding fatal accidents, reports of fatal accidents and serious bodily injuries, medical examination, contracting, remedies of employer against stranger, compensation to be first charge on assets transferred by employer, special provisions relating to masters and seamen. ■ For any updating for revising the monetary amount as per the amendment law.
Labour Organisation Law, 2011	Section 17, 18, 19, 20, 21, 22	<p>This Law was enacted, to protect the rights of the workers, to have good relations among the workers or between the employer and the worker, and to enable to form and carry out the labour organizations systematically and independently.</p> <p>Project Proponent commits to comply the stipulations as their mentions:</p> <ul style="list-style-type: none"> ■ That Labour Organisations are free to organise and negotiate workers' rights if not meeting labour laws. ■ That Labour Organisations may demand re-appointment of worker if cause of dismissal is related to labour organisation membership or activities or not conform to labour laws. ■ That Labour Organisations have the right to send representatives to conciliation tribunals.

Relevant Laws, Rules and Regulations	Relevant Articles	Commitments
		<ul style="list-style-type: none"> ■ That Labour Organisations have the right to participate and discuss workers' rights and interests with government and employers ■ That Labour Organisation has the right to participate in collective bargaining in accordance with labour laws. ■ That Labour Organisation may take collective actions in accordance with the relevant procedures, regulations and law.
Minimum Wages Law (2013) , Notification No. 1/2024	Section 12 (a-e), 13 (a-g)	<p>This Law was enacted to meet with the essential needs of the workers, and their families, who are working at the commercial, production and service, agricultural and livestock breeding businesses and with the purpose of increasing the capacity of the workers and for the development of competitiveness.</p> <p>The minimum wage of (6800) kyats was set on (9-8-2024) by Notification No. 1/2024.</p> <p>Project Proponent commits to comply the stipulations:</p> <ul style="list-style-type: none"> ■ For the employer not to pay wage less than the minimum wage stipulated, do not have the right to deduct any other wage ■ For the employer to inform rates of minimum wage relating to the business, allow the entry and inspection of the inspection officer, give the sick worker holiday for medical treatment in accord with stipulation and give holiday for the matter of funeral of the family of worker without deducting from the minimum wage.
Payment of Wages Law, 2016	Section 3, 4, 5, 7 (ii), 8, 9, 10, 14	<p>The Project Proponent commits to comply the stipulations:</p> <ul style="list-style-type: none"> ■ That salaries are to be paid at the end of the month or, depending on the size of the employing enterprise, between 5-10 days before the end of the month. The employer is permitted and required to withhold income tax and social security payments. Other deductions, e.g. for absence, may only be withheld in accordance with the law. ■ For the employer (a) to pay for salary either Myanmar Kyats or Foreign Cash permitted by National Bank of Myanmar. When delivery the salary (b) If the employer needs to pay the other opportunities or advantages, he can pay cash together with other materials according employee's attitude. ■ For finishing the contract, employer need to pay the salary (not more than one month) to employees. For the permanent worker, need to pay per monthly. If more than 100 employees, need to pay within the 5 days from

Relevant Laws, Rules and Regulations	Relevant Articles	Commitments
		<p>the end of month. If fire the employees, need to pay salary within two days after fire. When employee dies due to the accident, need to pay money as an insurance to employee's family within two days.</p> <ul style="list-style-type: none"> ■ For the employer to report to the Department with evidence of payment at later date agreed with the employee if the employer has difficulties to pay wages on time because of significant events (e.g. natural disaster). ■ For the employer to deduct expense which are allowance for accommodation and ferry service arranged by the employer, meal allowance, electricity charges, water service charges and income taxes liable to be paid by workers and cash paid in excess under mistake, which are not included in the expression of wages under this Law and not to deduct from the wages of the worker except the deduction as per Section 7. ■ For any deducting from the salary due to the employees' absence, the total cut salary not to be more than 50 % of his salary. ■ For overtime work, to allow the presiding overtime rate as set by the Law.
Leaves and Holidays Act, 1951	Section 4	<p>The Project Proponent commits to comply with the stipulations:</p> <ul style="list-style-type: none"> ■ For employee to be granted to pay public holidays as announced by the Government in the Myanmar Gazette. On average, Myanmar has 26 public holidays per year, depending on the date of the variable holidays. ■ For additional rules to apply in accordance with other laws, such as the Social Security Law (2012) for employees contributing to the Social Security Fund. ■ To grant earned leave with average wages or average pay for a period of ten consecutive days by his employer during the subsequent period of twelve months to every employee who has completed a period of twelve months continuous service.
Social Security Law, 2012	Section 11 (a)(b), 15(a), 16 (a), 18(b), 48(a), 49(a)(b), 51(a)(b), 53(a), 54(a)(b), 75	<p>The Project Proponent commits to comply the stipulations:</p> <ul style="list-style-type: none"> ■ For compulsory registration for social security system and benefits, the following establishments can be applied if they employ minimum number of workers and above determined by the Ministry of Labour in co-ordination with the Social Security Board:

Relevant Laws, Rules and Regulations	Relevant Articles	Commitments
		<ul style="list-style-type: none"> i. Production industries doing business whether or not they utilize mechanical power or a certain kind of power, works of production, repairing or services, or engineering works, mills, warehouses, establishments; ii. Government departments, Government organizations and regional administrative organizations doing business; iii. Development organizations; iv. Financial organizations, v. Companies, associations, organizations and their subordinate departments and branch offices doing business; vi. Shops, commercial establishments, public entertaining establishments; vii. Government departments and Government organizations doing business or transport businesses owned by regional administrative body, and transport businesses carried out with the permission of such department, body or in joint venture with such department or body; viii. Construction works carried out for a period of one year and above under employment agreement; ix. Works carried out with foreign investment or citizen investment or joint ventured businesses; x. Works relating to mining and gemstone contained in any existing law; xi. Works relating to petroleum and natural gas contained in any existing law; xii. Ports and out-ports contained in any existing law; xiii. Works and organizations carried out with freight handling workers; xiv. Ministry of Labour and its subordinate departments and organizations; xv. Establishments determined by the Ministry of Labour from time to time, in co-ordination with the Social Security Board and with the approval of the Union Government; that they shall be applied with the provisions of compulsory registration for Social Security System and benefits contained in this Law. <p>■ For provisions of compulsory registration under sub-section (a) to continue to be applied by this Law even though any of the following situations occurs if it continues to carry out such work:</p>

Relevant Laws, Rules and Regulations	Relevant Articles	Commitments
		<ul style="list-style-type: none"> i. Carrying out work by employing under stipulated minimum number of workers but more than one worker; ii. Changing the employer or changing the type of business. ■ For the Social security fund, to include the funds for health and social care, family assistant, invalidity benefit, superannuation benefit and survivors' benefit, unemployment benefit, other social security fund for social security system of compulsory registration and contribution stipulated by the Ministry of labour, other social security fund and social security housing plan fund. ■ For arranging insurance for the workers to enable to enjoy social security benefits by contributing to the social security fund. ■ For the employer to deduct contributions to be paid by worker from his wages together with contribution to be paid by him and pay to the social security fund and in such case he can incur the expense. ■ For the employer to effect insurance by registering for employment injury benefit insurance system contained in section 45 at the relevant township social security office and pay contribution to employment injury benefit fund in accord with stipulations in order that workers applied to provisions of compulsory registration may obtain the employment injury benefits. ■ For the inapplicability to the Workmen's compensation act. ■ For the employer (a) to pay contribution monthly to Employment Injury Benefit Fund at the rates stipulated under section 50. Moreover, he shall also bear the expenses for paying as such; (b) to pay defaulting fee stipulated under section 88, in addition to the contribution if fails to contribute after effecting insurance for employment injury benefit. ■ For the employers and workers (a) to co-ordinate with the Social Security Board or insurance agency in respect of keeping plans for safety and health in order to prevent employment injury, contracting disease and decease owing to occupation and in addition to safety and educational work of the workers and accident at the establishment; ■ For the employer (a) to report to the relevant township social security office immediately if a serious employment accident occurs to his insured worker. There shall not be any delay without sufficient cause to report as such. (b) A team of officers and other staff who inspect the establishments, if it is found out the

Relevant Laws, Rules and Regulations	Relevant Articles	Commitments
		<p>employment injury, death, and contracting disease, shall report to the relevant township social security office in accord with the stipulations.</p> <ul style="list-style-type: none"> ■ For keeping records of work.
Law protecting Ethnic Right, 2015	Section 5	<p>The Project Proponent commits to comply the stipulations</p> <ul style="list-style-type: none"> ■ For the Equal right between the Ethnic living in Myanmar. It enacted that if an ethnic loose the right, he can complain to the Regional or State Government to get the equal chance and find the equal right. ■ That project matters shall be informed, coordinated and undertaken in consultation with ethnic groups if projects are in areas with ethnic groups.
Control of Smoking and Consumption of Tobacco Product Law, 2006	Section 9	<p>The Project Proponent commits comply the stipulations to:</p> <ul style="list-style-type: none"> ■ (a) keep the caption and mark referring that it is a non-smoking area at the place mentioned in section 6 in accordance with the stipulations. ■ (b) arrange the specific place where smoking is allowed as mentioned in section 7, and keep the caption and mark also referring that it is a specific place where smoking is allowed, in accordance with the stipulations. ■ (c) supervise and carry out measures so that no one shall smoke at the non-smoking area. ■ (d) accept the inspection when the supervisory body comes to the place for which he is responsible.
SECTOR SPECIFIC / DEVELOPMENT		
Prevention from Danger of Hazardous Chemical and Associated Materials Rule, 2016	Section 61 (a)	<p>The Project Proponent commits to comply the stipulations:</p> <ul style="list-style-type: none"> ■ For organizations and licence holders who store the chemical and related substances to abide by the following facts for safety: <ul style="list-style-type: none"> (a). Installing the fire protection system in building to be stored in accordance with prescribed provisions of the Department of Fire Brigade and being the building, which is constructed to correspond for storing the chemical and related substances; (b). Sticking the warning sign according to hazard class, and keeping the safety equipment at the stored places;

Relevant Laws, Rules and Regulations	Relevant Articles	Commitments
		<p>(c). Storing only after checking certainly to the chemical and related substances which are kept completely with the pictogram, and packing system by the importers and possessors;</p> <p>To be safe, the user of chemical and related substances shall:</p> <ul style="list-style-type: none"> ■ Use only the registered restricted or conditional chemical and related substances; ■ Not use the unregistered, without labelled, unknown, damaged or expired chemical and related substances.
Prevention from Danger of Hazardous Chemical and Associated Materials Law, 2013	Section 8, 13, 20, 22, 15, 16, 17, 23, 27	<p>The Project Proponent commits to comply the stipulations:</p> <ul style="list-style-type: none"> ■ For Any person, who wants to do the business of chemical and associated materials, to apply to the central body for the acquisition of the license, attached with the management plan for the environmental conservation in accord with the stipulations”. ■ For License holder to apply to the central supervising body in accord with the stipulation for the relevant chemicals and associated materials using for his chemicals and associated materials business” for a certificate. ■ For the registered certificate holder to abide by the regulations contained in the registered certificate and shall follow the order and directives issued from time to time by the central supervising body”. ■ For the duties and powers of the central supervising board. ■ For the requirements: <ul style="list-style-type: none"> (a). Before works, license holder to be inspected by the relevant supervising and inspection team for safety and machinery/equipment check and (b). The persons who are discharging the duty to be asked to attend foreign training or preventative trainings conducted by government departments and organizations. ■ For License holders to <ul style="list-style-type: none"> (a). Follow the license regulations, (b). Follow directives on safe handling and shall ask workers to strictly follow (c). Shall provide necessary safety equipment and issue free personal protective equipment to workers, (d). Provide training in occupational safety (e). Determine the hazard to the environment, people and animals

Relevant Laws, Rules and Regulations	Relevant Articles	Commitments
		<p>(f). Provide fit for work medical check-up and keep records</p> <p>(g). Send permission letter to Department of Township Administration if the chemicals and associated material are permitted to store</p> <p>(h). Acquire in advance guidance and agreement from fire service department if using inflammable materials or explosives</p> <p>(i). Transport only the permitted amount of chemicals in accordance with prescriptive stipulations</p> <p>(j). Obtain approval of central supervising body if transporting chemical and associated material from the permitted region to any other region</p> <p>(k). Abide and operate in accordance with related environmental laws to avoid impacts and damage to the environment.</p> <ul style="list-style-type: none"> ■ For the license holder to have insurance in accordance with stipulations in case of compensation is required for losses related to people, animals and environment. ■ For the registered certificate holder shall apply again for using chemical which are not in the registered list. ■ For the license holder to <ul style="list-style-type: none"> (a). Classify the hazard level of chemicals and related substances in advance (b). Show Material Safety Data Sheet and warning signage (c). Provide safety equipment, personal protective equipment and training on their use (d). Possess, transport, store, use and discharge chemicals and related materials in accordance with stipulations, not import or export chemicals and related materials banned by the central supervising board.
Myanmar Investment Law, 2016	Section (50)(d),(51), (65),	<p>The Project Proponent commits to comply with:</p> <ul style="list-style-type: none"> ■ The stipulation to register the land lease contract at the office of Registry of Deeds in accordance with the Registration Act. ■ To mention appointment, replacement, providing employment of staff and workers, ensuring to comply the entitlements and rights in the labour laws and rules, settling dispute regarding human rights issues.

Relevant Laws, Rules and Regulations	Relevant Articles	Commitments
		<ul style="list-style-type: none"> ■ The stipulation: <ul style="list-style-type: none"> (a). To respect and comply with the customs, traditions, and traditional culture of the ethnic groups; (e). To inform to the Commission if natural mineral resources or antique objects are found that are not related to the investment permitted; (f). Not to make any significant alteration of topography or elevation of the land on which is entitled to lease or to use, without the approval of the Commission; (g). To abide by applicable laws, rules, procedures and best standards practiced internationally for this investment so as not to cause damage, pollution, and loss to the natural and social environment and not to cause damage to cultural heritage; (h). To list and keep proper records of books of account and financial statement and necessary financial matters relating to the investments performed by permit or endorsement in accordance with internationally and locally recognised accounting standards; (i). To close and discontinue the investment only after the payment of compensation to employees in accordance with applicable laws for any breach of employment contracts, closure of investment, sale and transfer of investment, discontinuation of investment, or reduction of workforce; (j). To pay wages and salaries to employees in accordance with applicable laws, rules, procedures, directive and so forth during the period of suspension of investment for a credible reason; (k). To pay compensation and indemnification in accordance with applicable laws to the relevant employee or his successor for injury, disability, disease or death due to the work; (l). To supervise foreign experts, supervisors and their families, who employ in their investment, to abide by the applicable laws, rules, orders and directives, and the culture and traditions of Myanmar; (m). To respect and comply with the labour laws; (n). To have the right to sue and to be sued in accordance with the laws; (o). To pay effective compensation for loss incurred to the victim, if there are damage to the natural environment and socioeconomic losses caused by logging or extraction of natural resources which are

Relevant Laws, Rules and Regulations	Relevant Articles	Commitments
		<p>not related to the scope of the permissible investment, except from carrying out the activities required to conduct investment in a permit or an endorsement;</p> <p>(p). To allow the Commission to inspect in any places, when the Commission informs the prior notice to inspect the investment;</p> <p>(q). To take in advance permit or endorsement of the Commission for the investments, which need to obtain prior approval under the Environmental Conservation Law and the procedures of environmental impact assessment, before undertaking the assessment, and shall submit the situation of environmental and social impact assessment to the Commission along the period of activities of the investments which obtained permit or endorsement of the Commission.</p>
Myanmar Investment Rules, 2017	Section 202, 203, 206, 212,	<p>The Project Proponent commits:</p> <ul style="list-style-type: none"> ■ To comply with all terms and conditions in the permit and other applicable laws when the investment is carried out. ■ To fully assist while negotiating with the Authority for settling the grievances of the local community that have been effected due to Investments. ■ To appoint expert foreigner as senior manager, technical and operational expert or advisor according to subsection (a) of the section 51 of the Law. ■ To obtain the permit or tax exemption or relief, to ensure the relevant insurance out of the following types of the insurance at any insurance business entitled. To carry out insurance business within the Union based on the nature of the business: Property and Business Interruption Insurance; Engineering Insurance; Professional Liability Insurance; Bodily Injury Insurance; Marine Insurance; or Workmen Compensation Insurance; Life Insurance; Fire Insurance.
The Foreign Investment Law (2012)	Section 17	<p>The Project Proponent follows:</p> <p>(a) abiding by the existing Laws of the Republic of the Union of Myanmar;</p> <p>(b) performing the business activities by incorporating a company under the existing Laws of the Republic of the Union of Myanmar by investor ;</p>

Relevant Laws, Rules and Regulations	Relevant Articles	Commitments
		<p>(c) abiding by the provisions of this Law, terms and conditions contained in the rules, procedures, notifications, orders, directives and permits issued under this Law;</p> <p>(d) using the land which he is entitled to lease or use in accord with the terms and conditions stipulated by the Commission and those contained in the agreement;</p> <p>(e) carrying out to sub-lease and mortgage the land and building which are allowed to carry out business under the permit, transfer the shares and the business to any other person for such investment business within the term of the business only with the approval of the Commission;</p> <p>(f) making no alteration of topography or election of the land obviously on which he is entitled to lease or use without the approval of the Commission;</p> <p>(g) informing immediately to the Commission if natural mineral resources or antique objects and treasure trove which are not related to the permitted business and not included in the original contract are found above and under the land on which he is entitled to lease or use continuing to carry out business on such land if the Commission allows, and transferring and carrying out to the substituted place which is selected and submitted by the investor if the permission of continuing to carry out is not obtained;</p> <p>(h) carrying out not to cause environmental pollution or damage in accord with existing laws in respect of investment business;</p> <p>(i) in case of a foreign company, if all of the shares are absolutely sold and transferred to any foreigner or any citizen, registering the transfer of share in accord with the existing law only after returning the permit with the prior permission of the Commission;</p> <p>(j) in case of a foreign company, if some of its shares are absolutely sold and transferred to any foreigner or any citizen, registering the transfer of share in accord with the existing law only after obtaining the prior approval of the Commission;</p> <p>(k) carrying out the systematic transfer of high technology relating to the business which are carried out by the investor to the relevant enterprises, departments or organizations in accord with the contract.</p>

Relevant Laws, Rules and Regulations	Relevant Articles	Commitments
The Yangon City Municipal Law (Second Amendment by State Administration Council Law No. 25/2021)	Summary	<ul style="list-style-type: none"> ◆ The Project Proponent commits to comply the stipulation: <ul style="list-style-type: none"> • Disposal of waste at designated places. • Disposal of sewage by authority concern.
The Import and Export Law, 2012	Section 7	The Project Proponent, as a license holder, commits to comply not to violate the conditions contained in the license.

3.2 Relevant International Conventions and Guidelines

3.2.1 International Conventions

Myanmar is a signatory to the international conventions listed in Table 3-2, which will have relevance to the Project.

Table 3-2 International Conventions of Relevance to the Project

Legislation	Relevance to the Project	Ratification Status (in Myanmar)
Vienna Convention for the Protection of the Ozone Layer 1988 and Montreal Protocol on Substances that Deplete the Ozone Layer 1989	The Project may use or generate ozone depleting substances.	Accession 16 th Sep 1998 (Vienna) & Accession 24 th Nov 1993 (Montreal)
United Nations Framework Convention on Climate Change 1992 (UNFCCC) and Kyoto Protocol 1997	The Project's operation will form part of Myanmar's total emissions output.	Entered in force 23 rd Feb 1995 (UNFCCC) and 16 th Feb 2005 (Kyoto Protocol)
Workmen's Compensation (Accidents) Convention 1925	The Project has risks to occupational health and safety.	Entered in force 16 th February 1956
Workmen's Compensation (Occupational Diseases) Convention 1925 and its Revision 1934	The Project has risks to occupational health and safety.	Entered in force 30 th Sept 1927; Revision entered in force 17 th May 2016

3.2.2 Good International Industry Practice Guidelines

GOLDEN LACE POSCO INTERNATIONAL CO., LTD. will undertake the Project activities in a manner guided by good international industry practice (GIIP). Applicable guidelines also considered for the Project include:

- International Finance Corporation (IFC) Performance Standards on Environmental and Social Sustainability (2012) and
- World Bank Group (WBG) EHS General Guidelines (2007)

3.3 Project Environmental and Social Standards

In December 2015, the National Environmental Quality (Emissions) Guidelines (EQEG) was rolled out. The EQEG provide the basis for regulation and control of noise and air emissions and effluent discharges from projects in order to prevent pollution and protect the environment and public health. These Guidelines are noted to be the same as that recommended by the IFC General EHS Guidelines (2007) (World Bank Group, 2007).

The standards as taken from the EQEG are provided in following table. The Project will comply with these standards.

3.3.1 Air Quality Standard

Table 3-3 National Environmental Quality (Emission) Guidelines

Parameter	Averaging period	Guideline value in $\mu\text{g}/\text{m}^3$
Sulfur dioxide(SO ₂)	24-hour	20
	10 minute	500
Nitrogen dioxide (NO ₂)	1-year	40
	1-hour	200
Particulate Matter PM ₁₀	1-year	20
	24-hour	50
Particulate Matter PM _{2.5}	1-year	10
	24-hour	25
Ozone	8-hourly daily maximum	100

Source: National Environmental Quality (Emission) Guidelines, 2015.

3.3.2 Waste Water Effluent Standards

Wastewater effluent standards from the National Environmental Quality (Emission) Guidelines (2015) are illustrated in Table 3-4.

Table 3-4 Wastewater Effluent Quality Standards

No	Parameter	Allowable Rate	Unit	Notes
1.	BOD (5 days at 20°C)	50	Mg/L	Depending on quality of waste discharging point
2.	Total Suspended Solids	50	Mg/L	
3.	Ammonia	10	Mg/L	
4.	pH Value	6 - 9	-	
5.	Sulfide (as HS)	1	Mg/L	
6.	Cyanide (as HCN)	0.1	Mg/L	
7.	Oil and grease	10	Mg/L	
8.	ChemicalOxygen Demand	250	Mg/L	
9.	Iron	3.5	Mg/L	
10.	Phenols and cresols	0.5	Mg/L	
11.	Total coliform bacteria	400	100 mL	
12.	Zinc	2	Mg/L	

No	Parameter	Allowable Rate	Unit	Notes
13.	Chromium	0.5	Mg/L	
14.	Arsenic	0.1	Mg/L	
15.	Copper	0.5	Mg/L	
16.	Mercury	0.01	Mg/L	
17.	Cadmium	0.1	Mg/L	
18.	Selenium	0.1	Mg/L	
19.	Lead	0.1	Mg/L	
20.	Nickel	0.5	Mg/L	
21.	Temperature	3	°C	At the edge of the established mixing zone

Source: National Environmental Quality (Emission) Guidelines, 2015.

3.3.3 Noise Quality Standard

With the progress in the development of the National Environmental Quality (Emission) Guidelines, noise quality assessment has to meet the guidelines' value to be in compliance with MOECAP's IEE requirements. The guidelines' value for noise levels are shown in Table 3-5. The limits prescribe the requirement for noise impacts not to exceed these levels or result in a maximum increase in background levels of 3 dB at the nearest offsite sensitive receiver.

Table 3-5 National (Myanmar) Environmental Quality (Emission) Guidelines Noise Level

Receptor	One Hour, LAeq (dBA)	
	Daytime	Night-time
Residential/ Institutional/ Educational	55	45
Industrial/ Commercial	70	70

Source: National Environmental Quality (Emission) Guidelines, 2015

3.4 GOLDEN LACE POSCO INTERNATIONAL CO., LTD. 's Environmental and Social Policies

3.4.1 Project Developer's environmental Policy, Frameworks and Standard Guidelines

3.4.1.1 Environmental Policy and Framework

Golden Lace POSCO International Co., Ltd. (GLPI) has an environmental Policy for health, safety and environment and includes as follow;

- ◆ GLPI focuses on enabling business operation to be improved in an environmentally responsible manner and aim to minimal environmental Impact.

- ◆ GLPI is applicable in achieving its goals by all employees and managers regardless of cooperate hierarchy, suppliers who individually and collectively are responsible for performance across the business vale chain.
- ◆ GLPI's environmental policy may result in disciplinary action, up to and including dismissal, contracted personnel who fail to comply with this policy may have their contract terminated, not renewed, or be subject to other appropriate actions.
- ◆ GLPI reserves the right to amend or update the policy as required from time to time.

The Framework for Environmental Conservation of GLPI including responsibilities is.

- ◆ Responsibilities for environmental performance are visible throughout the company, with clarity for line management accountability. The Health, Social and Environment (HSE) Department and its working group are committed to embed a responsible culture instilling environmental best practices, develop management plans to monitor impacts, and minimize any adverse impact from the operation of project.

3.4.1.2 Environmental and Social Standard Guideline of Project Proponent

Golden Lace POSCO International Co., Ltd. (GLPI) complies the following standards and guidelines during the construction, operation and decommissioning phases and implement procedures to manage the environmental and social performance of the Project.

- National Environmental Quality (Emission) Guidelines, Myanmar (2015),
- Performance Standards on Environmental and Social Sustainability of IFC (2012),
- Waste Management Facilities of IFC's Environmental Health, and Safety Guidelines (2007), and
- Water and Sanitations of IFC's Environmental Health, and Safety Guidelines (2007),

3.4.1.3 Health and Safety Policy

GOLDEN LACE POSCO INTERNATIONAL CO., LTD. 's Health and Safety Policy is described in **Appendix F**.

4. PROJECT DESCRIPTION

This section provides a description of the Proposed Project.

4.1 Project Background

The existing Golden Lace - Daewoo currently has two lines and two warehouses. The proponent plans to add one warehouse to augment its storage capacity. The two lines have the capacity of milling 100 tons and 60 tons per day (total 160 tons per day).

In accordance with criteria specified in MOECAP's EIA Procedure's section of "Food and Beverage Manufacturing" from Appendix 1, the proposed project falls in the category of Initial Environmental Examination (IEE) requirement as specified in the section of "Food and Beverage Manufacturing" from Appendix1 of MONREC's Environmental Impact Assessment (EIA) Procedure (2015) which states that mill capacity of less than 300 tons/day is required to conduct an IEE.

Hence, this document is prepared as an IEE pursuant to sections 15 and 16 of Chapter VII of the Environmental Conservation Act, 2012 and to section 10, 11, and 12 of Chapter II of EIA Procedure. As instructed in the EIA Procedures (2015), this IEE identifies relevant key environmental factors of the project site and potential environmental impacts from the project and outlines an environmental management plan with mitigation measures.

4.2 Project Location with AOI

The project is located within the Shwe Lin Ban Industrial Area (Hlaing Thar Yar Township, Yangon) with GPS location as follows N 16° 54' 28" E 96° 04' 14". The industrial estate is situated between No. 4 Highway and Yangon - Pyay Railway line near Shwe Pyi Thar Township. There are about a hundred small and medium scale industries in the industrial estate. Some areas in the industrial zone are allocated for residential housing.

The plot where the rice mill is located will have an area of 3.388 acres.



Figure 4-1 Rice Processing Complex of GLPI



Figure 4-2 Surrounding Environment of Project Area

The surrounding 2 Km radius area is set up for the Area of Influence (AOI) as shown in **Error! Reference source not found..**

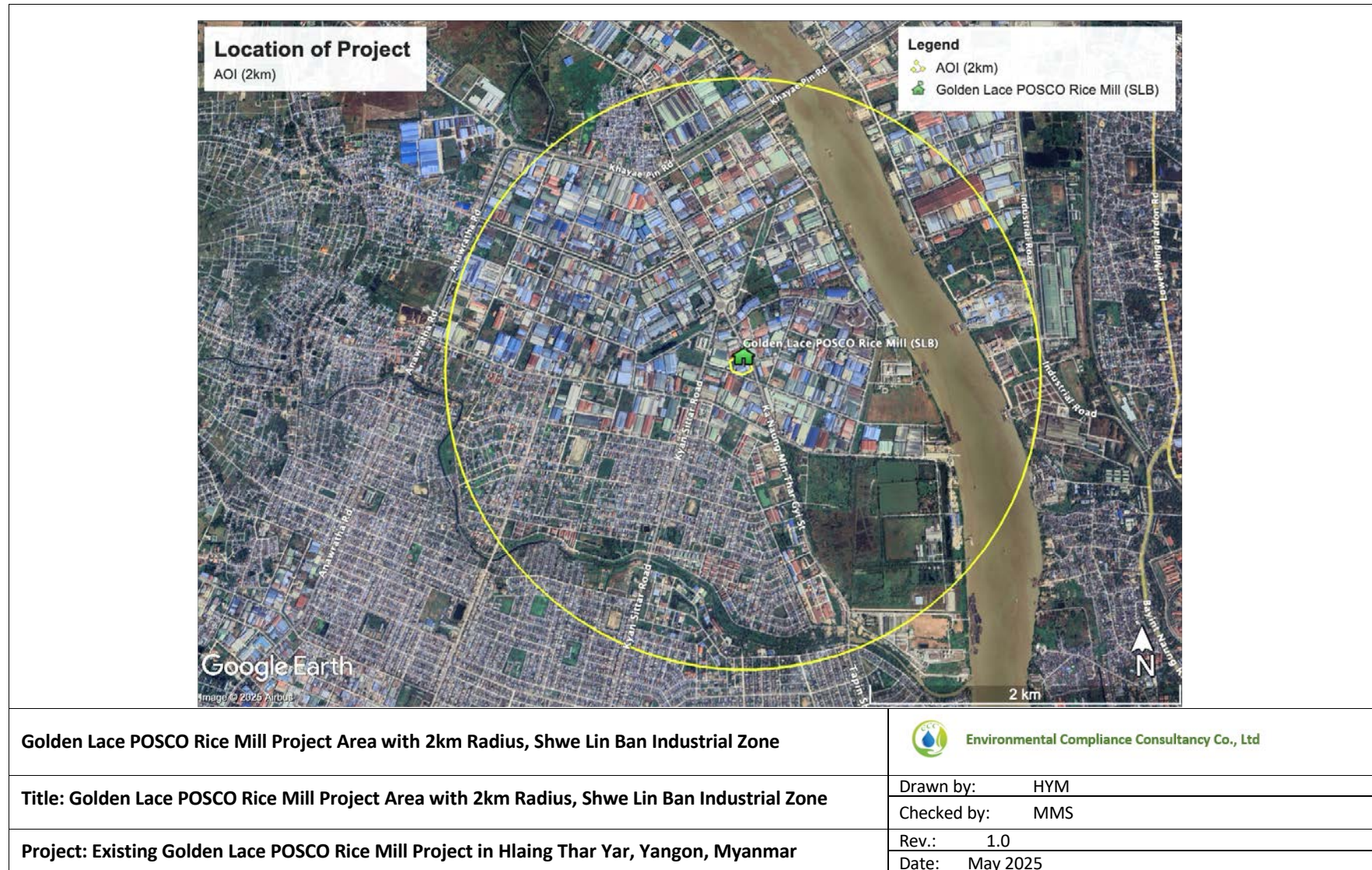


Figure 4-3 Golden Lace POSCO Rice Mill Project Area With 5km Radius, Hlaing Thar Yar

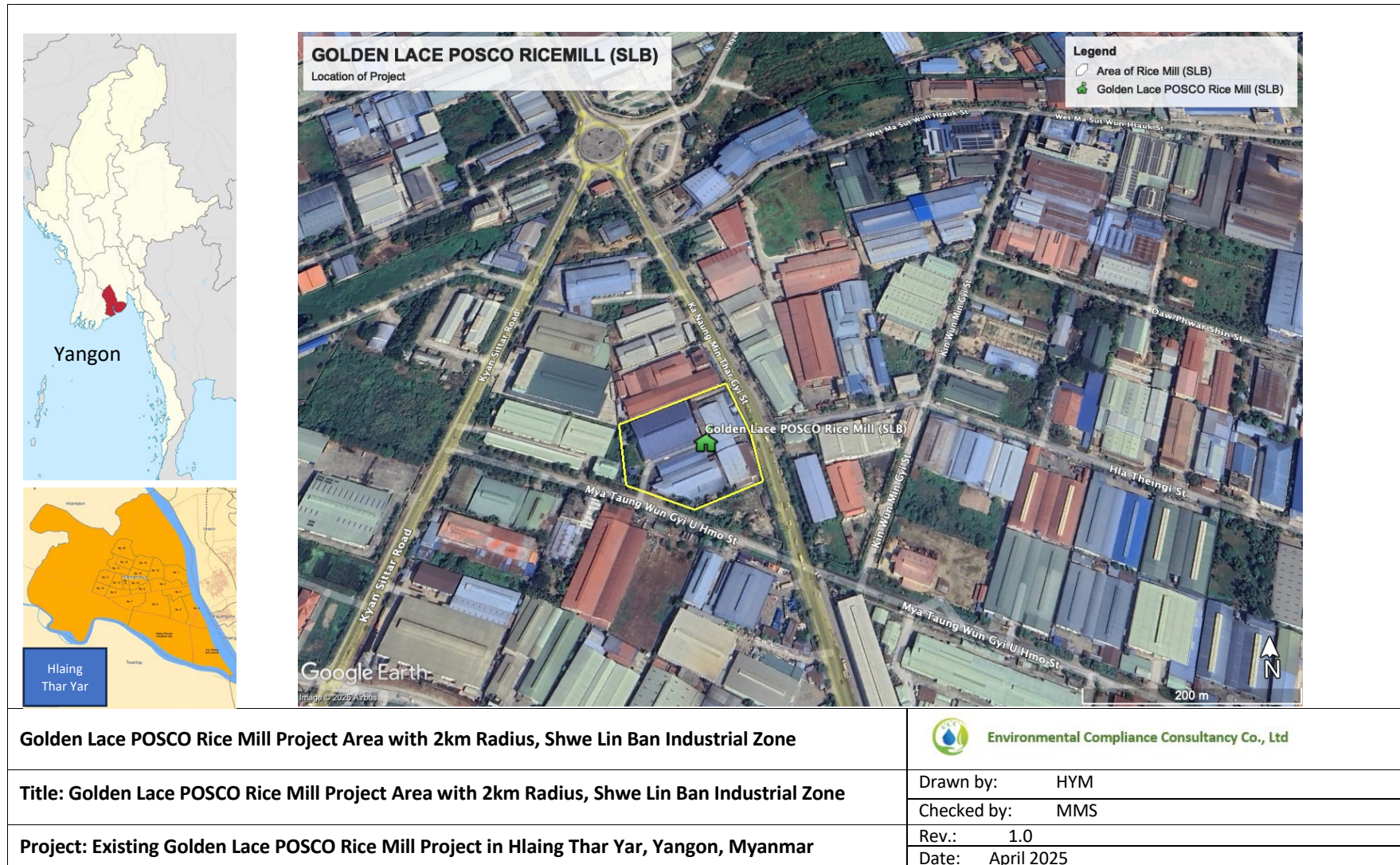


Figure 4-4 Golden Lace POSCO Rice Mill Project Area In Hlaing Thar Yar, Yangon

4.3 Alternatives

In terms of alternative, such area which does not need to take into account the resettlement issue, and no concerns about electricity, availability of water and transport system of Industrial Area (Hlaing Thar Yar Township, Yangon). The industrial estate is situated between No. 4 Highway and Yangon - Pyay Railway line near Shwe Pyi Thar Township.

There are about a hundred small and medium scale industries in the industrial estate. Some areas in the industrial zone are allocated for residential housing.

Therefore, generally the impact on public is not much significant and hence that location was selected for the proposed project.

The buildings in the complex would adopt the features of the sustainable buildings mentioned below as much as possible in order to be environmentally responsible and resource efficient.

- a) Energy efficient through the National Grid Line;
- b) Efficient use of water through recycling and ground water;
- c) Non-toxic material in-door environment;
- d) Use of recycle/recyclable materials; and
- e) Efficient waste utilization and disposal.

The project will also include waste management plan and emergency response plan.

The public consultation will also be carried out and the concerns, opinions and suggestions of the public would be taken into consideration for CSR programs, and developing the Environmental Management Plan.

Therefore, the project would be environmentally as well as socially accountable and this area is the best option for the proposed project.

Alternatives to the proposed Rice Processing Complex project could not include other agricultural ventures like integrated rice complexes to encompass the entire rice value chain from pre-harvest, harvest, and post-harvest activities including farm mechanization, ensuring food safety and traceability because of purchasing paddy from farmers.

4.3.1 *Alternatives for Sustainable and Energy-efficient Rice Processing Technologies*

Sustainable and energy-efficient rice processing technologies involve adopting practices that reduce energy consumption, minimize environmental impact, and enhance resource utilization. These alternatives include energy-efficient motors and equipment, water-saving systems, green energy adoption, and waste management strategies.

4.3.2 *No Project Options*

The “no project” alternative would mean either, the substitution of the project with an alternative eligible project, or continued reliance on on-farm facilities.

Instead of canceling the proposed Rice Processing Complex project, several alternatives could be considered. These include scaling back the project, modifying the project's scope, or exploring alternative business models. For example, a smaller mill with a limited capacity could be built initially, or the project could focus on a specific type of rice or a niche market.

If the proposed project is not implemented, economic benefits generated by the project would not be gained. Benefits loss would include:

- ◆ Employment generation and project expenditures during the development and operation of the project;
- ◆ Potential loss/slowdown of trade and cooperation;
- ◆ Loss of revenue for the Union and regional governments;
- ◆ Potential loss of infrastructure upgrading in the Industrial Area;
- ◆ Potential slowdown in the economic development of Yanogn Region.

4.4 Project Overview

Details of the environmental setting around the rice mill site and relevant information of key project functions is tabulated in **Error! Not a valid bookmark self-reference..**

Table 4-1 Environmental Setting of the Site

No.	Particulars	Details
1	Location	
	Town/Village	Hlaingtharya
	District	Hlaingtharya
	Region	Yangon
	Project Area	13.38 Acres
	Area Lot No.	No.322, Kanaung Min Thar Gyi Road, Shwe Lin Ban Industrial Zone, Hlaingtharya Township, Yangon, Myanmar
2	Latitude	N 160° 54'28"
3	Longitude	E 960° 04'14"
4	Elevation Above Mean Sea Level (MSL)	0m
5	Climatic conditions per Meteorological Department	
	Weather	Tropical monsoon climate with short
	Average Temperature	Typically varies from 19°C to 37°C
	Average Temperature	27.4°C
	Precipitation	109.73 inches
	Average Annual Wind Speed	4.2 km/h
	Relative Humidity	73.4%
6	Present Land Used at the Proposed site	Industrial
7	Nearest Highway/Road	Kyan Sittar Road
8	Nearest Village	Not applicate
9	Nearest Town	Yangon
10	Nearest River	Hlaing River (1 Kilometer east)

No.	Particulars	Details
11	Schools and Hospitals	None within 5 Km radius
12	Hills/Valleys	None within 5 Km radius
13	Archaeologically important places	None within 5 Km radius
14	Nearest Place of Tourist/Religious Importance	None within 5 Km radius
15	Ecologically Sensitive Areas (National Parks/Wildlife Sanctuaries/ Bio-Sphere	None within 5 Km radius
16	Reserved/Protected forests within 10 Km	None
17	List of Industries in the Region	Industrial companis
18	Topography of the Plant Site	Plain landscape
19	Nature of Soil	Silty-Clay
20	Major Crop in the Study Area	Not applicable

Table 4-2 Information of Key Project Functions

Project	Technical Features	Purpose/ Function
Generators	3 Nos backup diesel generator (500kWh/ 250kWh/ 130 kWh)	Generating electricity for whole plant
Mills	Two lines have the capacity of milling 100 tons and 60 tons per day (total 160 tons per day).	Running rice mill

4.5 Project Activities

As a whole, the establishment of the project consists of construction, electricity generation, and milling process.

4.5.1 Construction Activities

As mentioned above, the rice milling lines have been operational and the construction phase will include only the one proposed warehouse that will be constructed to augment the storage capacity of the rice mill. The project proponent has charged of managing construction plans and activities and implementing relevant measures including monitoring and implementation of the environmental management plan (EMP) (as shown in Chapter 7). The construction of the two warehouses is taken six months.

The main construction works that will be carried out for Shwe Lin Ban rice mill are the following.

- ◆ Excavation of soil.
- ◆ Construction of the building (include excavation for the walls);
- ◆ Installation of all equipment and machineries (where applicable).
- ◆ Vehicle movement

The layout and land use design for the construction phase of the Rice Processing Complex project is illustrated in Figure 4-5.

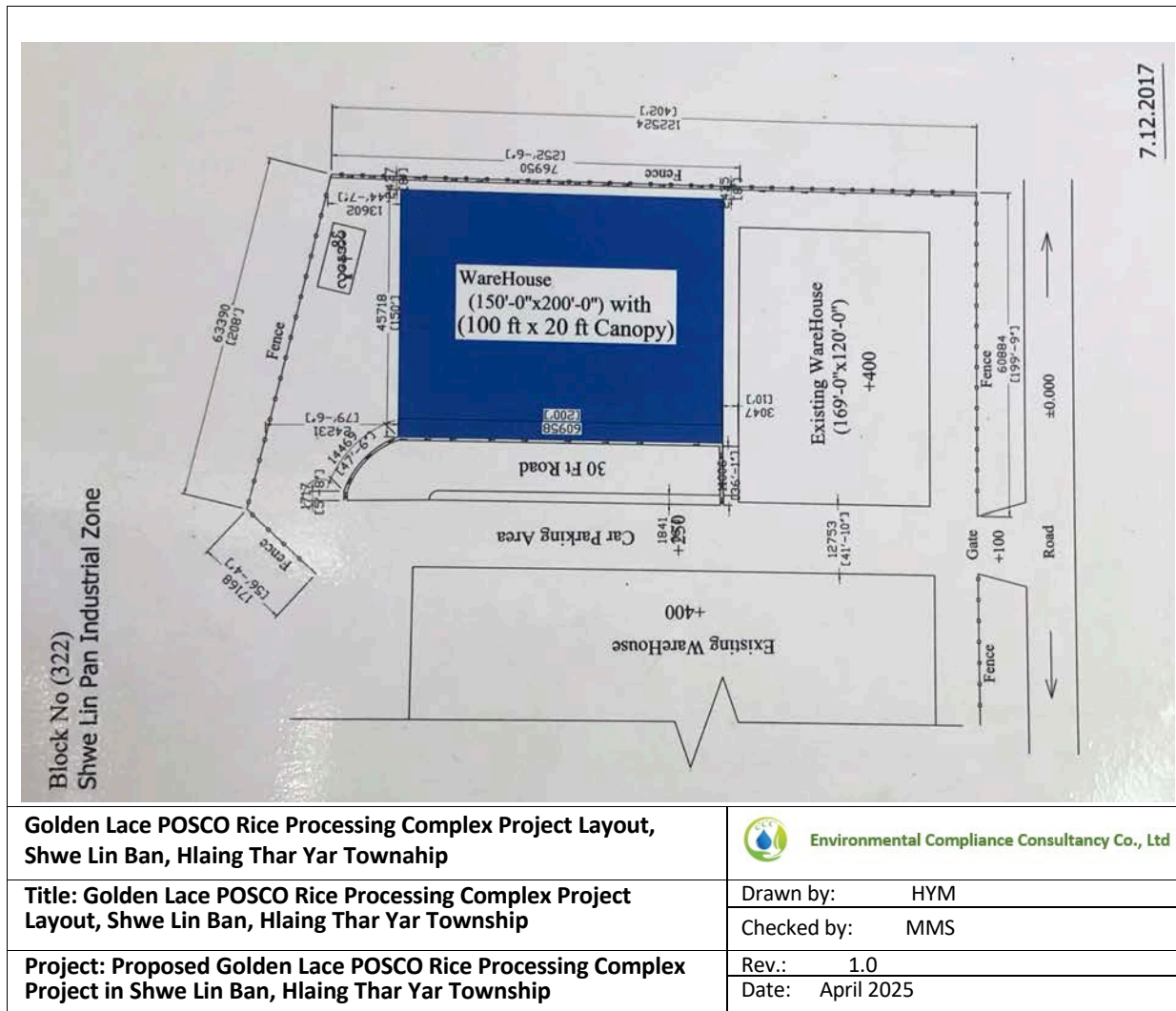


Figure 4-5 As built layout of existing mill with expansion location

Project Components are shown in Figure 4-6.



Office



Rice Mill -1



Rice Mill-1



Rice Whitener



Broken Sifter



Shaker for broken rice & head rice separation



Destoner



Rice Mill-2



Rice Mill - 2



Warehouse 1



Warehouse 3



Rice Bag Storage



Rice Bag Storage



Bran Storage Area





Transformer



Power Generator House



Staff house



Canteen



Water Storage Tank



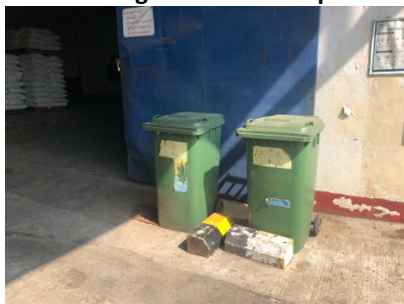
Water Purification Plant



Drinking Water Supply



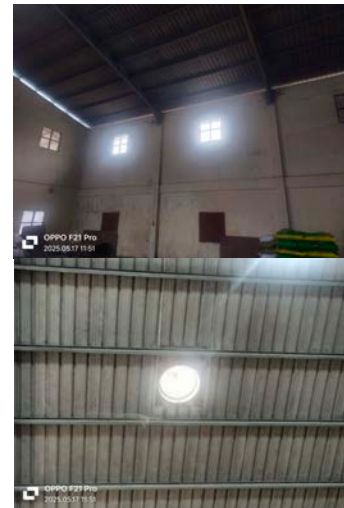
Underground Water Pipe



Waste Bin



Fuel Storage Area



Lighting inside of Mill



Fire Extinguisher



Temporary Waste Disposal Area



Security House

Figure 4-6 Project Components

4.5.2 Operation Activities

Rice Processing Complex process consists of 8 Steps in the rice processing plant .

- 1) Raw Feeding Section
- 2) Cleaning Section
- 3) Destoner Section
- 4) Whitening Section
- 5) Polishing Section
- 6) Grading Section
- 7) Color Sorting Section
- 8) Weighing & Packing Section

Raw Feeding Section

The white rice raw / brown rice (white or parboiled) are feeding to cleaner by passing through elevators & conveyor of raw feeding section

Cleaning Section

At Cleaner, while the introduced raw rice / Brown Rice (white / parboiled) are passing through the suction air stream , light garbage , dust & point are removed to dust catching chamber by air stream force. By doing so, raw rice / Brown rice (white/parboiled) are cleaned.

Destoner Section

The cleaned raw rice / Brown Rice (white/parboiled) come out from Cleaner is pass through the Destoner by means of Elevator. During the time of cleaned raw rice /Brown rice (white/parboiled) are passing through the Destoner, the iron pieces /scrub contained in cleaned raw rice /Brown Rice (white/parboiled) are sharply separated & kept separately by means of Vibration force of Destoner. The Cleaned & Iron free raw rice /brown rice (white /parboiled) are ready for whitening.

Whitening Section

After Destoner process, the cleaned brown rice must be introduced to the whitening stages. There are three stages or four stages of whitening machines are installed at whitening section. The top layer of the brown rice must be removed by passing through the whitening machine, the said bran layer must be removed by abrasive surface of the whitener cone and whitener sieve.

For the case of the cleaned rice, whitening process must be not required due to white rice is removing bran layer. From whitening machine, the bran layers are removed as a fine powder, it may be removed by suction air and collected and the bran catching room. After passing through the whitener, the white rice and broken rice mixture is occurred and said mixture must be pass through the rotary shifter for removing the smallest size of the broken.

Broken rice produced isn't make rice powder . It is normally export & direct local sale.

Polishing Section

The whitened rice or whitened par boiled rice, white rice raw must be pass through the polishing section for getting silky rice grain or silky par boiled rice grain. There are 2 or 3 stages of polishing machines are installed. By passing through the polisher, the produced bran must be taken by suction air and collected in the bran room. The produced products from polisher are a mixture of whole carnal head rice and assorted broken rice or white rice or par boiled rice.

Grading Section

The mixture received from the polishing section is mixture of whole kernel head rice, big broken, large and small broken. As per specification of the finished good, mostly whole kernel head rice and big broken are required for mixing. The other are not required for the finished good. Therefore, rice grading section is required for removing large broken and small broken from the mixture of the polished product. The mixture produced product received from polisher are introduced into the rotary sifter for grading such as whole carnal, head rice, big broken, large broken respectively. The received of the whole carnal, head rice, big broken, large broken are separately collected into the separate tanks.

Color Sorting

The major function of color sorting machine is for removing coloring rice such as dark grain, dead grain and yellow and red grain etc. The whole carnal head rice and big broken are mixed by proportionate mixture and introduce into the color sorter. As per function of the color sorter, the white rice or par boiled rice doubled polished sortexed are received as finished goods.

Weighing and Packing

The finished good received from color sorter are introduced into the weighing and packing machine for getting ready cargo for the sale.

Packing marking printing work is made by out source printing work.

The flow diagram of complete Rice Processing Complex process is illustrated in Figure 4-7.

Production Process

Bron Rice (white rice) & Brown Rice (Par boiled)

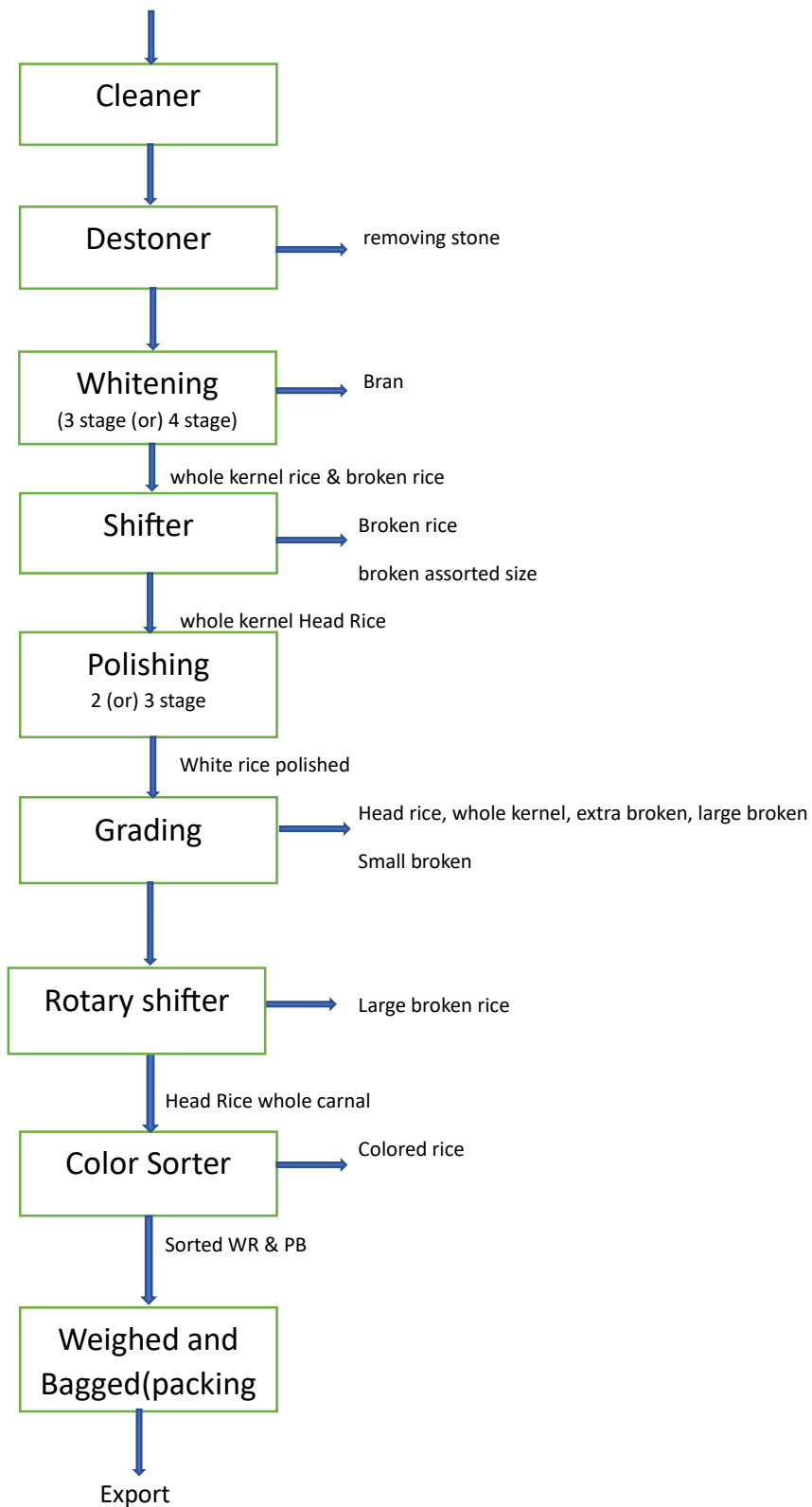


Figure 4-7 The flow diagram of complete Rice Processing Complex process

4.5.3 State of Rice Storage to Prevent Mold, Infection, and Odor

Before transporting RC and raw rice from the importer to the warehouse, samples are taken and checked by the factory QC to ensure that the moisture content is between 14% and 14% and that there are no pests.

According to the QC result, if the moisture is 14% or less and there are no pests, the product is transported to the storage facility by vehicle.

While unloading the truck, a sample is taken from each bag of rice and checked for moisture and bacteria. If it meets the specifications, it is accepted, and if it does not, it is returned to the supplier.

The rice received is accepted by the type of rice in a pallet system. The pallets are supported by wooden pallets.

The quality of rice in the stored bins is checked weekly and if necessary, the bins are moved, turned upside down, and disinfected with Aluminum Phosphid 56% Tablet if pests are found.

The Material Safety Data Sheet of Aluminum Phosphid 56% Tablet is shown in **Appendix E**.



Figure 4-8 Aluminum Phosphide 56% Tablet

4.6 Investment for the proposed Project

The investment period of this project is (50) years and the company is joint venture with local partner and its foreign investment amount is US\$ (4,387 million). The company is foreign direct investment company.

The Investment of the whole project is presented in following table.

Table 4-3 Investment value of the project

Particular	USD
Cash	2,117,000
Machineries & equipment	515,500
Construction materials	-

Particular	USD
Plant & Machinery	-
General machinery	-
Electrical Work	-
Land (Rental Fee)	1,455,000
Building	300,000
TOTAL	4,387,500


4.7 Project Supply

4.7.1 Electricity Supply

The project relies on self-power supply generated from National Grid (Average Unit: 8,000 kWh per month) and 3 backup diesel generators (Gensets).

The Specification of the OLTC Voltage Transformer (on load) is presented in Table 4-4.


Table 4-4 Specification of the OLTC Voltage Transformer & Voltage Stabilize

No.	Description	Information
1	Brand (Transformer)	Yangon Transformer (Local)
2	Type of Transformer	Off/No Load Tap Changer Transformer (NLTC)
3	Purchased from	Through Khin Maung Nyunt Trading Limited.
4	Installation by	Khin Maung Nyunt Trading Limited.
5	Installed date	2005
6	KVA	1000 KVAx1 Nos (NLTC)
7	Price	-
8	Contract with	-
9	Connection	1000 KVA Transformer  1000 KVA Voltage Stabilizer

No.	Description	Information
10	Function	Off-load tap changers for transformers (DETC) are used to change the transmission ratio in order to adjust the transformer to grid conditions. Therefore tap changer for transformers have several pins to connect with the coil windings. No-load tap changers (NLTC), also known as de-energized tap changers (DETC), off-load tap changers, and, off-circuit tap changers (OCTC), employ manually operated switching equipment that changes the transformer turns ratio of the three phases simultaneously and by the same amount.



1000 KVA Transformer is linking to 1000 KVA Voltage Stabilizer.

11	Brand (Voltage Stabilizer)	LIOA (Vietnam)
12	Purchased from	Through Khin Maung Nyunt Trading Limited.
13	Installation by	Khin Maung Nyunt Trading Limited.
14	Installed date	2005s
15	Current Inspection by	I.E.M Co., Ltd.
16	KVA	1000 KVAX1Nos (Off Load Transformer)
17	Price	-
18	Contract with	-
19	Connection	1000 KVA Voltage Stabilizer  Mill 1 and Mill 2
20	Function	A voltage stabilizer is a power supply circuit or power supply device that can automatically adjust the output voltage. Its function is to stabilize the power supply voltage that fluctuates greatly and does not meet the requirements of electrical equipment within its set value range, so that various circuit or electrical appliances can be stabilized. The equipment can work normally under the rated working voltage.
21	Delay Time (in SLB)	At least 5 Sec (To change the voltage to raise or lower direction.) Tolerance = $\pm 3\%$ to 5% (380V)

No.	Description	Information
22	Type	Oil Type It depends on usage whether need to change the oil or not. But we can use 7 or 8 years without changing.
23	Oil Replacement History at SLB	Not yet. If it changes the oil, it will be very first time.
24	Maintenance Plan	The regular maintenance should be at least 6 months/1 times in a year where I.E.M will check the connection, Motor drive, tolerance, Cable and oil status. A detail maintenance plan will support by I.E.M.

The monthly electricity demand for the year 2023 and 2014 is shown in Table 4-5. The specification of 3 Gensets are described in

Table 4-6.

Table 4-5 Monthly Electricity Demand of Operation Phase

YEAR	2023	2024
Month	Unit (kWh)	Unit (kWh)
Jan	33,990	18,150
Feb	60,390	11,550
Mar	43,230	11,550
Apr	20,460	7,590
May	19,470	12,870
Jun	5,610	30,030
Jul	41,250	25,740
Aug	2,640	32,340
Sep	2,970	46,200
Oct	4,950	36,630
Nov	41,580	25,740
Dec	13,200	12,870
Total	289,740	271,260

Table 4-6 The Gensets' Specification

Particular	Specification		
Name	500 KVA	250 KVA	9 KVA
Fuel	Diesel	Diesel	Diesel
Brand Name	ASKA	Power Max	Power Max
Country Org	Turkey	China	China
Country Manufacture	China	China	China
No. of Unit	1 Nos	1 Nos	1 Nos

4.7.2 Fuel Supply and Storage

The monthly diesel usage for the electricity supply by 3 gensets is 110 gal per month and the monthly fuel demand for the year 2023 and 2014 is shown in Table 4-7.

Table 4-7 Monthly Fuel supply for the Electricity Supply by Generator

YEAR	2023	2024
Month	Unit (Gal)	Unit (Gal)
Jan	27.5	986.0
Feb	22.5	872.0
Mar	32.5	116.0
Apr	40.0	291.0
May	42.5	429.0
Jun	27.5	229.0
Jul	27.5	581.0
Aug	15.0	307.5
Sep	42.5	630.5
Oct	35.0	96.0
Nov	22.5	71.0
Dec	279.0	30.0
Total	614	4,639

The fuel Storage area is Stainless Steel Base Building with L(10')xW(9')x H (8') and the location of the Fuel Storage Area is demonstrated in Figure 4-9. The normal Storage Capacity is 1,100 Ga/22 Drums.



<https://maps.app.goo.gl/cq6GaZZGmDxb2mui8>

Figure 4-9 Location of Fuel Storage Area

4.7.3 Use of Materials, Resources and Storage

By the process of the Rice Mill, it is only involves removing the bran and germ layers from the raw material as brown rice gain through cleaning, Whiting and polishing, and grading of the final rice product.

Raw materials (Brown rice gain) are bought at factory from merchants. Then, it is weighed using weighbridges and hauled by truck tippers and cranes to storage in Warehouses.

The storage capacity of warehouse is as follow.

- ◆ Raw (WR Raw / BR) = 5846 MT,
- ◆ By product = 1020 MT
- ◆ Finished good = 1237.5 MT

4.7.4 Transportation

Kyan Sittar Road becomes the primary transportation routes for the project. The rice mill's receiving and shipping operations will impact the existing traffic with an additional 10-20 heavy trucks movement per week can be expected in the peak season. The increase in number of traffic is envisaged to temporarily increase due to higher production during these times.

4.7.5 Water Supply

Three tube wells have been installed and are intended primarily to provide domestic water supply for the workers in the rice mill. Daily water consumption is projected at 400 gal/day for domestic uses (drinking and sanitation).

4.7.6 Machinery and Equipment

The List of Machinery and Equipment using for Operation Phase of Rice Processing Complex is presented in Table 4-8.

Table 4-8 List of Machinery and Equipment using for Operation Phase

Sr No.	Item	PARTICULAR & MODEL			QTY
I	Machinery				
	Mill-2	Input Hopper	W 0.8 x L 0.8 x H 0.8 m	380 KG	
		Bucket Elevator	Type: Centrifugal 5x4	3 ton/hr	1
			Height: 10.5 m		
		Temporary Storage Tank	W 2.0 m x L 3.0 m x H 3.0 m	13 ton	
		Bucket Elevator	Type: Centrifugal 5x4	3 ton/hr	1
			Height: 10.5 m		
		Sub Tank	W 0.7 m x L 0.7 m x H 1.0 m	0.35 ton	
		Vibriating Screen	W 0.7 m x L 2.5 m x H 1.2 m		1
		Bucket Elevator	Type: Centrifugal 5x4	3 ton/hr	1
			Height: 10.5 m		
		Sub Tank	W 0.7 m x L 0.7 m x H 1.0 m	0.35 ton	
		Destoner		5 ton/hr	1
		Bucket Elevator	Type: Centrifugal 5x4	3 ton/hr	1
			Height: 10.5 m		
		Sub Tank	W 0.7 m x L 0.7 m x H 1.0 m	0.35 ton	
		Husker # 1			1
		Blower # 1			1
		Husker # 1			1
		Blower # 2			1
		Bucket Elevator	Type: Centrifugal 5x4	3 ton/hr	1
			Height: 10.5 m		
		Bucket Elevator	Type: Centrifugal 5x4	3 ton/hr	1
			Height: 10.5 m		
		Sub Tank	W 0.7 m x L 0.7 m x H 1.0 m	0.35 ton	
		Paddy Separator	Row: 2 Stage: 20	5 ton/hr	1
		Bucket Elevator	Type: Centrifugal 5x4	3 ton/hr	1
			Height: 10.5 m		
		Screw Conveyor	pi: 200 mm L 4.0 m		1
		Sub Tank	W 0.7 m x L 0.7 m x H 1.0 m	0.35 ton	
		Destoner	Model: SGA5B-T	3-5 ton/hr	1

Sr No.	Item	PARTICULAR & MODEL			QTY
			Air Vol: 80~90 m3/min		
			Static Prssr:-0.7 kPa		
		Bucket Elevator	Type: Centrifugal 5x4	3 ton/hr	1
			Height: 10.5 m		
		Sub Tank	W 0.7 m x L 0.7 m x H 1.0 m	0.35 ton	
		Whitener # 1	Model:VTA5AA-TA	2.5 ton/hr	1
			AIR VOL; 30 M3/min		
			Pressure:-80 to-100mmAq		
		Bucket Elevator	Type: Centrifugal 5x4	3 ton/hr	1
			Height: 10.5 m		
		Sub Tank	W 0.7 m x L 0.7 m x H 1.0 m	0.35 ton	
		Whitener # 2	Model:VTA5AA-TA	2.5 ton/hr	1
			AIR VOL; 30 M3/min		
			Pressure:-80 to-100mmAq		
		Bucket Elevator	Type: Centrifugal 5x4	3 ton/hr	1
			Height: 10.5 m		
		Sub Tank	W 0.7 m x L 0.7 m x H 1.0 m	0.35 ton	
		Whitener # 3	Model:VTA5AA-TA	2.5 ton/hr	1
			AIR VOL; 30 M3/min		
			Pressure:-80 to-100mmAq		
		Bucket Elevator	Type: Centrifugal 5x4	3 ton/hr	1
			Height: 10.5 m		
		Sub Tank	W 0.7 m x L 0.7 m x H 1.0 m	0.35 ton	
		Whitener # 4	Model:VTA5AA-TA	2.5 ton/hr	1
			AIR VOL; 30 M3/min		
			Pressure:-80 to-100mmAq		
		Bucket Elevator	Type: Centrifugal 5x4	3 ton/hr	1
			Height: 10.5 m		
		Sub Tank	W 0.7 m x L 0.7 m x H 1.0 m	0.35 ton	
		Polisher # 1	Model;KB75HS-T,RPM;850	5 ton/hr	1
			Air Vol:40~60 m3/min		
			Static Press:-1.5 ~2.0 Kpa		
		Bucket Elevator	Type: Centrifugal 5x4 Height: 10.5 m	3 ton/hr	1
			Height: 10.5 m		
		Sub Tank	W 0.7 m x L 0.7 m x H 1.0 m	0.35 ton	
		Polisher # 2	Model: KB40G-T	2.5 ton/hr	1
			Air Vol: 35~40 m3/min		
			Static Prssr:-130~150 mmAq		
		Bucket Elevator	Type: Centrifugal 5x4	3 ton/hr	1
			Height: 10.5 m		
		Sub Tank	W 0.7 m x L 0.7 m x H 1.0 m	0.35 ton	

Sr No.	Item	PARTICULAR & MODEL			QTY
		Polisher # 3	Model: KB40G-T	2.5 ton/hr	1
			Air Vol: 35~40 m3/min		
			Static Prssr:-130~150 mmAq		
		Bucket Elevator	Type: Centrifugal 5x4	3 ton/hr	1
			Height: 10.5 m		
		Sub Tank	W 0.7 m x L 0.7 m x H 1.0 m	0.35 ton	
		Vibriting Screen	Model: MMQP100x3	5 ton/hr	1
		Bucket Elevator	Type: Centrifugal 5x4	3 ton/hr	1
			Height: 10.5 m		
		Length Grader			6
		Vibriting Screen			1
		Bucket Elevator	Type: Centrifugal 5x4	3 ton/hr	1
			Height: 11.0 m		
		Color Sorter # 1	Model: GS1600AIS		1
			Channel:160 CH		
		Bucket Elevator	Type: Centrifugal 5x4		1
			Height: 10.5 m		
		Bucket Elevator	Type: Centrifugal 5x4		1
			Height: 10.5 m		
		Color Sorter # 2	Model:GS5880AIS		1
			Channel:96 CH		
		Bucket Elevator	Type: Centrifugal 5x4		1
			Height: 10.5 m		
		Vibriting Screen			1
		Product Tank	W 1.5 m x L 1.5 m x H 2.5 m	4.3 ton	
		Weigher & Packer	Model: DCS-50	1~50 KG	1
			Type: Single Packing		
		<u>DUST COLLECTING FACILITIES</u>			
		Dust Collecting Fan # 1	Air Vol: 65 m3		1
		Dust Collecting Fan # 2	Air Vol: 65 m3		1
		Cyclone #1	pi 950 mm		1
		Cyclone #2	pi 950 mm		1
		Dust Collecting Fan (Polisher #1)			1
		Dust Collecting Fan (Polisher #2)			1
		Cyclone (Pol) #1	pi 950 mm		1
		Cyclone (Pol) #2	pi 950 mm		1
		<u>Structure & Electric Wiring & Installation</u>			
		Control Panel & Cables			1
		Steel Structure & Chute & Tank			1

Sr No.	Item	PARTICULAR & MODEL			QTY
		Other Facilities			
		Screw Type Compressor	Receive Tank		1
			Air Dryer		
			Cooling system		
		Room for Color Sorter			1
		New TAIHO BRAND COLORSORTER 1 SET	Model: 6XSM504S+ZERV SERIES + 4.7 KW 220V		1
		UPS(Santak)	6KVA UPS(Santak) for SLB Factory (For Colour Sorter#3) + Commercial Tax 5% (228,571.5/-)		1
II	Machinery				
	Mill-1	Input Hopper			
		Bucket Elevator	Type: Induction 7 X 5	10 ton/hr	1
			Height: 7.5 m		
		Sub Tank			
		Vibration Separator # 1			1
		Vibration Separator # 2			1
		Bucket Elevator	Type: Induction 7 X 5	10 ton/hr	1
			Height: 11.5 m		
		Temporary Storage Tank	W 5.5 mx L2.3 x H5.0 m		
		Belt Conveyor	L 6.5 m		1
		Bucket Elevator	Model: W 10	10 ton/hr	1
			Type: Induction 7 x 5		
			Height:		
		Sub Tank			
		Destoner #1	Model: MTSC-65/120		1
		Destoner #2	Model: MTSC-65/120		1
		Bucket Elevator	Model: W 10		1
			Type: Induction 7 x 5		
			Height: 11.5 m		
		Sub Tank			
		Whitener # 1	Model: VTA5AA-TA	4-5 ton/hr (Parboiled)	1
			Air Vol: 30 m3/min		
			Pressure:-80 to-100mmAq		
		Whitener # 2	Model: VTA5AA-TA	4-5 ton/hr (Parboiled)	1
			Air Vol: 30 m3/min		
			Pressure:-80 to-100mmAq		
		Bucket Elevator	Model: W 10	10 ton/hr	1

Sr No.	Item	PARTICULAR & MODEL			QTY
			Type: Induction 7 x 5		
			Height: 11.5 m		
		Sub Tank			
		Whitener # 3	Model:TOPWHITE BSPB	3.5-8 ton/hr	1
		Whitener # 4	Model:TOPWHITE BSPB	3.5-8 ton/hr	1
		Bucket Elevator	Model:W 10	10 ton/hr	1
			Type : Induction 7 x 5		
			Height: 11.5 m		
		Sub Tank			
		Rotary Sifter # 1		5 ton/hr	1
		Screw Conveyor			1
		Screw Conveyor # 2			1
		Bucket Elevator	Model: W10 :	10 ton/hr	1
			Type : Induction 7 x 5		
			Height:		
		Sub Tank			
		Polisher # 1	Model:HIGHPOLY DRPF		1
		Bucket Elevator	Model: W 10	10 ton/hr	1
			Type : Induction 7 x 5		
			Height:		
		Sub Tank			
		Polisher # 2	Model:HIGHPOLY DRPF		1
		Bucket Elevator	Model: W 10	10 ton/hr	1
			Type : Induction 7 x 5		
			Height:		
		Sub Tank			
		Polisher #3	Model:HIGHPOLY DRPF		1
		Bucket Elevator	Model: W 10	10 ton/hr	1
			Type : Induction 7 x 5		
			Height:		
		Sub Tank			
		Rotary Sifter # 2			1
		Bucket Elevator	Model:W 10	10 ton/hr	1
			Type : Induction 7 x 5		
			Height:		
		Bucket Elevator	Model: W 10	10 ton/hr	1
			Type : Induction 7 x 5		
			Height:		
		Sub Tank			
		Length Grader # 1	1 Stage 2 Row		2
		Bucket Elevator	Model: W 10	10 ton/hr	1

Sr No.	Item	PARTICULAR & MODEL			QTY
			Type : Induction 7 x 5		
			Height:		
		Color Sorter # 1	Model : R 7 L		1
			Channel: 420 CH		
		Bucket Elevator	Model: W 6	10 ton/hr	1
			Type: Induction 5 x 4		
			Height:		
		Bucket Elevator	Model: W 10	10 ton/hr	1
			Type: Induction 5 x 4		
			Height:		
		Color Sorter # 2	Model : RB 8		1
			Channel: 320 CH		
		Bucket Elevator	Model: W 6	10 ton/hr	1
			Type: Induction 5 x 4		
			Height:		
		Bucket Elevator	Model: W 10	10 ton/hr	1
			Type: Induction 5 x 4		
			Height:		
		Length Grader # 2	2 Stage 2 Row		4
		Length Grader # 3	1 Stage 2 Row		2
		Bucket Elevator	Model: W 10	10 ton/hr	1
			Type : Induction 7 x 5		
			Height:		
		Product Tank			
		Electrical Blance			
		Hand Sewing Tool			1
-					
		Dust Collecting Fan # 1			1
		Dust Collecting Fan # 2			
		Cyclone	pi. 1200 mm		1
		Cyclone	pi. 1200 mm		1
		Dust Collecting Fan # 3			1
		Cyclone	pi. 1100 mm		1
		Dust Collecting Fan # 4			1
		Cyclone	pi. 1000 mm		1
		Dust Collecting Duct	pi. 550 mm		1
-					
		Control Panel & Cables	For entire facility		1
		Steel Structure & Chute & Tank	For entire facility		1
		Installation Cost	200 M/D , 1 M/D = \$ 30		1

Sr No.	Item	PARTICULAR & MODEL			QTY
		Power Stabilizer			
		Compressor #1	Piston Type		1
		Compressor # 2	Screw Type		1
		Circulation Dryer			1
		Electrical Blance			
		Room for Color Sorter			1
		Brand Net with Motor			1
		Conveyar 9.8m			2
		Screw Conveyor			3
		Digital Weight Scale			5
		Digital Weight Scale			1
-					
		Forklift 2 units	(USD 20,500 x 2 units)		2
		Custom clearence (Forklift 2 units)			
	Machinery Mill (1) Total				
III	Generator				
		Power Generator		500 kW	1
		Power Generator		250 kW	1
	Generator Total				
IV		Power Transformer		1000 kW	1
V		Truck Scale	3.5 m x 19 m		1

4.8 Generation of Waste and Management

4.8.1 Standard Procedure of Waste Management

Scope: The objective of this Standard Operating procedure is for applying to all waste disposal activities of Rice Mill of GLPI.

Purpose: The purpose of this procedure is to understand all employees and ensure proper handling and disposal of waste from maintenance activities.

This procedure covers for collecting, storing and disposing domestic solid waste, food waste and waste oil.

Responsibility: Management team is responsible for working with employees to keep these procedures up to date and to revise as needed. Managers are responsible for their employees including engineers and workers ensure compliance with this procedure. Managers have to train their employees in the proper disposal of waste materials to prevent spills of potential

pollutants into environment. Managers are responsible for ensuring training is conducted with the most recent version of Standard Operation Procedure.

Health, Safety and Environment Engineer is responsible for develop, implement and maintain the waste management procedure in compliance, to maintain waste disposal document record.

Personnel performing the job responsibility must follow the procedure correctly and ensure the type of waste and need to dispose at the designated location and also responsible if any leakage, missing cover of waste.

Waste is collected and separated according to its classification and collected in dedicated containers if this deemed necessary.

Waste Handling: Handling of waste is to be carried out to minimize risk to human health and to the environment.

Waste Disposal Procedure:

Domestic waste (food waste & etc.)

- Give instruction to cleaning worker how to be handling domestic waste like as) food waste to avoid health hazard.
- Pack properly with garbage bag avoid opening by cats and dogs.
- Food waste bag to be kept in container that showing label on it.
- Collect food waste bag by truck and dispose at YCDC (Yangon City Development Committee) garbage bin allocated outside of the plant area.

Chemical waste

- There is no Chemical Waste because of the Aluminum Phosphide 56% insecticide is used as fumigation of Phosphine gas at enclosed area (Warehouse).

Wastewater

- There is no wastewater from mill and warehouse.
- There is only domestic (office and kitchen) discharged water.

Waste Oil

- Educate to staffs safe handling waste oil as per safe data sheet (SDS).
- Waste oil to be store in steel drum and capped properly.
- Use proper PPE to store waste oil into drums and always be are full not to contact with eyes.
- Store at designated area and put label on drum showing type of waste oil before selling out to waste oil buyer.
- Apply necessary approval from management before selling out.
- After got approval, contact to waste oil buyer for selling.

Record

All disposal for industrial waste through YCDC shall be recorded properly to check the proper handling of waste and shall be maintained for five (5) years to prove full compliance this procedure strictly.

Estimated Volume of Solid Waste

- (1) Damaged rice bag: Store in Temporary storage area of mill and sell to local merchant weekly. It is mostly a few bags.
- (2) Small broken rice, Bran layer and germ by Cleaning of Brown Rice: Store in Temporary storage area of mill and sell to local merchant weekly. It is mostly 80-100 Bags per week.
- (3) Kitchen and office Waste : Temporary store in different waste bins for Biological waste, Plastic Bottles, Paper waste and discharge allocated outside of the factory through YCDC daily. It is mostly 6 plastic garbage bag per day.
- (4) Wastewater from septic tank is discharged by YCDC when it is nearly full.
- (5) Waste oil from the rice processing machine, general and automobiles: Store in Fuel storage house temporarily and sell to local marchants monthly. It is about 1 drum.

The drainage system's Layout plan of the Factory is demonstrated in following figure. All run off water, rain water and domestic wastewater flows into drains and there are 3 discharge points to the main drainage of Munucipal.



Figure 4-10 Drainage System of Rice Mill

4.9 Workforce

The initial expansion phase will begin with 20 crew and will gradually increase to 29 personnel over the course of the construction. The construction is expected to last 6 months. Total workforce for the operation will consist of 40 personnel.

During the operation, the following are the staff required in each category:

Table 4-9 Staff During Operations Phase

Sr. No	Category	Number
1	Engineers	5
2	Operators	5
3	Workers (includes production, administration, and manual Labor)	30
Total		40

4.9.1 Working Hours

Personnel working for the rice mill operations shall be divided depending on the shift schedule and work requirements.

During the operational phase of the project the following general working shifts are mentioned in the table below.

Table 4-10 Personnel and Work Schedule

Number of Personnel	Work Schedule	Production Capacity
Office Staff/ Personnel	8am – 5pm for 6 working days (Monday to Saturday)	NA
Production Personnel (engineers, technicians, maintenance and operators) Workers	1st shift: 8 am to 5 pm 6 working days (Monday to Saturday)	100 tons
	2nd shift: 8 am to 5 am 6 working days (Monday to Saturday)	60 tons

4.10 Project Schedule

The schedule of the activities is mentioned for the entire project. The schedule of activities with respect to carrying out the studies shall be tentative, as shown below:

Table 4-11 Tentative Project Execution Schedule

No.	Project Stages	2015	2016	
		Q4	Q1	Q2
1	Engineering Design			

No.	Project Stages	2015	2016	
		Q4	Q1	Q2
	Conceptual Design			
	Final Design			
2	Field / Site Investigation			
3	NOCs Permits Acquisition			
4	Site clearance			
5	Procurement and Approval			
	Subcontractor Services			
	Equipment Procurement			
6	Construction			
	Civil works			
	Installation of Main Equipment /Machineries / tanks			
	Utilities			
7	Testing and Commissioning			

Expansion/Construction Phase

The proposed duration of the construction of all structures is expected to be six (6) months, in total, from the Engineering Design until Testing and Commissioning, proponent targets to finish the proposed rice mill project by the second quarter of 2016.

5. DESCRIPTION OF THE PROJECT ENVIRONMENT

This section describes the environmental conditions of the proposed site and surrounding before the commencement of the project activities. This section address the physical, biological and social aspects of the surrounding environment.

5.1 Physical Environment

The physical environment consists of existing land pattern of the project site, geology and geomorphology, soils, groundwater, surface water, meteorology and climate. The existing condition of each of these components of the physical environment is discussed based on the information obtained from secondary sources.

5.1.1 Topography and Existing Land Pattern

Overwhelming flat terrain approximately 4.3 m above mean sea level constitutes the project landscape. The project land plot is situated inside a moderately populated industrial zone in Shwe Lin Ban.

The land acquisition was carried out under the concession of Shwe Lin Ban Industrial Estate's administration committee in 2000. The land is rightfully owned by Golden Lace Company Ltd. The land has been in use for rice mill by the Golden Lace Company Ltd.

5.1.2 Climate and Precipitation

The climate project area follows a monsoon pattern. Myanmar has three seasons: hot and wet, warm, and very hot. During the hot, wet season, from mid-May to October, rain usually falls every day and sometimes all day.

The project area has a warm and humid climate with average temperature of (25°C) and the annual rainfall is 2276 mm (89.6 inch).

5.1.3 Geology

The site is underlain by fairly recent formations and quaternary alluvial deposits composed primarily of clay, silt, and fine-grained sand. The bedrock for the site and all of Yangon in general would be a combination of different sedimentary rocks such as siltstones, volcanic tuff deposits, and limestone.

The entire area is overlaid by a thick layer of recent alluvium brought down by Hlaing River. Three main types of soil, meadow gleyey clay soils, meadow swampy soils and saline clayey soils are found. Alluvial deposits are composed of gravel, clay, silts, sand and laterite, which lies upon the eroded surface of Ayeyarwady formation at 3-4.6m above sea level. The central part of the Yangon area is occupied by the anticlinal ridges as a backbone, 20 m above mean sea level and covered with sands, sand rock, soft sandstones, shale, clays and laterite of Ayeyarwady formation. Hard compact sandstone and shale of Pegu series can be found at the northwest corner of Hlawga Lake with NNW-WWE strike dipping to the east. Alluvial deposits are found in the surrounding areas of ridge, whereas lateritic soil can be found along the ridge

5.1.4 Hydrology and Hydrodynamic Regime

The Shallow groundwater flow is expected towards the west / south-west based on the topographic gradient. Local information indicates that the discharge in Hlaing River is found to be lowest in February and March. With the onset of monsoon, steep rise of discharge levels is found in May and June. The river, maximum flow is seen in either July or August.

Un-engineered natural water courses are generally seen and no extensive system of dredged canals. The tide in the Hlaing River are dismal.

In accordance with the information from the Ministry of Agriculture and Irrigation, thickness of groundwater aquifer in the region ranges from 10 to 20 meters with the average yield between 700 to 2,400 gallons per hour. Groundwater quality is anticipated to be fair to good. Groundwater has been used as common water source for industrial zones. Saltwater intrusion causes some production issues in some parts of the region.

5.1.5 Seismicity

Based on the seismicity and the records of the previous considerably high magnitude earthquakes, this region can be assumed as a low to medium seismicity region. Some of the large earthquakes that caused considerable damages to some buildings and some casualties in and around Yangon Region can be recognized in the past records, e.g., the magnitude 7.3, earthquake that struck on May 5, 1930 and December 3, 1930 earthquake with the same magnitude. The former earthquake, the well-known Bago earthquake, caused 50 deaths and great damages in Yangon while 500 casualties resulted in Bago. The other significant earthquakes are Yangon earthquakes of September 10, 1927, and December 17, 1927. These events also resulted in a certain amount of damage in Yangon.

Yangon Region is tectonically bounded by the Indian-Burma plate's subduction in the west, Sagaing fault in the east, West Bago Yoma fault in the north, Kyaykkyan fault in the north-east, and the Andaman rift zone in the south. The earthquakes observed in the Andaman Sea region are shallow focus earthquakes that show not only the normal fault mechanisms but also the strike-slip fault mechanisms.

In and around Yangon Region, most of the earthquakes are shallow focus earthquakes, especially within about 250 km in radius. Most are related with Sagaing fault, some corresponds to the blind faults located under Yangon Region and subduction zone of Indian and Burma Plate (Part of Eurasian Plate), and the Andaman Rift Zone. Moreover, some other faults whose geometry and other parameters are not well-known in and around this region also generated some earthquakes. Small numbers of intermediate and deep focus earthquakes can be seen in this region and those are caused by the subduction zone of Indian-Burma Plates.

Most of the earthquakes, which occurred in the central region of Myanmar, are related with Sagaing fault, and in the eastern part, the focal depth is not greater than 40 km while the earthquakes in the western portion include from shallow, through intermediate to deep focus

earthquakes. The shallow focus earthquakes along the western margin belong to the subduction zone earthquakes and the focal depth of the earthquakes, which are generated from the subduction zone, gradually increase to the eastward. In the eastern margin of the Western Ranges or Indorama Rangers, the shallow focus events indicate their correspondence with the crustal faults (source: Probabilistic Seismic Hazard Assessment for Yangon Region, Myanmar, Myo Thant, December 2012)

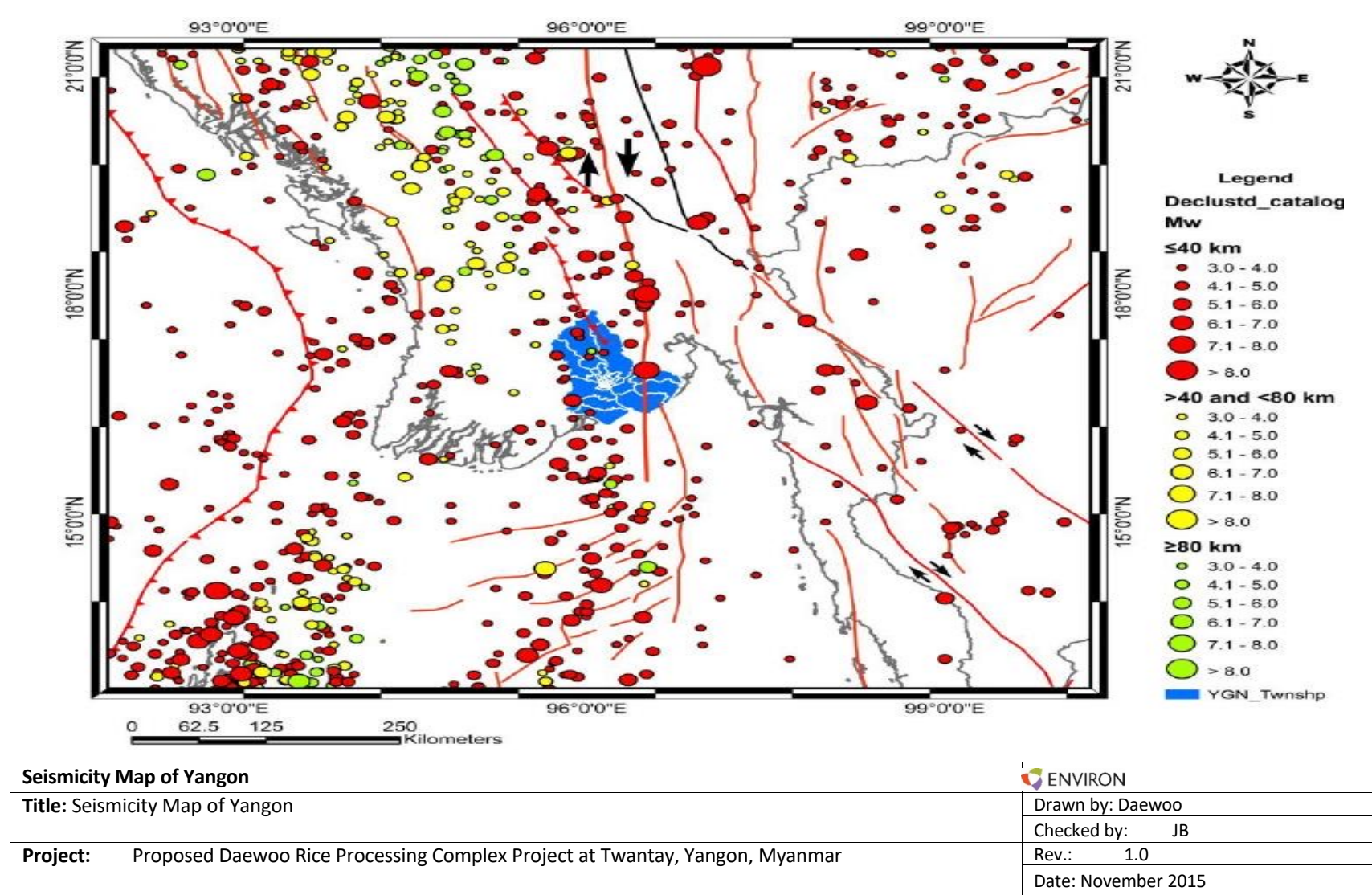


Figure 5-1 Seismicity Map of Yangon

5.1.6 Environmental Baseline

To determine of the state of the environmental baseline of Air and water quality and noise level were measured for Shwe Lin Ban are of rice mill, ENVIRON conducted the baseline monitoring in May 2015 in line with the IFC-EHS Guidelines.

To update the baseline condition of current situation of project to monitoring, EnvCC conducted the baseline study again in May 2025 after 10 year period.

Error! Reference source not found. shows the GPS Coordinates of the sampling site.

Table 5-1 GPS Coordinates Points of Environmental Sampling Points

Site	Latitude	Longitude
Air Quality and Noise Level (AN)- (2015/ 2025)	16°54'27.47"N	96° 4'13.60"E
Ground Water Quality (GW-1)(2015/ 2025)	16°54'29.01"N	96° 4'14.36"E
Ground Water Quality (GW-2) (2015/2025)	16°54'29.83"N	96° 4'14.08"E
Effluent level of discharge point (WW-1) (2025)	16°54'28.06"N	96° 4'10.55"E
Soil quality (S-1) (2015/2025)	16°54'26.78"N	96° 4'10.69"E

Figure 5-2 illustrates the locations for the sampling sites of Rice Mill Project in Shwe Lin Ban Industrial Estate.

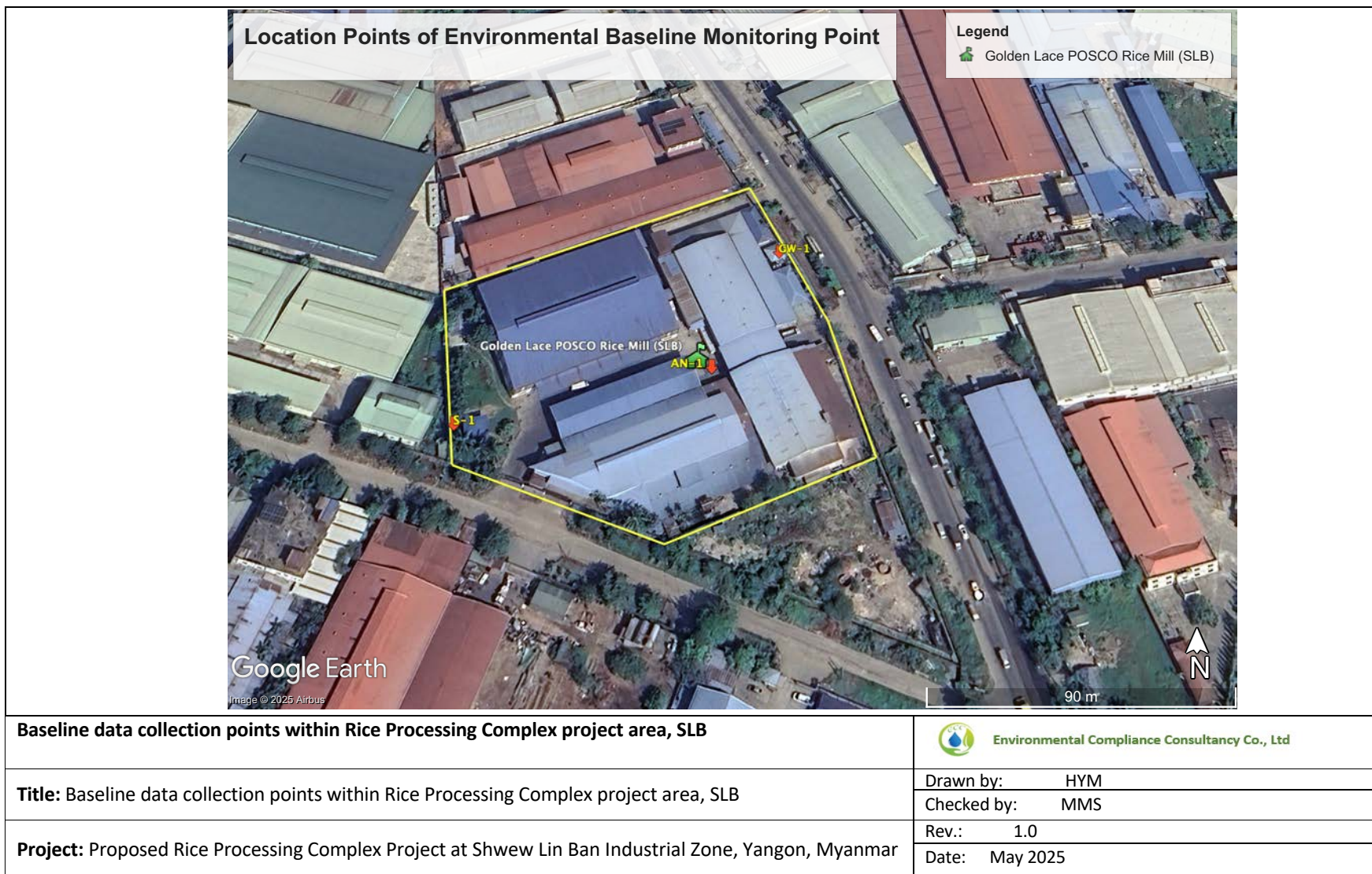


Figure 5-2 Baseline data collection points within Rice Processing Complex project area, SLB

5.1.7 Baseline Ambient Air Quality Assessment

In the absence of reliable baseline ambient air quality records for Shwe Lin Ban region, the baseline air quality monitoring were conducted in May 2015 and 2025.

5.1.7.1 Methodologies

Baseline air quality monitoring was conducted at an adjacent location of the project site. The air quality sampling averaging times followed National Environmental Quality (Emission) Guideline (2015) requirements and measured the levels of PM₁₀, PM_{2.5}, NO₂ and SO₂. The sampling time for each pollutant were set at:

- 24 hours for PM₁₀, PM_{2.5},
- 24 hour for NO₂ and
- 24 hours for SO₂.

Ozone, which is also specified in WHO Standards, is excluded in the monitoring as it is a secondary pollutant and not directly the result of emission from the project. Ozone is the product of many natural chemical and photochemical reactions in combination with nitrogen oxides and volatile organic compounds from all emission sources in the atmosphere.

In 2015, an E sampler, manufactured by MetOne, was used to sample PM₁₀ and PM_{2.5}. The E-Sampler is a nephelometer hence implementing a light scatter sensor. An Aeroqual S500 was used to monitor NO_x and SO₂, Aeroqual S500 is a portable gas sensor mounting gas sensitive semiconductors (GSS) heads.

In 2025, Ambient air quality of the site was analysed by Haz-Scanner. The 24 hour continuous sampling was carried out.

Simple active sampling method, using air sampling pump to pull air through a filter, was employed in the air quality monitoring. Unlike passive sampling, simple active sampling is independent of wind speed and it enables verification for quality and reliability of the results. In this application, the results were organized in a data base and then, statistical analysis were performed.

The noise monitoring campaign was conducted at representative noise sensitive receiver near the project area in 2015 and 2025, and within the Project Area in 2025. The monitoring point was located approximately at the same location of the air receptor.

An Extech sound level meter was employed for 24 consecutive hours at the monitoring location. The location was randomly selected to be representative to noise sensitive receivers in and around the project site. The degree of effects from the noise level and duration of noise exposure were analysed using the empirical data obtained from the monitoring.

5.1.7.2 Quality Control

In order to ensure the integrity of the assessment results, quality control measures were introduced. It is employed instruments with valid factory calibration certificates. Regular maintenance and random leak check procedures were conducted throughout the operation of each equipment. All activities related to the assessment operations and interruptions if any were recorded and the sampling points were marked with GPS.

To compute hourly and daily averages from the ambient air quality results, the lower detection limit values (LDL) reported in Table 5-2 were used for data analysis. Values under the detection limit have been substituted by 50% of LDL.

Table 5-2 Lower Detection Limit Values

Species	Lower Detection limit
PM 10	0.001 mg/m ³
PM 2.5	0.001 mg/m ³
SO ₂	0.01 ppm
NO ₂	0.01 ppm

5.1.7.3 Sampling Area

The project site is situated in Shwe Lin Ban Industrial Estate, Hlaing Thar Yar Township of Yangon Region. It is at the corner of Yaw Atwin Wun U Phoe Hlaing Road and Kyan Sit Thar Road. The site is approximately 3.28 Km north off Yangon - Patheingyi Road. In the project area, the major sources of pollutants in that region are mainly from human activities including agriculture and road traffic.

5.1.7.4 Sampling Plan

Ambient air quality of the site was analysed by E sampler and Aeroqual S500 in 2015. E-sampler was used for PM_{2.5} and PM₁₀ alternatively. Ambient air quality of the site was analysed by Haz-Scanner in 2025. The 24 hour continuous sampling was being done continuously. Table 5-3 shows the sampling schedule. Calibration Certificates of E sampler and Aeroqual S500 are shown in **Appendix F**.



Figure 5-3 Baseline Ambient Air Data Collection within the Project Area (2025)

Table 5-3 Air Quality Sampling Baseline During Summer Season

Sampling Parameter	Sampling Periods
2015	
PM10	16 May 2015 to 17 May 2015 (Operation Day) 17 May 2015 to 18 May 2015 (Off - Day)
PM2.5	18 May 2015 to 19 May, 2015
NO2	16 May 2015 to 17 May 2015 (Operation Day) 17 May 2015 to 18 May 2015 (Off - Day)
SO2	18 May 2015 to 19 May, 2015
2025	
PM10	4 May 2025 to 5 May 2025
PM2.5	
NO2	
SO2	

5.1.7.5 Meteorological Data

The meteorological data for the sampling periods in 2015 including air temperature, relative humidity, sea level atmospheric pressure, visibility, wind speed and rainfall were obtained from the website <http://www.wunderground.com>.

The meteorological data for 2025 is provided by the Kabaraye Meteorological Department (Yangon Station).

A summary of the meteorological data is shown in Table 5-4.

Table 5-4 Weather Conditions During the Air Quality Sampling Periods

Monitoring Period	Temp. (°F)	Relative Humidity (%)	Sea Level Pressure (in)	Visibility (mi)	Wind Speed (mph)	Rainfall (in)
2015						
May 15	90	70	30	4	6	
May 16	88	78	30	4	6	Thunderstorm
May 17	85	78	30	4	5	Rain, Thunderstorm
May 18	86	81	30	4	4	Rain, Thunderstorm
May 19	83	94	30	4	5	Rain
2025						
4 May	92	70	30	4	5	Sunshine
5 May	95	65	30	4	5	Sunshine

Source: <http://www.wunderground.com> and Metrological Department

5.1.7.6 Baseline Air Quality finding

May, 2015: The baseline data monitored within the project area were analyzed and compared with WHO guideline standards before the publication of NEQE Guideline. In this baseline ambient air monitoring, the daily average concentrations of PM₁₀ and PM_{2.5} 22 µg/m³ and 19 µg/m³ respectively were lower than the 24 hours WHO guideline values (50 µg/m³ and 25 µg/m³) during operation day. The results were found to be lower for the off-day measurements as well.

On the other hand, SO₂ concentration 237 µg/m³ was higher than WHO guideline (20 µg/m³). A number of fuel combustion of Engine of Vehicles was observed in the area, apparently to generate smoke with intent to protect from mosquitoes and that may also contribute to the high concentration of SO₂.

This is because sulfur dioxide is produced during fuel combustion around and inside of the factories in the Shwe Lin Ban Industrial Zone. So it is possible that it is emitted from fuel combustion by vehicles.

Table 5-5 shows the comparison of air pollutant with WHO standard.

Table 5-5 Comparison of Air Pollutant with WHO Standard (2015)

Site: Shwe Lin Ban	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)
	24 hour Average	24 hour Average	24 hour Average	1 hour Maximum
Operation Day	22	19	237	136
Off – Day	13			117
WHO Ambient Standard				
Interim1	150	75	125	-
Interim2	100	50	50	-
Interim3	75	37.5	-	-
Guideline	50	25	20	200

May 2025:

Due to the new measure within the project area, SO₂ concentration 40 µg/m³ was higher than NEQE guideline (20 µg/m³). A number of fuel combustion of Engine from Vehicles was observed in the area, apparently to generate smoke with intent to protect from mosquitoes and that may also contribute to the high concentration of SO₂.

Table 5-6 Comparison of Air Pollutant with NEQE Guideline Ambient Standard (2025)

Site	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)
	24 hour Average	24 hour Average	24 hour Average	1 hour Maximum
Results				
2025	15	15	40	110
NEQE Guideline Ambient Standard				
Guideline	50	25	20	200

Air Quality Result is presented in **Appendix G**.

5.1.8 Baseline Noise Level Assessment

Baseline noise level assessment was conducted simultaneously with the air quality survey. Noise level assessment locations and schedules were similar to the air quality survey as well.

5.1.8.1 Noise Sampling Area

The noise monitoring campaign was conducted at representative noise sensitive receiver within the project area in 2015 and 2025. The monitoring point was located approximately at the same location of the air receptor.



Figure 5-4 Noise Sampling Area (2025)

5.1.8.2 Noise Sampling Plan

The noise level monitoring schedule in the year 2015 and 2025 is shown in following table. **Appendix H** show the calibration certificates of Extech noise measurement device measured in 2015.

Table 5-7 Ambient Noise Level Sampling Schedule

Parameter	Shwe Lin Ban
Day Time (7:00 -22:00)	17 May 2015 and 4 May 2025
Night Time (22:00- 7:00)	18 May 2015 and 5 May 2025

5.1.8.3 Baseline Noise Quality level Finding

Two periods of twelve hours continuous monitoring noise level were investigated for comparison with the IFC (which is same as NEQE guideline) limits for day and night. All ambient noise levels inside project area for day levels are found to be under the noise level guidelines for industrial and commercial (70dBa). The noise level at night is bit exceed (about 6 dBa) than the guideline.

Table 5-8 Comparison of Noise Level to NQEG Guideline

Duration	Result (dBA)	NQEG Guideline	
		Residential/ Educational	Institutional/ Commercial
(2015)			
Day (7:00-22:00)	57	55	70
Night (10pm-7am)	55	45	70
(2025)			
Day (7:00-22:00)	53.92	55	70
Night (10pm-7am)	51.61	45	70

5.1.9 Baseline Water Quality

September 2015: To determine the state of water quality for groundwater, water sample monitoring was executed at the groundwater tube-wells in Shwe Lin Pan rice mill. The location has been transformed into a built environment several years ago and the place has been mostly occupied by buildings. Within the limitation of available water sources, two samples were collected from different tube-wells.

Fundamental field analysis using portable equipment including HACH-DR850 colorimeter and Sper Scientific DO meter was conducted. In addition, visual survey of nearby potential water pollution sources was included in the study.

May 2025: Water quality examination of grownwater and effluent was conducted in 4 May 2025 and then analysed in a reliable laboratory. As the project site has already been transformed into a built environment and the exercise was treated as baseline survey in the absence of background scientific data.

The results were compared against WHO Guidelines for Drinking Water Quality Standard – Fourth Edition (2011) and NEQE Guideline (2015).



Figure 5-5 Ground water sampling (Tubewell 1) in May 2025



Figure 5-6 Ground water sampling (Tubewell 2) in May 2025



Figure 5-7 Effluent quality sampling in May 2025

5.1.9.1 Methodology

Cross-sectional visual survey and random sample collection methods were undertaken.

The monitoring scheme was governed by:

- Drainage pattern;
- Location of major water bodies and
- Likely areas, which can represent baseline water quality conditions.

The samples collection and analysis were executed in accordance with the procedures specified in 'Standard Methods for the Examination of Water and Wastewater' published by American Public Health Association (2005).

Before each sample was collected, sample collection bottles were rinsed three times with respective samples. For the initial environmental examination purpose, array of fundamental parameters was examined. These parameters will show the state of baseline water quality. These parameters are presented in comparison to WHO's Guidelines on Drinking Water Quality (WHO, 2011) and NEQE Guideline (2015).

Table 5-9 Water Quality Parameters and Analysis Methods

Parameter	Unit	Analytical Meter or Methods
Dissolved Oxygen (D.O)	mg/L	Sper Scientific DO Meter 850041
pH	Numeric	pH and Temperature Meter
Temperature	*C	pH and Temperature Meter
Turbidity	NTU	Absorptiometry method

Parameter	Unit	Analytical Meter or Methods
Total Suspended Solids (TSS)	mg/L	Photometric method
Total Dissolved Solids (TDS)	mg/L	HM AP 2 Aqua pro TDS meter
Electro-Conductivity (EC)	µS	HM COM-100 EC meter
Salinity	mg/L	Sper Scientific Salinity Pen
Total Coliforms	per 100 mL	Coli scan Easy Gel method
E. coli	per 100 mL	Coli scan Easy Gel method

5.1.9.2 Baseline Water Quality Findings

Water samples were collected and analyzed from two tube-wells out of three tube-wells in the project boundary. No apparent water body was observed in and outside of the boundary.

2015:

Dissolved oxygen is a fundamentally important indicator of health for a water body. It supports aquatic life. Depletion in dissolved oxygen concentration basically indicates contamination and leads to destruction of aquatic and riparian ecosystems. All results were nearly 5 mg/L and therefore, they did not cause concerns.

PH level in water quality describes the state of acidity, neutrality, or alkalinity in water. Almost all results fell in WHO Guidelines range between 6.5 and 8.5. All pH results from surface water and groundwater samples fall between WHO's Drinking Water Quality Guideline's values. The turbidity levels from both samples were below the guideline values of 5 NTU. The groundwater aquifer could be found between 20 to 30 meters in the project boundary. Based on the preliminary findings, the groundwater quality seemed to be in fair condition. No potential source in the immediate vicinity of the project boundary was noticed.

2025:

Ground Water's result: The quality ground water from the two tub-wells was only found that still in the standard quality. The results of the water quality monitoring (2025) are presented in ***Appendix I and J.***

Effluent Result:

There was found no harm wastewater at the discharge point and all parameters are within the Guideline . The Effluent results from the laboratory analysis are presented in the following Table and ***Appendix K.***

Table 5-10 Laboratory Water Analysis Results

Sr. No	Parameters	Unit	2015		2025		Drinking Water Quality	2025	Effluent Quality
			Tubeware near the entrance (W-1)	Tubeware in the rear (W-2)	Tubeware near the entrance (W-2)	Tubeware in the rear (W-1)	WHO Guideline	Effluent W-3	NEQE Guideline
1	Alkalinity (Alk)	mg/l			198.0	200	200	200	200
2	Magnesium (Mg ++)	mg/l			10.3	10.5	30	10.0	30
3	Sodium (Na+)	mg/l			100.0	100.0	200	95.0	200
4	Potassium (K+)	mg/l			ND	ND	-	ND	-
5	Total Hardness (TH)	mg/l			150	150	500	155	500
6	Sulfate (SO4-)	mg/l			0.3	0.3	400	1.2	400
7	Chloride (Cl-)	mg/l			20	20	600	20	600
8	Iron (Fe)	mg/l			0.18	0.18	0.5 – 1.5	0.15	0.5 – 1.5
9	Dissolve Oxygen (DO)	mg/l	6.1	4.18	2.5	2.3	-	2.5	-
10	Chemical Oxygen Demand (COD)	mg/l			ND	ND	125	ND	125
11	Biochemical Oxygen Demand (BOD)	mg/l			1.2	1.2	-	1.2	-
12	pH		7.25	7.63	6.19	6.19	6.5 – 8.5	6.20.	6.5 – 8.5

Sr. No	Parameters	Unit	2015		2025		Drinking Water Quality	2025	Effluent Quality
			Tubeware near the entrance (W-1)	Tubeware in the rear (W-2)	Tubeware near the entrance (W-2)	Tubeware in the rear (W-1)	WHO Guideline	Effluent W-3	NEQE Guideline
13	Ammonia-Nitrogen (NH ₃ -N)	mg/l			0.5	0.5	10	0.5	10
14	Turbidity	NTU	0	0	3	3	20	3	20
15	Salinity	%			0.00	0.00	Nil	0.00	Nil
16	Arsenic (As)	mg/l			0.000	0.000	0.05	0.000	0.05
17	Lead (Pb)	ppb			ND	ND	0.05	ND	0.05
18	Total Coliform (E.Coli) Number of Colonies per 100ml	MPN (per 100ml)	-	-	ND	ND	0	ND	0
19	Temperature	°C	29.5	28.5	-	-	-	0.5	
20	Total Suspended Solids	mg/l	0	0	-	-	-	3	
21	Total Dissolved Solids	mg/l	478	339	-	-	-	0.00	
22	Electro-Conductivity	μS	>1999	>1999	-	-	-	0.000	

5.1.10 Baseline Soil Status

A soil sample was acquired from the project site to determine the basic description of the soil in 2015 and 2025 at the same area.



Figure 5-8 Sampling for soil test (May 2025)

5.1.10.1 Baseline Soil Quality Findings

2015: Results from the soil testing showed the following soil characteristics. Soil color was observed to be varying between black to brown. The texture is observed to be predominantly clayey, which is a typical feature of 'Delta plains'. The pH indicates that the soil in the study area is neutral, with the pH value at 6.43. The Electrical Conductivity was observed to be 0.10 ms/cm. The testing of the soil samples was carried out by the department of irrigation(DOI). The DOI's standard soil classification is used as a guideline for assessing soil status.

2025: The laboratory (Landuse Department) result of Soil Quality (2025) is shown in **Appendix L** and the DOI's standard soil classification is used as a guideline for assessing soil status.

Table 5-11 Standard of soil classification

Sr. No	Soil Test	2015	2025	Classification
1.	pH	6.43		<4.5 Extremely acidic 4.51- 5.00 Very strongly acidic 5.01-5.50 Slightly acidic 5.51-6.00 moderately acidic 6.01-6.50 slightly acidic 6.51-7.30 Neutral 7.31-7.80 slightly alkaline 7.81-8.50 moderately alkaline 8.51-9.0 strongly alkaline > 9.01 very strongly alkaline
2.	Salinity Electrical Conductivity ($\mu\text{mho/cm}$) 1 deci-Siemen/meter (dS/m) = 1 mmhos/cm (640 $\mu\text{mho/cm}$ = 1 ppm)	0.10		Upto 1.00 Average 1.01-2.00 harmful to germination 2.01-3.00 harmful to crops (sensitive to salts)
3.	Moisture (%)copper (ppm)	-		
4.	Total Nitrogen (%)	-		
5.	Zn (ppm)	-		
6.	Iron (ppm)	-		
7.	Lead (ppm)	-		
8.	Cadmium (ppm)	-		
9.	Chromium (ppm)	-		
10.	Mercury (ppm)	-		

Note: ND – Not Detected

5.2 Natural Environment

The project site as stated is located in an area which has been subjected to human intervention for decades. Consequently, there are no areas that could be considered as ecologically or biologically sensitive.

The objectives of the survey are:

- To identify vertebrate (mammals, birds, reptiles, fishes and amphibians) and invertebrate (butterflies, dragonflies and damselflies) in survey area.
- To identify species of flora and forest types on vicinity of the proposed project sites.
- To provide information on the nature and extent of potential environmental impacts arising from the construction and operation of the proposed project.

- To set up environmental monitoring plans and mitigation measure for project area concern with biodiversity conservation and sustainable use of ecosystem services.

5.2.1 Methodology and Approaches

The methodologies used in biodiversity surveys are described below.

a) Desktop Study

Publicly available sources of information were analyzed to build an outline of known and likely ecological values for the Study Area. Aerial imagery was used to build a more complete spatial understanding of the pattern of vegetation communities and human uses on the site and to map access routes and internal tracks. In addition, ecologists with experience in the Study Area were consulted where possible to obtain information about species known to be present or previously recorded from the site, and other ecological values considered by them to be relevant.

b) Interview and Literature survey

The secondary data was also surveyed by interviewing local residents at Public Consultation and literature reviewing. In the interview survey to identify the names of plants and animals existing in and around the area. Also, the past situation of flora and fauna, and the change in biodiversity and ecosystem in the area were interviewed for examination.

5.2.2 Habitat

For decades, human activities and inhabitation have been growing more in the project area. No ecologically or biologically sensitive site has been found in the project area. Existing ecological condition is depicted below.

Faunal Resources: Because of the degraded habitat conditions, the project site and its surroundings do not support any faunal resources of ecological or economic significance.

Ecological Setting: The Shwe Lin Ban rice mill is located within the Shwe Lin Ban Industrial Area. The area has been converted to an industrial zone and it is expected that the site is devoid of any ecologically significant floral and faunal population. Historically, the area was formerly a paddy cultivation area before being converted to an industrial zone. There is not any intact forest in survey area.

5.2.2.1 Flora

A total of 59 plant species were recorded in the Hlaing Thar Yar area. There are 12 species of herb, 6 species of climber or creeper, 11 species of small tree and 25 species of tree, and 5 species of shrub were also recorded. Identified plant species list is presented in

Table 5-12.

Table 5-12 List of plant species recorded in Hlaing Thar Yar

No.	Family Name	Species Name	Common Name/ Myanmar Name	Habitat	IUCN Status
1	Acanthaceae	<i>Asystasia gangetica</i>	Not known	Herb	NE
2	Amaranthaceae	<i>Alternanthera nodiflora</i>	Kanaphaw	Herb	LC
3	Amaranthaceae	<i>Alternanthera sessilis</i>	Pazun-sar	Herb	NE
4	Annonaceae	<i>Annona squamosa</i>	Awzar	Small tree	NE
5	Anacardiaceae	<i>Mangifera indica</i>	Thayet	Tree	NE
6	Apocynaceae	<i>Allamanda cathartica</i>	Shwewa-pan	Small tree	NE
7	Areaceae	<i>Cocos nucifera</i>	Ohn	Tree	NE
8	Asclepiadaceae	<i>Calotropis procera</i>	Mayo	Shrub	NE
9	Asteraceae	<i>Chromolaena odorata</i>	Bizat	Shrub	NE
10	Asteraceae	<i>Mikania micrantha</i>	Bizat-nwe	Climber/ Creeper	NE
11	Asteraceae	<i>Cyanthillium cinereum</i>	Kadu-pyan	Herb	NE
12	Asteraceae	<i>Eclipta alba</i>	Kyeik-hman	Herb	NE
13	Balsaminaceae	<i>Impatiens balsamina</i>	Dan-pan	Herb	NE
14	Bignoniaceae	<i>Oroxylum indicum</i>	Kyaung-sha	Tree	NE
15	Boraginaceae	<i>Heliotropium indicum</i>	Sin-hna-maung	Herb	NE
16	Cleomaceae	<i>Cleome burmanni</i>	Hin nu new yine	Herb	NE
17	Caesalpiniaceae	<i>Senna siamea</i>	Mezali	Tree	NE
18	Caesalpiniaceae	<i>Tamarindus indica</i>	Magyi	Tree	NE
19	Caricaceae	<i>Carica papaya</i>	Thinbaw	Small tree	DD
20	Combretaceae	<i>Terminalia catappa</i>	Banda	Tree	NE
21	Convolvulaceae	<i>Ipomoea batatas</i>	Kazun	Climber/ Creeper	NE
22	Convolvulaceae	<i>Ipomoea aquatica</i>	Ye-kazun	Climber/ Creeper	NE
23	Convolvulaceae	<i>Ipomoea obscura</i>	Kazun nwe	Climber/ Creeper	NE
24	Cucurbitaceae	<i>Cephalandra indica</i>	Thakhar	Climber/ Creeper	NE
25	Euphorbiaceae	<i>Euphorbia heterophylla</i>	Kywe-kyau-myin-si	Herb	LC
26	Fabaceae	<i>Cassia fistula</i>	Ngu	Tree	NE
27	Euphorbiaceae	<i>Fluggea leucopyrus</i>	Kon-chinya	Small tree	NE
28	Euphorbiaceae	<i>Phyllanthus niruri</i>	Kyet-tha-hin	Shrub	NE
29	Fabaceae	<i>Pterocarpus macrocarpus</i>	Padauk	Tree	EN
30	Fabaceae	<i>Sesbania grandiflora</i>	Paukpan-byu	Small tree	NE
31	Fabaceae	<i>Acacia concinna</i>	Kinmun-gyin	Shrub	NE
32	Fabaceae	<i>Cassia alata</i>	Pwesay-mezali	Small tree	LC
33	Fabaceae	<i>Clitoria ternatea</i>	Aungmenyo	Climber/ Creeper	NE

No.	Family Name	Species Name	Common Name/ Myanmar Name	Habitat	IUCN Status
34	Fabaceae	<i>Delonix regia</i>	Seinban	Tree	NE
35	Lythraceae	<i>Lagerstromiaspeciosa</i>	Pyinma	Tree	NE
36	Meliaceae	<i>Azadirachtaindica</i>	Tama	Tree	NE
37	Malvaceae	<i>Ceiba pentandra</i>	Le-moh-pin	Tree	LC
38	Malvaceae	<i>Hibiscus rosa-sinensis</i>	Khaung-yan	Small tree	NE
49	Mimosaceae	<i>Mimosa pudica</i>	Htikayon	Herb	NE
40	Mimosaceae	<i>Albizialebbek</i>	Kokko	Tree	NE
41	Mimosaceae	<i>Leucaena leucocephala</i>	Bawsagaing	Tree	NE
42	Mimosaceae	<i>Acacia auriculiformis</i>	Malaysia-padauk	Tree	LC
43	Moraceae	<i>Ficus religiosa</i>	Bawdi-nyaung	Tree	NE
44	Moraceae	<i>Artocarpus heterophyllus</i>	Peinne	Tree	NE
45	Moraceae	<i>Ficus hispida</i>	Ka-aung	Tree	LC
46	Moringaceae	<i>Moringa oleifera</i>	Dan-da-lun	Tree	NE
47	Mysaceae	<i>Musa sapientum</i>	Nget-pyaw	Herb	NE
48	Myrtaceae	<i>Eugenia praetermissa</i>	Thabye	Tree	NE
49	Myrtaceae	<i>Psidiuns guajava</i>	Malaka	Small tree	LC
50	Myrtaceae	<i>Eugenia oleina</i>	Asean Thabye	Tree	NE
51	Nyctinaginaceae	<i>Bougainvilla sp.</i>	Sakuu pan	Small tree	NE
52	Oxalidaceae	<i>Averrhoa bilimbi</i>	Zaung-yar	Tree	NE
53	Onagraceae	<i>Ludwigia octovalvis</i>	Lay-nyin-gyi	Herb	LC
54	Rhamnaceae	<i>Ziziphusjuzuba</i>	Zi	Tree	NE
55	Rubiaceae	<i>Morinda angustifolia</i>	Yeyo	Small tree	NE
56	Rubiaceae	<i>Ixora coccineo</i>	Ponna yeik	Shrub	NE
57	Rubiaceae	<i>Anthocephalus morindaefolius</i>	Ma-u-let-tan-she	Tree	NE
58	Sapotaceae	<i>Mimusops elengi</i>	Khayay	Tree	LC
59	Urticaceae	<i>Laportea interrupta</i>	Phet-yar-pho	Small tree	NE

NE = Not Evaluated

LR/LC = Lower Risk/Least Concerned

EN= Endangered

Conservation Status of Important Species: according to the IUCN Red List (2024-2), only one species of Endangered (EN) Padauk *Pterocarpus macrocarpus* was identified in the survey period. All plant species are Least concerned and not evaluated.



Figure 5-9 Padauk (*Pterocarpus macrocarpus*)

5.2.3 Terrestrial Fauna

5.2.3.1 Mammal

Secondary data was also collected from villagers by the interview and Literature survey method was conducted to supplement the data. Some questions were asked of local people who have knowledge about lists of terrestrial mammal species.

2 species of mammals 2 genera belonging to 2 families were observed in the study area. There are Grey squirrel (*Callosciurus pygerythrus*), and Farm-coloured mouse (*Mus cervicolor*) was recorded by interviewed survey from local people. According to the IUCN Red List (2024-2), there was no threatened species and no endemic species in this area.

Table 5-13 List of mammal species

No.	Family Name	Species Name	Common Name	IUCN Status	Remarks
1	Sciuridae	<i>Callosciurus pygerythrus</i>	Grey squirrel	LC	Observed
2	Muridae	<i>Mus cervicolor</i>	Farm-coloured Mouse	LC	Interview

LC=Least Concerned



Figure 5-10 *Callosciurus pygerythrus* (Grey squirrel)

5.2.3.2 Herpetofauna

Herpetofauna surveys were conducted by Interviews with local people were conducted to collect secondary data.

A total of 4 species of amphibian and reptile were recorded in the survey period through interviewed and observation. There are 1 species of lizard and 3 species of snake. One species of lizard belonging to family Agamidae and 3 species of snake belonging to families Colubridae. According to the IUCN red list (2024), there are no endemic species and no threatened species within the survey area..

Table 5-14 List of amphibian and reptile species

No.	Family Name	Species Name	Common Name	IUCN Status	Remarks
1	Agamidae	<i>Calotes Versicolor</i>	Garden Fence Lizard	NE	Observed
2	Colubridae	<i>Coelognothus radiatus</i>	Radiated Rat Snake	LC	Interviewed
3	Colubridae	<i>Amphiesma stolatum</i>	Buff-Striped Keelback	NE	Interviewed
4	Colubridae	<i>Xenochrophis piscator</i>	Chequered Keelback Water Snake	LC	Interviewed

NE=Not Evaluated, LC=Least Concerned



Figure 5-11 *Calotes Versicolor* (Garden Fence Lizard)

5.2.3.3 Birds

Secondary data was also collected from villagers by the interview and Literature survey method was conducted to supplement the data.

A total of 23 bird species, 18 genera belonging to 16 families, were recorded in the project area. The most commonly observed birds include, Spotted Dove (*Streptopelia chinensis*), House Sparrow (*Passer domesticus*), Black Drongo (*Dicrurus macrocercus*), Green bee-eater (*Merops orientalis*). According to the IUCN red list of threatened species (2024-2), there are no endemic species in the survey area..

Table 5-15 List of bird species

No.	Family Name	Species Name	Common Name	IUCN Status
1	Cisticolidae	<i>Orthotomus sutorius</i>	Common Tailorbird	LC
2	Sturnidae	<i>Acridotheres tristis</i>	Common myna	LC
3	Ramphastidae	<i>Megalaima haemacephala</i>	Coppersmith Barbet	LC
4	Alcedinidae	<i>Halcyon smyrnensis</i>	White- throated Kingfisher	LC
5	Meropidae	<i>Merops orientalis</i>	Little green bee-eater	LC
6	Apodidae	<i>Cypsiurus balasinensis</i>	Asian Palm-Swift	LC
7	Columbidae	<i>Streptopelia chinensis</i>	Spotted Dove	NE
8	Columbidae	<i>Streptopelia tranquebarica</i>	Red collared Dove	LC
9	Columbidae	<i>Columba livia</i>	Rock Pigeon	LC
10	Corvidae	<i>Corvus splendens</i>	House Crow	LC
11	Corvidae	<i>Corvus macrorhynchos</i>	Large-billed Crow	LC
12	Passeridae	<i>Passer domesticus</i>	House sparrow	LC
13	Passeridae	<i>Passer montanus</i>	Eurasian Tree Sparrow	LC
14	Estrildidae	<i>Lonchura atricapilla</i>	Black headed munia	LC
15	Hirundinidae	<i>Hirundo rustica</i>	Barn Swallow	LC
16	Dicruridae	<i>Dicrurus macrocercus</i>	Black Drongo	LC
17	Dicruridae	<i>Dicrurus leucophaeus</i>	Ashy Drongo	LC
18	Muscicapidae	<i>Copsychus saularis</i>	Oriental Magpie Robin	LC
19	Muscicapidae	<i>Muscicapa sibirica</i>	Dark-sided flycatcher	LC
20	Nectariniidae	<i>Nectarinia jugularis</i>	Olive-backed Sunbird	LC
21	Nectariniidae	<i>Nectarinia asiatica</i>	Purple Sunbird	LC
22	Pycnonotidae	<i>Pycnonotus cafer</i>	Red-vented Bulbul	LC
23	Estrildidae	<i>Lonchua punctulata</i>	Scaly-breasted Munia	LC

NE=Not Evaluated, LC=Least Concerned



Figure 5-12 *Dicrurus macrocercus* (Black Drongo)



Figure 5-13 *Merops orientalis* (Little green bee-eater)



Figure 5-14 *Passer domesticus* (House Sparrow)



Figure 5-15 *Lonchura atricapilla* (Black headed munia)

5.2.3.4 Insects (Butterfly and Dragonfly)

A total of 16 butterfly species to 9 genera 4 families are recorded in the survey area. These included 3 species 2 genera of papilionidae, 5 species 4 genera of pieridae, 7 species 3 genera of Nymphalidae, 1 species 1 genera of Hesperidae. The most occurrence of family Nymphalidae are very common in the study area. According to the IUCN red list (2024-2), Peacock pansy (*Junonia almanac*) is least concern. There are no threatened species and no endemic species.

Table 5-16 List of butterfly species in the study area

No.	Family Name	Species Name	Common Name	IUCN Status
1	Papilionidae	<i>Papilio demoleus</i>	Lime Butterfly	NE
2	Papilionidae	<i>Papilio polytes</i>	Common Mormom	NE
3	Papilionidae	<i>Pachliopta aristolochiae</i>	Common Rose	NE
4	Pieridae	<i>Catopsilia pomona</i>	Mottled Emigrant	NE
5	Pieridae	<i>Catopsilia pyranthe</i>	Mottled Emigrant	NE
6	Pieridae	<i>Leptosia nina</i>	Psyche	NE
7	Pieridae	<i>Delias hyparete</i>	Painted Jezebel	NE
8	Pieridae	<i>Eurema hecabe</i>	Common Grass Yellow	NE
9	Nymphalidae	<i>Danaus chrysippus</i>	Plain Tiger	NE
10	Nymphalidae	<i>Danaus genutia</i>	Common Tiger	NE
11	Nymphalidae	<i>Danaus limniace</i>	Blue Tiger	NE
12	Nymphalidae	<i>Melanitis leda</i>	Common Evening Brown	NE
13	Nymphalidae	<i>Juonia atlites</i>	Grey Pansy	NE
14	Nymphalidae	<i>Junonia almana</i>	Peacock Pansy	LC
15	Nymphalidae	<i>Junonia iphita</i>	Chocolate Pansy	NE
16	Hesperidae	<i>Borbo cinnara</i>	Formosan Swift	NE

NE=Not Evaluated, LC=Least Concerned

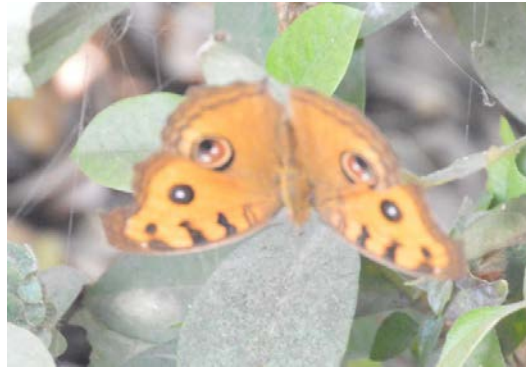


Figure 5-16 *Junonia almana* (Peacock Pansy)

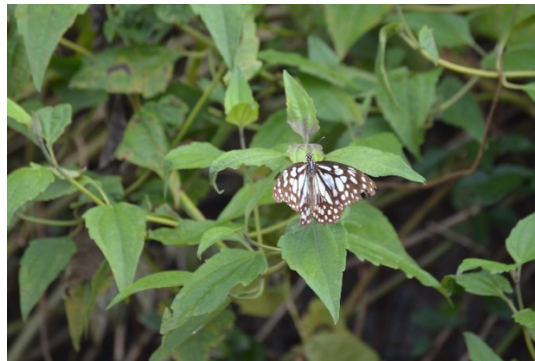


Figure 5-17 *Danaus genutia* (Common Tiger)



Figure 5-18 *Pachliopta aristolochiae* (Common Rose)

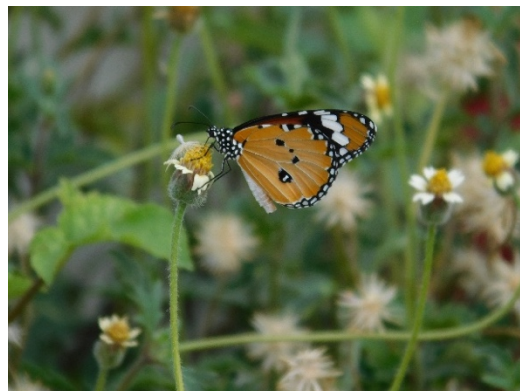


Figure 5-19 *Pachliopta aristolochiae* (Common Rose)

5.2.3.5 Dragonfly

A total of 2 dragonfly species 2 genera 1 family were recorded around the survey area. All species same the family Libellulidae. According to the IUCN red list (2024-2) of threatened species, there was no threatened species and no endemic species.

Table 5-17 List of dragonfly species around the survey area

No.	Family Name	Species Name	Common Name	IUCN Status
1	Libellulidae	<i>Neurothemis tullia</i>	Pied Paddy Skimmer	LC
2	Libellulidae	<i>Orthetrum sabina</i>	Green Marsh Hawk	LC

LC=Least Concerned



Figure 5-20 *Neurothemis tullia* (Pied Paddy Skimmer)



Figure 5-21 *Orthetrum sabina* (Green Marsh Hawk)

5.2.4 Fish

A total of 11 fish species were identified within the survey area. The recorded fish families were Channidae, Cyprinidae, Bagridae, Anabantidae, Latidae. According to the IUCN red list (2024-2). The most common of fish species are least concerned and data deficient, but there are no endemic species in the survey area.

Table 5-18 List of fish species

No.	Family Name	Species Name	Common Name	IUCN Status
1	Cichlidae	<i>Oreochromis niloticus</i>	Tilapia	LC
2	Clupeidae	<i>Tenualosa ilisha</i>	Hilsa	LC
3	Channidae	<i>Channa striata</i>	Common snakehead	NE
4	Latidae	<i>Lates calcarifer</i>	Seabass	LC
5	Sciaenidae	<i>Otolithoides pama</i>	Croaker	DD
6	Anabantidae	<i>Anabas testudineus</i>	Climbing perch	LC
7	Bagridae	<i>Mystus vittatus</i>	Dwarf catfish	LC
8	Danionidae	<i>Amblypharyngodon mola</i>	Mola carplet	LC
9	Cyprinidae	<i>Puntius chola</i>	Swamp barb	LC
10	Cyprinidae	<i>Catla catla</i>	Catla	LC
11	Cyprinidae	<i>Cirrhinus mrigala</i>	Mrigal	LC

DD=Data Deficient, LC=least Concerned



Figure 5-22 *Oreochromis niloticus* (Tilapia)



Figure 5-23 *Amblypharyngodon mola* (Mola carplet)

5.2.4.1 Protected Area

The nearest protected area to the project is the Hlawga Wildlife Park located to the north of Yangon city. It is also known as Hlawga Wildlife Park. The Hlawga Wildlife Park, with an area of 1542 acres (624 ha), has a fenced core area of 808 acres (327 ha). It is situated in Mingaladon Township of Yangon Division, in the northern part of Yangon City. The eastern

part of the park is bordered by the Yangon Pyay Road, the southern part by Hlawga Forest Reserve, the western part by paddy fields, and the northern part by Pe-Nwe-Gone Village.

It is located on (8.5) km north of Project area.



Figure 5-24 Hlawga Wildlife Park

5.3 Socio-Economic Environment

The project site is located in Hlaingtharya Township. Hlaingtharya Township is one of the new towns that emerged after 1988 in the suburban areas of Yangon city. It is included in North Yangon District and located between north latitudes 16° 49' 30" and 16° 54' and between east longitudes 95° 59' 30" and 96° 06' 45", about 14.5 km (9 miles) from the downtown of Yangon City. Hlaingtharya Township is bordered by Shwepyithar and Htantabin Township on the north, Insein, Mayangone, and Hlaing townships and the Hlaing River in the east, Twantay Township and the Panhlaing River on the south and Htantabin Township on the east.

The area of Hlaingtharya Township is 67.37 sq. km (26.01sq. miles), of which 25.9 sq. km (10 sq. miles) is included in the Myoma area. The long axis from north to south is 19.68km (7.6 miles) and the extreme breadth from east to west is 13.99km (5.4 miles). The township comprises 20 wards and 9 village tracts.

Hlaingtharya Township is relatively a new town of Yangon City. It is located on a flat land with the average height of 100 feet above sea level. Pan Hlaing River which is the southern boundary of the township is flowing into Hlaing River from the west. Hlaingtharya Township is located in the western bank of Hlaing River and is bounded by Insein Township in the east, Htantabin Township in the west, Twantay Township in the south and Shwepyithar Township in the north. Hlaingtharya Township is connected to old Yangon City with Bayintnaung Bridge, Anawyahta Bridge and Shwepyithar Bridge.



Figure 5-25 Surrounding area of the Rice Mill (SLB)

5.3.1 Population Dynamics

According to historical evidence, the area occupied by Hlaingtharya Township had been settled by people since the Hanthawady era. Under colonial rule it was included in Insein District in 1912. Before the establishment of the township, some villages were included in Insein Township and others in Htantabin Township. In 1985, the population increased sharply because of the relocation of families that suffered the fire in Mayangone Township. With the implementation of Yangon City Extension Project, the area was constituted as a new town.

The population, population growth rate, family size, density and distribution are, to a large extent, related to the socio-economic status of the inhabitants.

The growth rate of the period from 1999 to 2000 was 4.62 percent. Such great variation in the growth rate within a short span of time was attributable to the inherent nature of urbanization in a newly established area which was largely influenced by the highly complex societal structure.

Table 5-19 Total Population of Hlaingtharya Township

Township	Male	Female	Total	Sex Ratio
Hlaingtharya	322,862	365,005	687,867	88.45

5.3.2 Socio-economic Attributes

5.3.2.1 Education Sector

The socio-economic development and reduction of poverty depend largely on the level of the education of the area concerned. School enrolment rate of 5 years old children is 100% but percentage of students eligible for university is only about 30.72 %.

Table 5-20 presents the teacher: student ratio of the area.

Table 5-20 Lists of Students and Teachers

Sr. No	Name	No. of Teachers	No. of Students	Teacher and Student Ratio
1	BEHS (1)	108	4127	38.21
2	BEHS (2)	52	1484	28.53
3	BEHS (3)	80	3173	39.66
4	BEHS (4)	80	2825	35.31
5	BEHS (5)	62	1819	29.33

Source: Township Gazetteer (2014)

5.3.2.2 Occupational Structure

According to Hlaingtharya Township baseline census data 2014, there are 579,376 persons are over 10 years old. As shown in following table, there are 9051 persons sought work, 2647 persons who did not seek work, 63774 full time students, 24786 retired or elderly and 3611 are 3 disabled persons. Table 5-21 explains the detail occupational structure of Hlaingtharya Township.

Table 5-21 Population 10 years and over by usual activity status and sex

Usual activity status													
Item	Total	Employee (government)	Employee (private)	Employer	Own account worker	Unpaid family worker	Sought Work	Did not seek work	Full Time Student	House Hold Worker	Pensioner, Retired, Elderly	Disabled	other
Total	579,376	9,009	257,135	8,032	63,054	7,920	9,051	2,647	63,774	111,046	24,786	3,611	19,311
Male	268,014	4,940	149,279	5,267	35,895	3,775	6,015	1,653	32,244	3,491	11,328	2,174	11,953
Female	311,362	4,069	107,856	2,765	27,159	4,145	3,036	994	31,530	107,555	13,458	1,437	7,358

5.3.2.3 Property Status

In Hlaingtharya Township, there are 148711 total housing units. They are 41056 Concrete Houses, 69538 wooden houses, 18064 bamboo houses and 1073 other units. Table 5-22 shows the detailed housing units in Hlaingtharya Township. Table 5-22 to Table 5-26 show the detailed sources of lighting, drinking water, household water, types of cooking fuel and household amenities, respectively.

Table 5-22 Household units in Hlaingtharya Township

Type of housing unit								
Total	Apartment/ Condominium	Bungalow/ Brick house	Semi- pacca house	Wooden house	Bamboo	Hut 2-3 Years	Hut 1 Year	Other
148,711	14,289	9,606	17,161	69,538	32,302	2,123	1,599	2,093

Table 5-23 Conventional households by main source of lighting

Source of lighting								
Total	Electricity	Kerosene	Candle	Battery	Generator (private)	Water mill (private)	Solar system/ energy	Other
148,711	113,503	181	3,597	12,612	17,935	124	330	429

Table 5-24 Conventional households by main source of drinking water

Source of drinking water										
Total	Tap water/ Piped	Tube well borehole	Protected well / Spring	Unprotected well, /Spring	Pool/Pond Lake	River/stream/ Canal	Waterfall/ Rainwater	Bottled water Water purifier	Tanker/ Truck	Other
148,711	12,757	23,669	187	25	8,724	11	149	99,124	1,471	2,594

Table 5-25 Conventional households by main type of cooking fuel

Source of drinking water										
Total	Tap water/ Piped	Tube well borehole	Protected well, / Spring	Unprotected well, /Spring	Pool/Pond Lake	River/stream/ Canal	Waterfall/ Rainwater	Bottled water	Tanker/ Truck	Other
148,711	4,545	137,159	581	348	4,249	159	5	419	60	1,186

Table 5-26 Conventional households by availability of communication

Total Households	Radio	Television	Land line Phone	Mobile Phone	Computer	Internet at home	% With none of the items	% With all of the items
148,711	15,429	93,222	4,184	71,432	4,843	12,662	27.2	0.2

5.3.2.4 Transportation

Two main arterials roads with six lanes without pavement, bicycle way and motor cycle way across the township from east to west and lead to Ayeyarwady Division. Three main collector roads with four lanes without pavement, bicycle way and motor cycle way are laying along the north –south direction.

The four bridges that include Aung Zeya Bridge, Bayinnaung Bridge 1 and 2, Shwe Pyi Thar Bridge connect with Hlaing Thar Yar and other parts of Yangon city across the Yangon River and Hlaing River. The Pan Hlaing Bridge connects with Hlaing Thar yar Township and Twantay Township across the Pan Hlaing River.

5.3.2.5 Income Status

Most of respondents from families are factory workers and the whole families' incomes are very low. According to the results, 69% of families are living in rental houses, 29 % of families live in their own houses and 3% of families can access labor housing.

5.3.2.6 Electricity Supply

The 71% of households use electricity for the source of the lighting and 26% of families use for community generator and owned solar power.

5.3.2.7 Water Supply

YCDC water supply system only covers in present in Hlaing Thar Yar Township. 23% of families can access tap water because of the location of the respondents. Mostly are using the ground water from wells.

5.3.2.8 Cooking Fuels

The main sources of cooking materials are used electricity (70%), charcoal (14%), fire wood (10%), and gas (5%).

5.3.3 Health Status

The township has four hospitals with 331 beds. Two of them are government hospital and the rest two are private hospitals. Hospital beds per 1000 people in Hlaing Thar Yar Township are 0.3 according to 2020-2021 township report. Doctor, nurse, and health worker and people ratio are also very low in area.

According to Table 5-27, there are a total 3 Hospitals and total 87 clinics in Hlaing Thayer Township. Table 5-28 shows that TB is the most prevalent infectious disease and Diarrhea is the second most prevalent infected disease.

Table 5-27 Health care facilities Hlaing Thayer Township

	Hospital			Clinic					Private Clinics	Child and Maternal
	Government			Government						
	16 bedded	25 bedded and up	Private	RHC	RHS	Leprosy Campaign	Malaria Campaign	TB Campaign		
Total	1	1	1	2	8	-	-	-	76	1

Table 5-28 Five diseases that occur most in Hlaingtharya Township

Type of Diseases									
Malaria		Diarrhea		TB		Dysentery		Hepatitis	
Infected	Died	Infected	Died	Infected	Died	Infected	Died	Infected	Died
-	-	-	273	-	618	16	-	-	-

5.4 Cultural Heritage

There are no cultural heritage resources in the surrounding of project implementation area because the project site is situated in industrial zone.

The Famous pagoda as historical buildings in Hlaing Thar Yar Township are Aung Myay Thar Yar Pagoda (4.5 km of south of Project Area) and Shwe Yin Aye Pagoda (3.7 km of southern west of Project area).

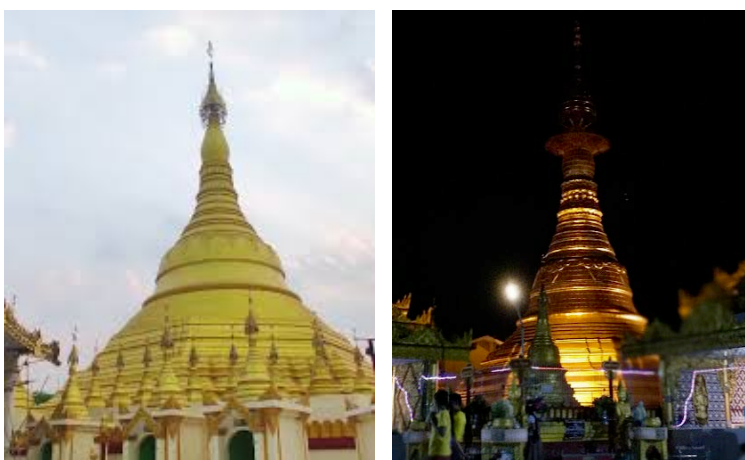


Figure 5-26 Aung Myay Thar Yar Pagoda and Shwe Yin Aye Pagoda in Hlaing Thar Yar

6. ANTICIPATED ENVIRONMENTAL AND SOCIAL IMPACTS AND MITIGATION MEASURES

6.1 Introduction

The discussions on impact analysis of the project are then divided to identify and analyze the potential impacts of the construction, operational and decommissioning phases of the proposed Daewoo Rice Processing Complex Project. For each parameter individual impact analysis conclusions are provided under the title 'Impact Summary'. Finally, when necessary, mitigation measures are presented mainly where moderate to major adverse impacts are identified in order to minimize as much as practically possible the negative impacts. Furthermore discussion is provided regarding the significance of the residual impacts.

Environmental Impacts can be expected from both construction and operational phase of the project.

The topics assessed are briefly explained below:

1. **Soil and Groundwater Quality** – Risks for soil and groundwater contamination are examined.
2. **Air Quality** – Existing and future sources of air pollution are identified and analysed with respect to the current and predicted future air quality of the facility.
3. **Noise and Vibrations**– Noise and vibrations from construction/installation activities and operational activities are focused upon, with reference to other existing and autonomous noise sources.
4. **Waste Management** – The proper application of waste reduction, reuse, recovery, and recycling practice are considered.
5. **Ecology** – Direct and secondary ecological impacts are examined for the terrestrial ecosystems close to the ricemill plot.
6. **Socio-cultural** – Applicable direct and secondary impacts are brought forward and assessed with respect to accepted principles of social welfare.

Other topics discussed in the succeeding chapters include the following:

7. **Legal Compliance** – Applicable to compliance to existing labour laws
8. **Natural Resource Use** – Impacts from use of natural resources and energy are assessed.
9. **Traffic** – Impact to the traffic condition of the area and its immediate vicinity is assessed.

6.2 Impact Assessment

The impact assessment will cover activities from construction, operation and decommissioning phase of the project. Actual construction has not been commenced yet for the project.

The impacts are calculated or described without mitigation. Mitigation measures that reduce such impacts are described in a separate section (7).

6.3 The Impact Assessment Matrix

The assessment of impact significance for this IEE is based on four criteria: magnitude, permanence, reversibility and cumulative impact. The table below explains each of the criteria and the scaling method to be used.

Table 6-1 Categories for impact significance

Impact Parameters		
Spatial Scale	Temporal Scale	Impact Intensity
Site	Short term	Negligible
1	1	1
Limited	Medium term	Minor
2	2	2
Area	Long term	Moderate
3	3	3
Regional	Multi year	Serious
4	4	4

** Before each number place + if the impact would be beneficial*

Table 6-2 Categories of severity

Scores	Severity Rating
1-8	Impact of low severity (negligible impact)
9-27	Impact of moderate severity (moderate impact)
28-64	Impact of high severity (major impact)

6.4 Expansion/ Construction Phase Impact Assessment

6.4.1 Soil & Groundwater

The main potential sources of pollution that may affect the quality of the soil and groundwater include the following;

6.4.1.1 Fuel Tank and Diesel Generator

Self power generation using a diesel turbine is relied upon during the construction period as the power supply from Yangon Electricity Company will not be available. The capacity of the generator is determined on a per need basis. Spill prevention mechanisms is put in place to minimize spillage while filling diesel fuel tank. Spill response procedures and reporting will also be followed in order to protect contamination of groundwater aquifer.

6.4.1.2 Paints and Thinner

During the construction phase, activities would include painting of building, tanks and other structures. Spills of paint and thinner may occur during the painting works. Paints may also leak during its storage if the container is damaged. When this happens, spills and leaks may leach through the stone layer to the soil and potentially onto the groundwater. If a proper storage place is not provided for the paints and thinner, spill and leak may directly leach to the soil and can contaminate both soil and groundwater.

Impact Summary

The main impact to the soil and groundwater during the construction phase is the potential spill and leak from the storage and use of paints and thinner and fuel from the generator for construction equipment..

Considering all the discharges leading to the potential contamination to the soil and groundwater during construction, the unmitigated impact is assessed as follows;

Table 6-3 Impact Significance for Soil And Groundwater During Construction Phase

Impact	Spatial Scale	Temporal Scale	Impact Intensity	Severity
Spills/leak from stored fuel and diesel generator.	1	1	2	Impact of low severity (negligible impact)
Spills/leak from paints / thinner	1	1	2	Impact of low severity (negligible impact)

However, with the adoption of appropriate mitigating measures provided during the construction phase, the impact could be reduced to as low as reasonably possible (ALARP). Mitigating measures for the soil and groundwater impacts are discussed in section 6 of this IEE report.

6.4.2 Air Quality

The potential sources of air pollution during construction phase are:

- Combustion emissions from heavy construction equipment, vehicles;
- Dust from soil disturbances (e.g. earthworks) and vehicle movement;
- Release of fine particles and gas during cutting and welding activities; and
- VOC emissions from stored diesel, paint and thinners.

6.4.2.1 Combustion Emissions

The main source of air pollution is from the utilization of machineries and construction vehicles that generate combustion emissions like NO_x, SO_x, CO, CO₂ etc. Carbon dioxide (CO₂) is one of the Greenhouse gases (GHG) which can contribute to the Global warming phenomenon. The various sources of emissions are described below.

6.4.2.2 Emission from Generator

For construction activities, it is assumed that generators are mainly used to supply the power requirements of construction equipment (e.g. cranes, welding machine). During its operation, the generator will release combustion emissions due to the consumption of diesel fuel. Expected emissions include NO_x, CO, SO_x and other hydrocarbons.

To calculate, the Australian National Pollutant Inventory Emission estimation technique manual for Combustion engines Version 3.0 June 2008 was used as basis of calculating emissions for stationary engines.

$$E_i = P \times Ophrs \times EF_i \times (100-ER / 100) \quad \text{Equation 1}$$

Where:

E_i = Emission of substance i for a specific engine type (kg/day)

P = Average rated engine power (kW)
= 450 kw

$Ophrs$ = Vehicle operating hours (h/day)
= 8 hours/day

EF_i = Emission factor of substance
= 0.25

ER = Emission reduction efficiency for substance
= 25%

i = Substance I (-)

Table 6-4 Estimated Emission from Stationary Sources in an Eight (8) Hour Day for Construction Phase

Substance	Power (KW)	Averag Operating hours (h/day)	Emission factor (kg/kWh)	Efficiency Rating	Emissions (kg/d)
Carbon monoxide	450	8	0.0033	0.25	8.91
Oxides of nitrogen	450	8	0.0079	0.25	21.33
Particulate matter	450	8	0.00043	0.25	1.161
Total volatil organic	450	8	0.00038	0.25	1.026

It should be noted that the construction activities are temporary in nature. Thus, impact to the ambient air is considered not significant. Short term, localized impacts may be experienced during this period especially if the generator set is not regularly maintained and uses high sulphur content fuel.

6.4.2.3 Emission from Vehicles and Heavy Construction Equipment

Another source of combustion emissions during the construction phase are combustion emission from heavy vehicles like trucks and moving cranes. The transport of workers to and from the site;

transport of materials and other resources (e.g. water) will add to the overall emissions. The emissions from vehicles will depend on various factors like the chemical composition of the fuel used (e.g. Sulfur content), the load of the vehicle, the engine condition (whether properly maintained or not) and the speed at which the vehicle is travelling. The assumed number of fuel trucks coming into the site is estimated to be 10 trucks per day. It is expected that the road transports will produce combustion related emissions like, NO_x, SO_x and PM₁₀ emissions. The potential emissions from the delivery trucks are calculated as shown below:

- Estimated number of delivery trucks is 10 per day: coming in for the transportation of raw materials to the construction site;
- The cumulative operating hours of the 10 trucks is estimated to be 1 hrs a day;
- Assumed engine power of the vehicle engine is 250kW.

Hence the emission of pollutant can be computed as follow (ref: Equation 4, Emission Estimation Technique Manual for Combustion Engines Version 2.2):

$$E = P \times \text{Ophrs/year} \times \text{Load Factor} \times \text{Emission factor of the pollutant Equation 2}$$

Where:

P = average rated engine power (KW)

Ophrs = Operating hours

Load factor for the off-highway truck is 0.50 (ref: Emission Estimation Technique Manual for Combustion Engines Version 2.2 by National Pollutant Inventory).

Table 6-5 Estimated emission data for combustion vehicles

Pollutant	Emission Factor in kg/kWh	Power, kW	Operating hours / day	Load factor	Emission rate in kg / day	Total Emissins*
CO	0.0047	250	1	0.5	4.70	2.76
NO _x	0.0109	250	1	0.5	10.00	13.63
SO ₂	0.00119	250	1	0.5	1.19	0.18
PM ₁₀	0.000673	250	1	0.5	0.67	0.06
VOCs	0.0005	250	1	0.5	0.50	0.03

**Assumption: 10 vehicles entering the facility, operating hours is 8 hours/ day.*

Table 6-5 presents the estimated emission over an hour period. It is estimated that combustion emission from vehicles and equipment is higher during the expansion / construction phase as compared to the operational phase; as there is more vehicles coming into the site. It should be noted that these emissions are temporary in nature and air quality will return to normal levels when the expansion / construction phase is finished.

6.4.2.4 Dust Emissions

Dust emissions from the construction / installation activities will have an intense localized effect during construction activities especially during months of adverse meteorological conditions (e.g. strong wind). The main sources of dust emissions during the Expansion/ construction phase are the earthworks like:

- Ground excavation works;
- Site leveling;
- Compaction;
- Piling, and;
- Vehicle movement.

Construction dust, classified as PM₁₀ - particulate matter less than 10 microns in diameter, invisible to the naked eye, can be carried away over large distances over a long period of time. It is expected that this dust emission is high during the facility construction period (6 months).

6.4.2.5 Emissions from Cutting/ Welding Activities

Welding and cutting is done as part of construction activities resulting in the release of fumes and particulate matters into the air. The following are the types of welding techniques available:

- Metal inert gas (MIG), commonly known as gas metal arc welding (GMAW);
- Tungsten inert gas (TIG), also known as gas tungsten arc welding (GTAW);
- Flux cored arc welding (FCAW); and
- Shielded metal arc welding (SMAW)

Most of the above welding techniques utilize consumable electrodes except for TIG. TIG is a manual welding process that uses a non-consumable electrode made of tungsten, an inert or semi-inert gas mixture (e.g. Argon) and a separate filler material.

During welding, emissions in the form of fumes are released into the immediate environment. The elemental composition of the fumes varies with the electrode type and with the work piece composition. The USEPA stated in the 1990 Clean Air Act Amendment that hazardous metals released in welding fumes include manganese (Mg), nickel (Ni), chromium (Cr), cobalt (Co) and lead (Pb). Gas phase pollutants are also generated during welding operations, but little information is available on quantifying these pollutants. Known gaseous pollutants (including "greenhouse gases") include carbon dioxide (CO₂), carbon monoxide (CO), nitrogen oxides (NO_x), and ozone (O₃). The actual emissions from welding depend not only on the process and the electrode type, but also on the base metal material, voltage current, arc length, shielding gas and travel speed.

Impact Summary

The main impact on the air quality during the construction is identified as combustion related emissions from vehicles; dust from vehicle movement; fumes generated during welding and VOC

emissions during the painting activities. It is usually difficult to assign exact amount of emissions during the construction phase due to the temporary (short term) nature of the activities.

Considering all the emissions leading to air pollution during construction, the unmitigated impact is assessed as follows;

Table 6-6 Impact significance of air quality during construction phase

Impact	Spatial Scale	Temporal Scale	Impact Intensity	Severity
Combustion emissions from generator, heavy construction equipment, vehicles.	1	1	2	Impact of low severity (negligible impact)
Dust emissions from soil disturbances (e.g. earthworks) and vehicle movement.	1	1	2	Impact of low severity (negligible impact)
Release of fine particles and gas during cutting and welding activities.	1	1	2	Impact of low severity (negligible impact)
VOC emissions from stored paint and thinners.	1	1	2	Impact of low severity (negligible impact)

With this assessment, mitigation measures are recommended to be implemented during construction to avert the adverse effects in the air quality from the construction activities.

6.4.3 Waste

6.4.3.1 Solid Waste

During the Expansion/construction phase the common waste generated are lumber, steel scrap, cardboard, plastics, glass and other packaging, general rubbish, metals, plaster, tar waste, wood products, concrete, asphalt paving, roofing, gypsum boards; rock, and soil and fines (US EPA: Construction and Demolition Materials, 2008).

In order to assess the impacts resulting from construction waste generation, an estimate of the total amount of construction waste has been made based on waste generation factors. Based on the data from the USEPA, a typical new construction generates an average of 3.9 pounds of waste per square foot of building area, which is equivalent to 19.06 kg/m² of total built up area (USGBC White Paper Planning for Construction Waste Reduction, 2005). Applying this factor to the proposed project with a total built-up area of approximately 37,850 m², the total weight of construction waste can be estimated as follows:

$$\begin{aligned}\text{Total Weight} &= 40,800 \text{ m}^2 \times 19.06 \text{ kg/m}^2 \\ &= 1,714.4 \text{ tons}\end{aligned}$$

$$\begin{aligned}\text{Total Waste per Day} &= (1,714.4 \text{ tons} / 24 \text{ months}) \times (1 \text{ month} / 30 \text{ days}) \\ &= 9.5 \text{ ton} / \text{day}\end{aligned}$$

The density of construction waste varies depending on the construction technique, construction materials and usage, and other variables. According to available technical references, the typical density of compacted loose refuse could be between 235 and 350 kg/m³ (Tchobanoglous et al., 1993). For a more conservative estimate, the higher value has been used in the calculation, as follows:

$$\begin{aligned}\text{Total Volume} &= 8618.26 \text{ kg} / 350 \text{ kg/m}^3 \\ &= 24.62 \text{ m}^3\end{aligned}$$

According to the Institute for Global Environmental Strategies (IGES), the daily average waste generation (collected) in Yangon City is 1,670 tons for 2011 - 2012. According to the same report, it shows that, approximately 10% of all the solid wastes generated in the City account for the other types of waste (which can include the construction waste) (existing waste classification is Organic, Plastic and others waste). Calculating the percentage from Yangon's solid waste production:

$$1670 \text{ tons} \times 0.10 = 167 \text{ tons}$$

Therefore, the total quantity of construction wastes estimated in the construction of the Rice Processing Complex is 9.5 ton per day, represents only 5.67% of the other waste generated compared to that in Yangon's other waste on a daily basis. It is noted that the construction waste will not be generated over a long period of time, and as such the increased pressure on the landfill and with reuse of waste materials including excavated soil, total waste generated is negligible.

6.4.3.2 Food Waste

To quantify the food waste generation construction, a factor of 1.5 lb. (0.45kg)/ employee / day (Source: California Department of Resources Recycling and Recovery (CalRecycle) Website: Estimated Solid Waste Generation Rates for Commercial Establishments 2009) was used as reference. The calculation is shown below.

$$\begin{aligned}\text{Estimated food Waste} &= 0.45\text{kg/ employee per day} \times 29 \text{ employees} \\ &= 15.05 \text{ kg/day}\end{aligned}$$

6.4.3.3 Sewage

Sewage was computed semi-quantitatively based on the common flush-toilet using only 0.42 US gallons (1.5 litres) of water per flush. An assumption of 2 toilet flushing per employee was used for calculation of the sewage generation per day, as detailed below.

Basis: 120 construction workers

$$\begin{aligned}\text{Total Estimated Sewage waste} &= 1.5\text{liters/toilet flush} \times 2 \text{ toilet flush/day} \times 29 \\ &\quad \text{construction workers} \\ &= 3.435 \text{ liters / day}\end{aligned}$$

For sludge composition in sewage waste, the factor of 0.11 kg/ employee (T. Hicks 2007: 2nd Ed. Handbook of Civil Engineering Calculation) and sludge density of 721 kg/ m³ (SI Metric Website: www.simetric.co.uk) was used as reference.

$$\begin{aligned}\text{Sludge in Sanitary Waste} &= 0.11 \text{ kg/ worker} \times 29 \text{ workers} \times 1/ 721 \text{ kg/ m}^3 \\ &= 0.0044 \text{ m}^3 \text{ per day or 4.4 liters per day}\end{aligned}$$

$$\begin{aligned}\text{Total Sewage} &= \text{Total Estimated Sewage waste} + \text{Sludge in Sanitary Waste} \\ &= 3.435 \text{ liters} + 4.4 \text{ liters} \\ &= 7.835 \text{ liters per day}\end{aligned}$$

6.4.3.4 Hazardous Waste

The hazardous waste may represent significant risk to human health and environment if managed improperly. Adequate handling, temporary storage and disposal are required to reduce threat to human health and to prevent potential contamination of the soil/groundwater. A proper waste management protective measure needs to be taken in order to minimize impact on environment. Typical construction hazardous waste stream contains:

- Clean-up materials (such as rags);
- Resins and paints;
- Drums, containers and tins with remains of hazardous substances;
- Roofing cement;
- Adhesives; and
- Machinery lubricants, and caulk.

6.4.3.5 Post Construction Waste

After construction is completed, wastes such as unused cement, cement bags, concrete, empty containers, etc will be generated at the construction site. It is difficult to calculate the amount of construction wastes, debris, etc generate at the site since some contractors can recycle or recover some of these wastes to be used elsewhere. If these wastes are not removed from site or not properly disposed, these wastes could create nuisance to other facilities at the project site.

Impact Summary

The unmitigated impact with regards to wastes generation during the construction of the Rice Processing Complex is considered to be as follows.

Table 6-7 Impact Significance of Construction Waste

Impact	Spatial Scale	Temporal Scale	Impact Intensity	Severity
Disposal of hazardous waste (paints, sewage, etc.)	3	3	2	Impact of moderate severity (moderate impact)
Disposal of non-hazardous solid waste	3	3	2	Impact of moderate severity (moderate impact)
Food Waste	1	1	1	Impact of low severity (negligible impact)
Disposal of non-hazardous liquid waste	3	3	2	Impact of moderate severity (moderate impact)

With this assessment, mitigation measures are recommended to be implemented during construction activities in section 6.

6.4.4 Noise

It is expected that /expansion construction phase of the project will generate high noise levels due to the movement of the vehicles and use of or operation of construction equipment. The main activities that influence the noise level during the construction phase are the usage of machineries, heavy equipment, earthworks (e.g. pilling, compacting) and cutting and welding activities.

6.4.4.1 Equipment Noise Levels

To analyse the impacts due to the noise generated from the construction of the proposed facility, the noise levels generated by representative equipment and activities are given in the table below:

Table 6-8 Typical noise levels of the construction equipment

Source	Specification	Sound Level dB (A)
Compactor	Typical, at 50 feet from source	90*
Bulldozer	Measured at the operator's ear	87*
Backhoe	Measured at the operator's ear	85*
Portable welder	Measured at the operator's ear	84*

Source	Specification	Sound Level dB (A)
Excavator	Measured at the operator's ear	80*
Dump Truck	Measured at the operator's ear	78*
Mobile crane	Measured at the operator's ear	78*
Vehicles / Trucks	Typical, at 50 feet from source	76**
Generator	Typical, at 50 feet from source	72*

*Source: Probable Noise Levels of Common Construction Tools, July 2005.

<http://staff.washington.edu/rneitzel/commontools.pdf>

**Source: A similar study is used as a reference (Reference:

www.portoflosangeles.org/EIR/ChinaShipping/DEIR/3.11_Noise.pdf)

It is apparent from that construction activities (see Table 30) in general will reach noise level of 70-90 dB(A) if you are measuring within 50 feet from the source. At this level, the noise will slightly exceed the standard stipulated by the National Environmental Quality (Emission) Guidelines (Final Draft) 2015 of 70 dB (A) on commercial and industrial areas.

For further analysis, the noise attenuation that is provided below to project the noise level produced by each of the construction machineries as it travels through the ambient air. The noise level is decreased by 6 dB (A) for every doubling of the distance away from the source of noise (HSE UK, 2010).

Table 6-9 Noise Attenuation During Construction Phase

Construction Noise Source	Sound Level dB (A)	Distance, m. Away from the Source								Specification
		1	2	4	8	16	32	64	128	
Bulldozer	87	87	81	75	69	63	57	51	45	Measured at the operator's ear
Backhoe	85	85	79	73	67	61	55	49	43	Measured at the operator's ear
Portable welder	84	84	78	72	66	60	54	48	42	Measured at the operator's ear
Excavator	80	80	74	68	62	56	50	44	38	Measured at the operator's ear
Dump Truck	78	78	72	66	60	54	48	42	36	Measured at the operator's ear
Mobile crane	78	78	72	66	60	54	48	42	36	Measured at the operator's ear

Table 6-10 Noise attenuation during construction phase (50ft from Source)

Construction Noise	Sound Level dB (A)	Distance, m, away from the Source								Specification
		50	52	54	58	66	82	114	178	
Compactor	90	90	84	78	72	66	60	54	48	Typical, at 50 feet from source
Vehicles/Trucks	76	76	70	64	58	52	46	40	34	Typical, at 50 feet from source
Generator	72	72	66	60	54	48	42	36	30	Typical, at 50 feet from source

As apparent from the table above, the noise perceived is significantly decreased at about 30m from the site. Take for example the noise from the bulldozer. At the site where it is used during construction, the noise level would be 87 dB(A). However, using the factor set by HSE UK, the noise projected at about 32 m from the source is only 57 dB(A) which is already within the standard set by the National Environmental Quality (Emission) Guidelines (Final Draft) 2015.

Impact Summary

It is apparent that elevated noise level may be experienced by adjacent areas during the Expansion/construction phase of the project. Impact of the noise condition is shown as follows;

Table 6-11 Impact Significance of Noise Quality During Construction Phase

Impact	Spatial Scale	Temporal Scale	Impact Intensity	Severity
Usage of high noise level generating equipment/ machine	1	1	2	Impact of low severity (negligible impact)

This is perceived as low severity (negligible impact) lasting only until the end of the construction phase. Mitigating measures to reduce noise level during the construction phase is discussed in section 7.

6.4.5 Ecology

The site selected for the implementation of the rice milling in Hlaingtharyar Township has little ecological significance, and the existing land use at the beginning of the project is an industrial area . The site also presents different types of bushes that can shelter rodents and lizards .

The project site has been modified to agricultural area to an industrial area . The project site has only few strands of trees, mostly eucalyptus. The riverine belt is badly degraded and has no tree population of ecological or economic importance, except some old banyan. The edge vegetation includes mostly grasses, primarily *Typha angustata*, *Saccharium spontanarum*, *saccharum munja*, *Tammarix aphylla*. No rare species of both plants and animals are found onsite. Impact assessment rating shown below:

Table 6-12 Impact Significance (Ecology)

Impact	Spatial Scale	Temporal Scale	Impact Intensity	Severity
Impacts to existing Flora and Fauna	1	1	1	Impact of low severity (negligible impact)

6.4.6 Resource Use

It is assumed that the project will have a high demand for electricity for its 8 hr construction schedule to provide electric power to the offices, to light up the construction site and to supply power for construction equipment. In addition, a high volume of fuel is necessary to transport materials, for fuel driven equipment and for the generator use. A diesel generator is used as the primary provider of power to the construction site therefore will not compete or use existing power lines.

Water is utilized for construction activities for drinking and domestic use (e.g. sanitation) however it is the contractor's responsibility to make the arrangements for providing for safe water supply during construction. Other resources that is utilized for the project are rocks, sand and other materials which is locally sourced within the Yangon or the other regions within Myanmar.

Table 6-13 Impact Significance of Resources Use

Impact	Spatial Scale	Temporal Scale	Impact Intensity	Severity
Requirement for Electricity	1	1	1	Impact of low severity (negligible impact)
Water use requirement	3	1	2	Impact of low severity (negligible impact)

6.4.7 Socio-economic

6.4.7.1 Vehicle movement

Only land transportation will be used for the transportation of construction supplies to the project area. About 10 trucks per day are expected to and from the project area. The project site is near the Kyan Sittar Road . The project expects to hire about 40 employees that can be local or from nearby villages. In the operation phase, raw materials and final product transportation with 1 trucks to deliver raw materials to the mill and processed rice to the clients.

A slight increase in inland traffic congestion is moderate in Halingtharya area. However, employees from nearby village will still need to commute to the project site thus contributing to the traffic.

6.4.7.2 Local economy

Over the course of six months, the total job opportunities created by the mill is 29. Employment priority is reserved for peoples from the neighboring villages.

Consequently, local economy is expected to boom during the construction phase of the project. Businesses can expect increased number of customers due to the mill's employees' basic needs such as food/ meals and personal hygiene products. The project proponent will likely turn to the local stores for basic supplies such as stationery, construction materials and other commodities.

The new job opportunities created by the project will raise the socio-economic status of the area.

6.4.7.3 Child labor

About 31.34% of Hlaing Thar Yar Township residents were under 14 years old. Moreover, most of the township households earn between 100k-200k kyats per month and the residents mostly finished primary education.

As the mill hires the construction work force, child labor can become an issue if no proper regulation exists. This is due to the high percentage of under 14 population, low household income and high dropout rate from school in the area. Moreover, because of the increased economic activity in the region, local businesses will likely seek cheap child labor. However, because of the low number of employment that the mill creates during the construction phase as well as an expected moderate increase in the local economy, the issue of child labor will not be an impact of high severity in the construction phase.

6.4.7.4 Community safety

During the construction phase, trucks and other motorized vehicles will operate for transportation of construction supplies. Moreover, the construction activities will produce air and water pollutants. Additionally, residents from nearby villages will commute to the project site for job.

Since there are no playgrounds or parks in the project area, it is very likely that children will play on the roads and streets, putting them at risk of traffic accidents. Furthermore, pollution of ecosystem by lead, benzene and other hazardous compounds if released to the environment at significant amounts can affect the health local communities. However, there are no indications that this is likely to occur. Moreover, the influx of commuters to the project area can put children at risk of human trafficking and child abuse.

6.4.7.5 Occupational safety

General construction activities such as mechanical and electrical work will occur during the Expansion/ construction phase of the project as well as working at height in some instances.

Even though injuries are inevitable in workplaces but the severity varies on the type of work performed and the availability of protective equipment. Construction events during the dry and hot season can expose workers to heat shock. During the wet season, workers are prone to slipping and electrical injuries. Chemical and physical hazards will also be present at the work site. Loud noises from the construction work can have hearing impact on the workers.

Impact summary

The following table is the impact summary for the construction phase:

Table 6-14 Impact Summary for Construction Phase

Impact	Spatial Scale	Temporal Scale	Impact Intensity	Severity
Vehicle movement	2	2	2	Impact of low severity (negligible impact)
Local economy	2	2	3	Impact of moderate severity (moderate impact)
Child labor	2	2	2	Impact of low severity (negligible impact)
Community safety	2	2	3	Impact of moderate severity (moderate impact)
Occupational safety	2	2	4	Impact of moderate severity (moderate impact)

6.5 Operational Phase Impact Assessment

The environmental aspects considered in operational phase are air quality, soil and groundwater, waste, noise, socio-economic, socio-cultural and ecology.

6.5.1 Air Quality

6.5.1.1 Fugitive Emissions

In Rice Processing Complexs fugitive emissions are generated from various sections during handling of raw rice /brown rice (white / parboiled), cleaning & milling of raw rice /brown rice (white / parboiled) , handling, storage of bran and disposal of bran due to various activities in the mills. The following are the areas where fugitive emissions from the operation of the Rice Processing Complex:

6.5.1.2 Fugitive Emission during handling of raw rice /brown rice (white / parboiled) from Unloading to cleaner

- During Unloading of raw rice /brown rice (white / parboiled) (cutting open the Gunny bags and releasing Raw rice /brown rice (white / parboiled)
- At different stages of lifting and discharging of raw rice /brown rice (white / parboiled) rice through bucket elevator
- Transfer points (belt to belt; belt to elevator; elevator to cleaner)
- Storage Bins (emissions from Raw rice /brown rice (white / parboiled) is discharged by Bucket Elevator)
- Locations of free fall of raw rice /brown rice (white / parboiled) (fine dust getting airborne due to free fall)

6.5.1.3 Fugitive Emission during Cleaning of raw rice /brown rice (white / parboiled)

- During pre-cleaning (mostly in Rotary Drums- fines separated due to movement and free fall of Raw rice /brown rice (white / parboiled))
- During raw rice /brown rice (white / parboiled) cleaning in raw rice /brown rice (white / parboiled) cleaner/ vibrating screen (due to rigorous movement of raw rice /brown rice (white / parboiled) , fines are generated)
- De-stoner machines (fines get extracted)
- Final cleaning in Raw rice /brown rice (white / parboiled) cleaners (fines are extracted out).

6.5.1.4 Fugitive Emissions during Milling of raw rice /brown rice (white / parboiled)

- At different stages of lifting and discharging of raw rice /brown rice (white / parboiled) /rice through bucket elevator (fines get airborne due to movement, fall of Raw rice /brown rice (white / parboiled) / Rice)
- During polishing of rice (fines are generated due to polishing)
- During grading of rice in rice grader (fines carried along with rice)

6.5.1.5 Emission from the fumigation to infected rice bag

The fumigation of Aluminium Phosphide 56% Tablet rice bag if pests are found can emitted and that impact to harm of the health of workers.

6.5.1.6 Emission from power generations

Diesel Generator

3 back up diesel generators are in place in order to ensure that the operations of the Rice Processing Complex go unhampered in case of lack of electricity.

To calculate, the Australian National Pollutant Inventory Emission estimation technique manual for Combustion engines Version 3.0 June 2008 was used as basis of calculating emissions for stationary engines.

$$E_i = P \times Ophrs \times EF_i \times (100-ER / 100) \quad \text{Equation 2}$$

Where:

E_i =Emission of substance i for a specific engine type (kg/day)

P =Average rated engine power (kW)
= 450 kw

$Ophrs$ =Vehicle operating hours (h/day)
= 8 hours/day

EF_i =Emission factor of substance
= 0.25

ER =Emission reduction efficiency for substance

= 25%

i = Substance i (-)

Table 6-15 Estimated Emission Stationary in an Eight (8) Hour Operations

Substance	Power (KW)	Average Operating hours (h/day)	Emission factor (kg/kWh)	Efficiency Rating	Emissions (kg/d)
Carbon monoxide	450	8	0.0033	0.25	8.91
Oxides of nitrogen	450	8	0.0079	0.25	21.33
Particulate matter 10.0 µm	450	8	0.00043	0.25	1.161
Total volatile organic compounds	450	8	0.00038	0.25	1.026

it should also be noted that the diesel generator is used only if the power requirement of the Rice Processing Complex increases.

Thus, impact to the ambient air is considered not significant. Short term, localized impacts may be experienced during this period especially if the generator set is not regularly maintained and uses high sulphur content fuel.

6.5.1.7 Vehicular emissions

Another potential sources of air quality impact during the operation of the rice mill facility, include vehicle emissions from the delivery trucks for raw materials as well as final product to be delivered to clients. Depending on the amount of materials required, the number of delivery trucks will vary. The total maximum production capacity of the rice mill is approximately 280 tons per day (normal operations is 160 tons / day only) provided that the capacity of the heavy goods vehicle (HGV) be higher than 25 tons. This will depend on the demand of the customer and the delivery of the rice schedule.

To calculate, the Australian National Pollutant Inventory Emission estimation technique manual for Combustion engines Version 3.0 June 2008 was used as basis of calculating emissions for heavy goods vehicle (HGV) that is used to transport the raw rice into the Rice Processing Complex and the processed rice out to customers.

$$E_i = P \times \text{Ophrs} \times \text{LF} \times \text{EF}_i \quad \text{Equation 4}$$

Where:

- E_i = Emission of substance i for a specific engine type (kg/day)
- P = Average rated engine power (kW)
= 260kw
- OpHrs = Vehicle operating hours (h/day)
= 8 hours/day
- LF = Load factor utilised in facility operations for equipment type (-)
= 6.8 kg/m³
- EF_i = Emission factor of substance
= 0.25i, for given engine and fuel type (kg/kWh)
- i = Substance i (-)

Table 6-16 Estimated Emission of Heavy Goods Vehicle (HGV)

Substance	Power (KW)	Average Operating hours (h/day)	Emission factor (kg/kWh)	Load Factor	Emissions (kg/d)	Onsite Emissions (1 hour on average) (kg)
Carbon monoxide	260	8	6.81	0.25	3541.2	442.65
Oxides of nitrogen	260	8	23	0.25	11960	1495
Particulate matter 10.0 µm	260	8	1.8	0.25	936	117
Total volatile organic compounds	260	8	1.8	0.25	936	117

Transportation inside the Rice Processing Complex facility would include the use of forklifts which is necessary to transport materials within the site. The estimated amount of emission is shown in Table 6-16 above. These however are relatively lower in comparison to the traffic load of the nearby road where hundreds of vehicles emit, NO_x, SO_x, and PM₁₀, the contribution of the Rice Processing Complex operations, related traffic and forklift usage emissions are therefore considered minimal.

Impact Summary for Air Quality During Operation

The main air quality impact for the proposed Rice Processing Complex are as follows;

- Fugitive emissions from Rice Processing Complexing operations (PM₁₀)

- Emissions from vehicles
- Emissions from back up diesel generators.

The magnitude of the impact is localized, however the amount of fugitive emissions may be significant if not suitably mitigated. The diesel generator is used only if the power requirement of the Rice Processing Complex increases or when the lack of Electricity from National Grid.

Emissions from the vehicles is not be significant as the vehicles will only be on site as soon as the raw rice is delivered / collected from the Rice Processing Complex therefore is temporary. The summary of impact is shown in the table below. Recommended measures are described in Section 7.

Table 6-17 Impact Summary for the Operations Phase

Impact	Spatial Scale	Temporal Scale	Impact Intensity	Severity
Fugitive emissions from Rice Processing Complexing operations (PM10)	1	3	3	Impact of moderate severity (moderate impact)
Emissions from delivery vehicles (HGV)	3	2	2	Impact of moderate severity (moderate impact)
Emissions from back up diesel generator.	1	1	2	Impact of low severity (negligible impact)

6.5.2 Soil & Groundwater

The main potential sources of pollution that may affect the quality of the soil and groundwater include:

- leaks and spills from the backup generator and fuel tank;
- spills from the use of cleaning materials used; and
- Storm water/rainwater.

6.5.2.1 Fuel Tank and Diesel Generator

During the operations phase, a backup diesel generator is installed in order to ensure that during the maintenance / breakdown if the Rice Processing Complex will need additional power supply, the backup diesel generator is able to provide for it.

The diesel generator will have the capacity of 500 KVA and the diesel storage tank for operations has not been finalized by the proponent as of the time of the IEE.

During this phase, spill may occur when the diesel tank is refilled. Fuel may leak from certain portion of the generator and leach to the soil and potentially onto the groundwater. Spills and leaks may leach to the underlying soil and may potentially impact on the groundwater. When

rain occurs, the impact of leaked fuel would be even greater as the rainwater would facilitate leaching of the fuel through the soil profile and down to the groundwater.

6.5.2.2 Machines

Machines and equipment is used for the Rice Processing Complex operations. If spills of oil and grease from the machine areas are left unattended and not regularly cleaned, then spills on the concrete floor may have the potential to contaminate the soil and groundwater.

6.5.2.3 Storm Water

Some places in Myanmar experience the occurrence of flood as a result of heavy rains in the mountain areas that flow into the flat lower terrain, making some areas serve as catch basin. However, these are intermittent and occur occasionally particularly during the start and / or end of the winter season.

Impact Summary

Potential soil and groundwater contamination is an issue if the storage area is not made impervious. Severity is estimated to be moderate if not mitigated. Oil spills and leaks from vehicles are considered to present minor impact. Limited number of vehicles is expected onsite.

Table 6-18 Impact summary from oil spills and leaks by vehicles

Impact	Spatial Scale	Temporal Scale	Impact Intensity	Severity
Leaks and spills from the backup generator and fuel tank	1	3	2	Impact of low severity (negligible impact)
Spills from the use of cleaning materials used	1	1	1	Impact of low severity (negligible impact)
Storm water/rainwater.	1	1	1	Impact of low severity (negligible impact)

6.5.3 Waste

The following table are the waste streams coming from the Rice Processing Complex operations.

Table 6-19 Waste streams coming from the Rice Processing Complex operations

Waste Water	Solid Waste
<i>Rice Processing Complexing</i>	
<i>Waste water from rice cleaning</i>	<ul style="list-style-type: none"> ◆ The light empty grain, mud balls, dust and Small Broken Rice ◆ Bran layer and Germ ◆ Large Broken Rice ◆ Rice with Mole, Yellowish and Darker Color Rice
<i>Diesel Generator</i>	
<i>Waste Oil</i>	<ul style="list-style-type: none"> ◆ Clean-up materials (such as rags); ◆ Drums, containers and tins with remains of diesel containers
<i>Office and Administrative offices</i>	
<i>Cleaning water and Black water</i>	<ul style="list-style-type: none"> ◆ MSW (food waste, office waste etc.)

6.5.3.1 Solid Waste from operations

Of these wastes, bran from the milling operations wastes are by far the largest. All solid waste shall be disposed of suitably, waste may be disposed through an accredited third party waste contractor or to another company that will use the waste as raw materials.

6.5.3.2 Waste water from rice cleaning

Although without process of using water for soaking the paddy in the milling process of project, if not properly managed the rice cleaning could result in water pollution and odor nuisance to local community. Entry of untreated wastewater in possible amount can increase the “nutrients” on the receiving body of water. Wastewater treatment may be considered prior to disposal thereto.

6.5.3.3 Sewage

In the expansion / construction phase, sewage generation was estimated to be 380 Liters per day. Less sewage generation is anticipated as the number of total staff will be 40 during the operation phase. Sewage was computed semi-quantitatively based on the common flush-toilet using only 0.42 US gallons (1.5 litres) of water per flush. An assumption of 2 toilet flushing per employee was used for calculation of the sewage generation per day, as detailed below.

Basis: 40 workers during operations

Total Estimated Sewage waste = 1.5 liters / toilet flush × 2 toilet flush / day × 40
Construction Workers
= 120 liters / day

For sludge composition in sewage waste, the factor of 0.11 kg/ employee (T. Hicks 2007: 2nd Ed. Handbook of Civil Engineering Calculation) and sludge density of 721 kg/ m³ (SI Metric Website: www.simetric.co.uk) was used as reference.

$$\begin{aligned}
 \text{Sludge in Sanitary Waste} &= 0.11 \text{ kg/ worker} \times 40 \text{ workers} \times 1/ 721 \text{ kg/ m}^3 \\
 &= 0.06 \text{ m}^3 \text{ per day or 6 liters per day} \\
 \text{Total Sewage} &= \text{Total Estimated Sewage waste} + \text{Sludge in} \\
 &\quad \text{Sanitary Waste} = 120 \text{ liters} + 6 \text{ liters} \\
 &= 126 \text{ liters per day}
 \end{aligned}$$

The wastewater produced is stored in a septic tank for collection once the tank is full. This is collected and disposed by an accredited waste management contractor (YCDC).

6.5.3.4 Hazardous Waste

The hazardous waste may represent significant risk to human health and environment if managed improperly. Adequate handling, temporary storage and disposal are required to reduce threat to human health and to prevent potential contamination of the soil/groundwater. A proper waste management protective measure needs to be taken in order to minimize impact on environment. Typical construction hazardous waste stream contains

- Clean-up materials (such as rags);
- Drums, containers and tins with remains of diesel containers; and
- Machinery lubricants.

6.5.3.5 Food Waste

To quantify the food waste generation during operation, a factor of 1.5 lb. (0.45kg)/ employee /day (Source: California Department of Resources Recycling and Recovery (CalRecycle) Website: Estimated Solid Waste Generation Rates for Commercial Establishments 2009) was used as reference. The calculation is shown below.

In operation phase:

$$\begin{aligned}
 \text{Estimated food Waste} &= 0.45\text{kg/ employee per day} \times 40 \text{ employees} \\
 &= 18 \text{ kg/day}
 \end{aligned}$$

Impact Summary

The unmitigated impact with regards to wastes generation during the operation of the Rice Processing Complex is considered to be as follows;

Table 6-20 Impact significance of waste generation during Rice Processing Complex operation phase

Impact	Spatial Scale	Temporal Scale	Impact Intensity	Severity
--------	---------------	----------------	------------------	----------

Solid Waste	1	2	1	Impact of low severity (negligible impact)
Sewage Water	1	1	1	Impact of low severity (negligible impact)
Hazardous Waste	1	2	2	Impact of low severity (negligible impact)
Food Waste	1	1	1	Impact of low severity (negligible impact)

With this assessment, mitigation measures are recommended to be implemented during operation activities in section 7.

6.5.4 Noise

The reprocessing plant will have an automated system to produce an estimated 160 tons of processed rice per day.

There is no significant noise during operations as all machines are electrical powered which are placed in enclosed areas.

The proponent will comply with the noise requirements set by the relevant the ministry.

Impact Summary

The unmitigated impact with regards to noise generation during the operation of the Rice Processing Complex is considered to be as follows;

Table 6-21 Impact significance of noise quality during Rice Processing Complex operation phase

Impact	Spatial Scale	Temporal Scale	Impact Intensity	Severity
Noise from Milling Operations	1	2	1	Impact of low severity (negligible impact)
Noise from Power generators	1	2	1	Impact of low severity (negligible impact)

6.5.5 Ecology

The introduction of this Rice Processing Complex will have a minor impact to the ecology of the area where the proposed Rice Processing Complex is located. The area is devoid of any significant fauna and floral population.

Air emissions shall be transient and limited within the Rice Processing Complex as the area is far from sensitive receptors. Particulate matter (PM₁₀) is controlled as the proposed Rice Processing Complex is a closed system wherein PM₁₀ is limited to within the plot.

Impact Summary

The unmitigated impact towards the ecological aspect during the operation of the Rice Processing Complex is considered to be as follows;

Table 6-22 Impact significance of ecological aspect during Rice Processing Complex operation phase

Impact	Spatial Scale	Temporal Scale	Impact Intensity	Severity
Ecology	1	2	2	Impact of low severity (negligible impact)

6.5.6 Resource Use

This rice mill will be supplied with power from the local power company. Water will be supplied by the three tubewells that have been installed on site.

6.5.7 Socio-economic

6.5.7.1 Vehicle movement

About 20-50 trucks will operate per week for the transportation of mill supplies; 10-15, for the distribution of products.

Since land transportation in the area is usually light, no significant increase in traffic congestion is expected for roads and streets in project area. However, people from the neighboring villages are expected to join the operational phase workforce making minimal increase in daily commuting traffic possible.

6.5.7.2 In-migration

Approximately 40 people are expected to join the mill's operational phase workforce. The employment is primarily offered to the local residents. On the other hand, the mill's raw materials will come from Hlaing Thar Yar area as well as from the delta region.

Consequently, a moderate influx of migrant population to the project location is expected due to the low country GDP, high demand for jobs, and the project site's proximity to a major metropolitan area despite the difficulty to commute to the area and the relatively small number of direct employment created by the company. Moreover, as the people from the delta region commute frequently to the area, the booming local economy will invite in-migrants to start businesses in the region. As a result conflict among the in-migrants and the local communities, increased crime rates and competition among businesses can occur.

6.5.7.3 Local economy

Approximately 40 people are expected to join the mill's operational phase workforce. The employees can be both local and in-migrants. The mill's raw materials will come from Hlaingtharyar area as well as from the delta region.

As a result, the increase in employment among the local communities will raise the overall socio-economic status of the region. Moreover, local farmers and dealers in the area will receive competitive rates for their products as monopoly of the rice industry in the area is reduced. Currently only small shops and street vendors exist in the vicinity of the project area. This is highly likely to change as the mill starts operating. The area will experience influx of frequent commuters and in-migrants that will depend on the local businesses for their basic needs such as meals, snacks and personal care supplies. Vehicles coming to the area will need to be maintained increasing business opportunities for the mechanics and vehicle equipment stores in the area.

6.5.7.4 Child labor

For the whole of Yangon Region, the total population of those between the age of 10 and 14 is 644,339. The total number of employed children between the ages of 10 and 14 for the whole of Yangon is 49,267 this represents 7.65% of the total population of children between the age of 10 and 14. For the West of Yangon, where Hlaingtharyar township is located, there is a total of 61,754 children between that age bracket. If we are to calculate the estimated number of children in that age bracket working or employed, then that is approximately 4,722 children employed within that age bracket.

Moreover, most of the township households earn between 100K-200k kyats and the residents mostly finished primary education.

As the mill hires the operational phase work force, child labor can become an issue if no proper regulation exists. This is due to the high percentage of under 14 population, low household income and high dropout rate from school in the area. Moreover, because of the increased economic activity in the region, local businesses will likely seek cheap child labor. The issue of child labor is expected to be an impact of high severity during the operational phase due to the large size of workforce needed, the booming economy in the region and the mill's dependency on suppliers and dealers from both Hlaingtharyar Township and Yangon in general.

6.5.7.5 Community safety

During the operation phase, an increased number of trucks and motorized vehicles will operate on the streets and roads in the project area. Crime rate in the project area may increase due to the influx of frequent commuters and in-migrants in the area. The mill will produce environmental pollutants such as particulate matters and solid wastes. The project will not employ any hazardous substances and has proper chemical and spill management procedures.

As there are no designated playground and parks in the project area, it is very likely that children will play on the neighborhood streets and roads, putting them at risk of traffic accidents. Pollution due to the emissions from vehicles movement within the community may emit pollutants such as lead can seriously affect the local communities in general and the vulnerable population in particular.

6.5.7.6 Occupational safety

The major component during the operational phase will be the milling operations. The project expects to employ 40 persons during the operational phase.

Firstly, mill operation produces particulate matters that can adversely affect the respiratory system of the employees. Moreover, heavy lifting such as transportation of rice bags can deteriorate the workers' musculoskeletal health.

Rice mills have a history of dust cloud explosion. Stringent safety measures will be put in place to prevent the occurrence of such incidents (vis a vis regular cleaning of the mill and the warehouses).

Impact Summary

Impact	Spatial Scale	Temporal Scale	Impact Intensity	Severity
Vehicle movement	4	4	3	Impact of high severity (high impact)
In-migration	2	4	3	Impact of moderate severity (moderate impact)
Local economy	4	4	4	Impact of high severity (high impact)
Child labor	4	4	3	Impact of high severity (high impact)
Community safety	4	4	4	Impact of high severity (high impact)
Occupational safety	1	4	4	Impact of moderate severity (moderate impact)

6.5.8 Decommissioning Phase

At present the rice mill is operations, the proponent needs to add two more warehouses to store milled rice before shipping. It is assumed that the life span of the rice mill may be 25- 50 years, then at the end of the 25- 50 year period, the owner may either refurbish or decommission it.

If for any reason it is decided that they will not continue with the operations of the rice mill, then the proponent will decide to convert it to another business that will be feasible. The following sections identify the potential impacts that decommissioning could create.

It should be noted that as part of the decommissioning / dismantling phase Proponent would appoint a contractor that has experience in the dismantling of an agro-industrial facility (as the

rice mill is fully automated). This contractor would abide by all relevant local and national guidelines with regard to decommissioning practices and where necessary would apply international best practice. At all times, they would report to Project Proponent, who would monitor their compliance. This would enable Proponent to ensure that decommissioning was performed with minimal contamination to the environment and in the safest way possible. A decommissioning environmental management plan must be prepared indicating the disposal and management of demolition wastes from the building and other related structures.

6.5.9 Air Quality

During the decommissioning phase it is unlikely that activities would result in significant impacts to the air environment. Given the current activities performed at the facility there are no areas where there could be the potential for release of harmful particles. However, if the diesel fuel tank used as fuel for backup generators are not handled correctly there could be the potential for release of gas/fumes into the atmosphere.

There would be an increase in the vehicle movements during the decommissioning phase compared to the number of vehicle movements during the operational phase. However, the increase is only temporary and short term. Thus, the impact to the ambient air quality would also be short term and insignificant.

6.5.10 Soil & Groundwater

At the time of decommissioning there is the potential that Project Proponent would have empty, part full or full oil containers which would have to be disposed of or sold as per waste guidelines. Any part of the area that had become contaminated would also have to be remediated and any contaminated material would have to be disposed of following Best Practice and in accordance with the MONREC's regulations.

6.5.11 Waste

6.5.11.1 Hazardous Waste

At the time of decommissioning there is the potential that Project Proponent would have empty, part full or full oil containers which would have to be disposed of or sold as per waste guidelines. Any part of the area that had become contaminated would also have to be remediated and any contaminated material would have to be disposed of following Best Practice and in accordance with the MONREC's regulations.

6.5.11.2 Liquid Waste

It is unlikely that the decommissioning phase will result in the generation of significant amounts of liquid wastes. It is not expected that there would be cleaning performed with water.

6.5.11.3 Solid Waste

At the time of decommissioning, solid waste from the offices would probably be generated in the form of paper and stationery, boxes, packaging materials, used pens, and junk or old furniture.

In addition, any damaged furniture may be disposed of. Scrap metal kept stored within the site may also be disposed of. Aside from office wastes, significant amount of solid wastes may also be generated if Proponent decides to demolish their built structures or buildings. Solid wastes such as broken concrete blocks and steel reinforcements are generated. Along with bulk concrete slabs, finer debris and dusts will also be produced during demolition.

6.5.12 Noise

Demolition work for workshop sheds and office building has the potential to generate moderate to high levels of noise from the demolition activities and the movement of machineries (e.g. trucks and cranes). It can be expected that the noise during demolition is significantly greater than noise generated during the operational phase by Rice Processing Complex activities or from trucks visiting the facility. However, it should be noted that the noise level during demolition is noncumulative, which means it is only temporary and short term lasting during the demolition/decommissioning phase.

6.5.13 Ecology

It is unlikely that the decommissioning of the facility would have any impact on the ecology of the site or the immediate surrounding area. The site is devoid of any ecological significance and by decommissioning the facility this will not be changed. Should the proponent leave the site they may offer the site for lease to other companies that will undertake activities that should be compatible to the designated land use. During the interval between the completion of the decommissioning of the proponent and the construction of the new venture, birds and other local wildlife may roam the area and a short term use of habitat will result.

6.5.14 Resource Use

The actual decommissioning activities are unlikely to use much higher amounts of electricity and water than used during normal daily operations at the facility. Taking into consideration that decommissioning works will be performed only during daytime; the projected amount of electricity consumption for equipment would be minimal. It is possible that the decommissioning activities will be mostly manually performed by workers of the appointed contractors. Water will be utilized for drinking and domestic use (e.g. sanitation) however it is the contractor's responsibility to make the arrangements for providing for safe water supply during decommissioning phase.

After the decommissioning of the proponent, the demand for water will be less due to the loss in the demand from the decommissioned facility. Similarly the electricity/power consumption will be reduced with the closing down of the facility at the end of its life.

6.5.15 Socio-economic

6.5.15.1 Local economy

At the end of the operation phase, the mill will stop purchasing products from the farmers and dealers. As a result, the number of people commuting to the area will fall significantly. Eventually, the mill will stop employing the whole project workforce.

The significant fall in demand of whole rice grains and parboiled rice due to the mill closure will adversely affect the local farmers and dealers' income. Other rice buyers will lower the purchasing price because of the lack of competition in the area. Moreover, 71 employees from the mill will lose income due to unemployment. Additionally, businesses in the area will expect a drop in the number of customers as less people travel to the area.

6.5.15.2 Community and occupational safety

Crimes related to unemployment can happen during the decommissioning phase. However, the extent is expected to be moderate to insignificant due to the low population density of the region. Hazards at work during the phase include personal injury, inhalation of toxic materials, electrocution, fire, explosion, fall from heights, crushing, machinery tipping/rolling, noise and trips/slips/falls.

Impact summary

Impact	Spatial Scale	Temporal Scale	Impact Intensity	Severity
Vehicle movement	4	4	3	Impact of high severity (high impact)
Community safety	2	2	4	Impact of moderate severity (moderate impact)
Occupational safety	1	2	4	Impact of low severity (negligible impact)

7. ENVIRONMENTAL MANAGEMENT PLAN

Proper implementation of a comprehensive Environmental Management plan (EMP) will ensure that the proposed Rice Processing Complex meet regulatory and operational performance (technical) criteria. This section describes the modalities provided in the project for the implementation of the proposed mitigation measures to its potential negative impacts. It proposes the institutional responsibilities for the implementation of the mitigation measures, the implementation indicators, the time frame for monitoring and follow-up and also budget for the implementation activities.

7.1 Objectives of the Environmental Management Plan

The purpose of the Environmental Management Plan for the construction and operations of the Rice Processing Complex is to ensure that sufficient procedural measures are in place to reduce associated adverse impacts to acceptable or manageable levels. This environmental management plan aims at recommending improvements to management structures and procedures to ensure that future management recognizes the impacts assessed in this IEE.

7.1.1 Environmental Management Plan for Expansion/ Construction Phase

Construction Environmental Management Plan (CEMP) provides specific environmental guidance for the expansion / construction phase of a project.

The intention of the CEMP is to ensure that activities borne from the expansion / construction phase of the project are managed and mitigated in order to ensure that the impacts will be within applicable local and international standards.

7.2 Construction Environmental Management Plan (CEMP) Framework

The proposed organizational structure for the construction of the proposed project is shown in the diagram below. The arrows indicate the proposed communication channels throughout the execution of the construction phase between Management, its contractors and subcontractors.

7.3 Overall Budget for Implementing the EMP

The overall estimated budget for the implementation of the mitigation measures is around 10,000,000 Kyat per year (including around 5,000,000 Kyat for environmental monitoring plan and 5,000,000 Kyat for implementing sub-plans). The cost of implementing the EMP is difficult to quantify as many of the mitigation measures to be adopted for the EMP are linked to the overall operational cost of the Project.

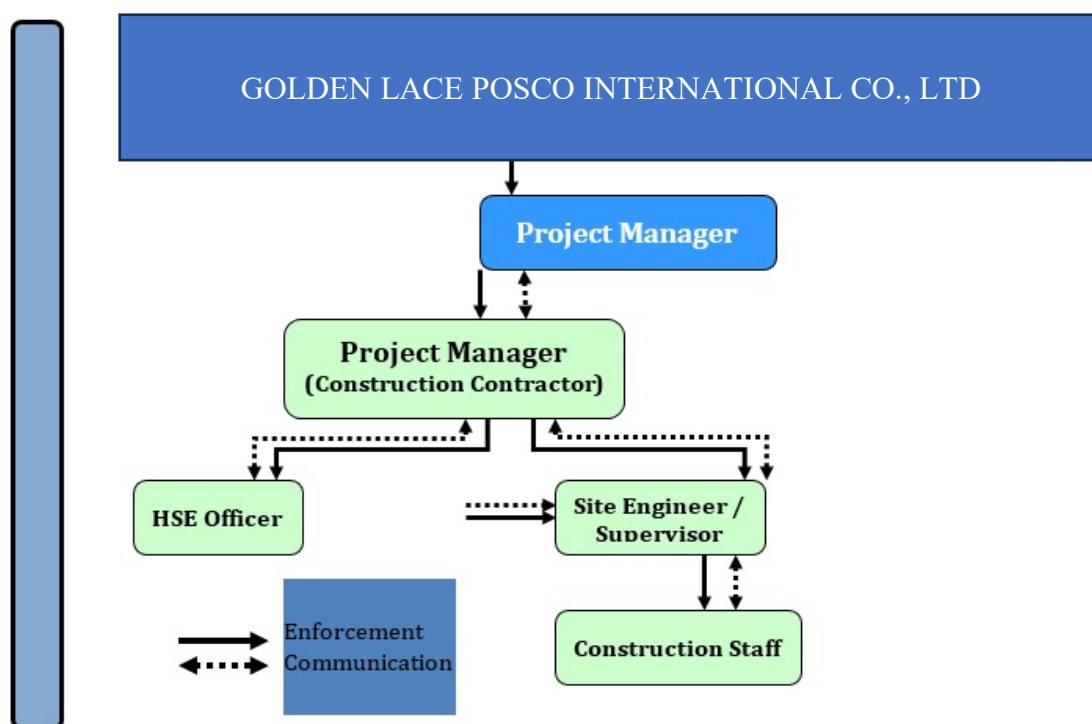


Figure 7-1 Organizational structure for construction phase

It is recommended that all environmentally relevant internal communication throughout construction phase duration be carried out according to this structure to ensure its effectiveness. Environmental aspects of the project is communicated through regular meetings.

It is recommended that all personnel working throughout the construction of the Rice Processing Complex (regular staff and contractors) should strictly follow the roles and responsibilities described in Table 7-1.

Table 7-1 Roles and Responsibilities for Construction Phase

Role	Recommended Environmental Responsibilities
Mill Manager (Rice Processing Complex)	<ul style="list-style-type: none"> Overall responsibility for environmental performance during construction of the proposed project; Overall responsibility for enforcement of environmental measures and compliance with all legal regulations; Perform regular audits of the construction site; Communicate environmental aspects of the project with contractors management; Follow up any major incident or non-compliances with the contractors HSE Officer Review the contractor's monthly Environmental Report.

Role	Recommended Environmental Responsibilities
	<ul style="list-style-type: none"> Review and approve the updates on the Construction Environmental Management Plan (CEMP). Make sure that all environmental aspects considered in the IEE are covered in the CEMP.
Construction Contractor	
Project Manager	<ul style="list-style-type: none"> Overall responsibility for contractor and supplier environmental performance on site; Communicate environmental aspects of the project with the Rice Processing Complex Management Allocate sufficient resources to ensure compliance and effectiveness of CEMP; Review the reports of any environmental issues that may arise; Ensure that any complaints are addressed immediately and the same to be communicated to the Client within 24 hours of receiving the complaint; Ensure all employees, subcontractor employees and visitors under HSE orientation on safety awareness; Carry out document control and review of monthly Environmental Report, audit reports, incident reports and community complaints; Pass onto the Client the monthly Environmental Report.
HSE Officer	<ul style="list-style-type: none"> Responsible for environmental performance in the site for day to day basis; Prepare, implement, manage, review and update the CEMP; Ensure CEMP complies with local requirements, relevant international regulations and International Best Standards, and measures suggested in this document; Check CEMP compliance with legal requirements on a regular basis; Perform audits on a regular basis according to monitoring checklist approved by the Client that complies with all relevant legislation and policies; Ensure environmental meetings are held on a regular basis; Communicate and advise the project manager and subcontractor of all environmental aspects; Produce and implement corrective action plans for any incident and non-compliance to remediate the issue. The plan should include actions to prevent incidents or non-compliance in the future. If environmental damage has occurred adequate steps for rehabilitation need to be included; Maintain a register of all environmental complaints, incidents and non-compliances. This should provide the date, a brief description of complaint/incident/non-compliance and any corrective actions taken; Coordinate with Local Environmental Authorities and accompany on visits to the site; Develop and implement environmental training/awareness;

Role	Recommended Environmental Responsibilities
	<ul style="list-style-type: none"> Produce a monthly Environmental report for the Client, detailing compliance, any incidents and non-compliances, any alterations in the CEMP or mitigation measures. Pass the report to the project manager for review.
Engineers	<ul style="list-style-type: none"> Undergo environmental training; Understand environmental procedures and environmental aspects relevant to construction activities; Report to the Site Manager/ HSE Officer all incidents and non-compliances; Ensure that CEMP is followed and adhered to by the subcontractor /construction staff.
Construction Staff	<ul style="list-style-type: none"> Undergo environmental training; Understand environmental procedures and environmental aspects relevant to activities; In case of any accident or non-compliance report to Contractor's Project Manager / Site Engineers; and Comply with the CEMP.

Table 7-2 Environmental Management Plan Measures for the Construction Phase

Potential Impact	Proposed Mitigating Measures	Role and Responsibility of Construction Contractor	Time table for implementation	Cost of the mitigation measure	Financial Guarantee
Noise Management Plan					
Impairment of hearing capacity due to the exposure to high noise levels (Occupational Health)	<ul style="list-style-type: none"> No noisy activity to be carried out during night-time. Ensure proper PPE to be provided for the workers; Turn off the engines of heavy machinery when not in use; Provide noise reduction muffs for the equipment with high noise levels; Conduct audiometric test for the workers who continuously work in the high noise level areas (contractors). 	<p>The Site Engineer will:</p> <ul style="list-style-type: none"> Ensure that noise level meet guidelines and if necessary put in place noise control measures. Ensure the PPEs provided are sufficient/ appropriate for the particular work. No unnecessary blowing of horns at anytime. 	<ul style="list-style-type: none"> Before construction commences all the Preventive measures should be in place. During the construction phase the use of PPE should be practiced. 	<ul style="list-style-type: none"> None PPEs are in stock 	<ul style="list-style-type: none"> Estimated budget allocation for noise level Management Plan is already included in EMPs.
Waste Management Plan					
Material Solid Waste/Hazardous Waste	<ul style="list-style-type: none"> Segregation of hazardous waste from solid waste shall be performed; The waste in a dedicated area with all bins 	<p>The Site Engineer will:</p> <ul style="list-style-type: none"> Liaise with the hazardous waste contractor and check the tip receipts. 	<ul style="list-style-type: none"> Entire construction period 	<ul style="list-style-type: none"> Cost of collectio of normal waste skips by local waste management company (6 cubic meters skips) 	<ul style="list-style-type: none"> Estimated budget allocation for Waste Management Plan is already included in EMPs.

Potential Impact	Proposed Mitigating Measures	Role and Responsibility of Construction Contractor	Time table for implementation	Cost of the mitigation measure	Financial Guarantee
	<p>securely covered Dispose the wastes immediately;</p> <ul style="list-style-type: none"> Compile trip receipts from the waste contractor once a month to ensure that they are disposing of the waste correctly. 	<ul style="list-style-type: none"> Produce the log template for checking the waste disposal compliance. Perform the visual inspection of the waste containers and complete the relevant log. The logs are the proof that the inspections have been performed. 			
Water Quality	<ul style="list-style-type: none"> Vegetated swales and storm water management drains will offer separation to disturbed or exposed soil Grey water (spent water from washing and shower) and water used for wheel washing is recycled after removing sediments. Primary treatment may be used to treat the grey water. 	<ul style="list-style-type: none"> Ensure that all storm drain are cleared of debris so as to ensure free flow of water. All grey water is reused, where practicable. Ensure that all septic tanks' capacity are adequate and impervious to leaks. 	<ul style="list-style-type: none"> Entire construction period 	<ul style="list-style-type: none"> Negligible as it is part of the construction cost. 	<ul style="list-style-type: none"> Estimated budget allocation for Water Management Plan is already included in EMPs.

Potential Impact	Proposed Mitigating Measures	Role and Responsibility of Construction Contractor	Time table for implementation	Cost of the mitigation measure	Financial Guarantee
	<ul style="list-style-type: none"> Septic tanks and soakage pits is constructed having adequate capacity Conducting regular training, monitoring, and inspection scheme together with keeping track of water uses minimizes wastes and leaks from faulty connections and faucets Remaining sludge is disposed as instructed by the environmental regulations. 	<ul style="list-style-type: none"> Ensure regular visual checks for any leaks that may be present. Ensure that waste management plan is implemented. 			
Air Quality Management					
Emissions from Vehicles and equipment usage	<ul style="list-style-type: none"> Ensure proper working condition of the delivery trucks entering the area; Use only low sulfur fuel for the vehicles and equipment; 	<p>The Site Engineer will:</p> <ul style="list-style-type: none"> Ensure proper working condition of vehicles. Report the incidents to the Project Manager if any. Weekly inspect the site and the Housekeeping of 	<ul style="list-style-type: none"> During construction 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Estimated budget allocation for Air Quality Management Plan is already included in EMPs.

Potential Impact	Proposed Mitigating Measures	Role and Responsibility of Construction Contractor	Time table for implementation	Cost of the mitigation measure	Financial Guarantee
		the area.			
Particulate and toxic gas emissions from cutting and welding activities	<ul style="list-style-type: none"> Make sure proper personal protective equipment like face masks and goggles are used while working. 	<p>The Site Engineer will:</p> <ul style="list-style-type: none"> Make sure that safe working conditions are provided for the workers; Assure the provision of proper PPE for the workers; Report the incidents if any. <p>The Project Manager will:</p> <ul style="list-style-type: none"> Inspect and evaluate all the safety aspect of the welding; Ensure the PPE provided are appropriate for the activity and meets the standards specifically 	<ul style="list-style-type: none"> During welding operations 	<ul style="list-style-type: none"> Cost of PPE for welding 	<ul style="list-style-type: none"> Estimated budget allocation for Air Quality Management Plan is already included in EMPs.

Potential Impact	Proposed Mitigating Measures	Role and Responsibility of Construction Contractor	Time table for implementation	Cost of the mitigation measure	Financial Guarantee
		<p>mentioned for the activities.</p> <ul style="list-style-type: none"> Keep record of all the incidents and maintenance history of the equipment. 			
Dust from soil disturbances (e.g. earthworks) and vehicle movement.	<ul style="list-style-type: none"> Apply dust suppression by spraying water to the project site, especially in areas where the excavation is carried out. Ensure that dust are localized and will not affect the adjacent areas where sensitive receptors are located. Dust suppression can be done using water trucks. Cover stockpiles of sand, soil and similar material or surround them with wind breaks. Cover trucks hauling dirt and debris to 	<ul style="list-style-type: none"> Ensure that regular dust suppression activities are performed on a regular basis. Ensure that all trucks hauling soil are adequately protected. 	<ul style="list-style-type: none"> Throughout the construction phase 	<ul style="list-style-type: none"> Cost of Water and rent of trucks. 	<ul style="list-style-type: none"> Estimated budget allocation for Air Quality Management Plan is already included in EMPs.

Potential Impact	Proposed Mitigating Measures	Role and Responsibility of Construction Contractor	Time table for implementation	Cost of the mitigation measure	Financial Guarantee
	reduce spillage on to paved roads surface or have adequate free board to prevent spillage.				
Soil and Ground Water					
Spills/ leaks from Fuel Equipment and Vehicles	<ul style="list-style-type: none"> Ensure only well maintained equipment and vehicles used for the construction / installation phase. Daily inspection of the project site and completion of logs. Bunds or liners under Fuelstorage tanks (if present) 	<p>The Site Engineer will:</p> <ul style="list-style-type: none"> Perform the visual inspections and complete the relevant log. The logs are the proof that the inspections have been performed; Complete the incident report should any leak occur. 	<ul style="list-style-type: none"> During Construction 	<ul style="list-style-type: none"> Cost of Collection of Hazardous waste collection 	<ul style="list-style-type: none"> Estimated budget allocation for Soil and Water Quality Management Plan is already included in EMPs.
Oils and Lubricants	<ul style="list-style-type: none"> Daily visual inspection of storage areas for leaks from containers, completion of log; Daily visual inspection for incorrectly stored containers, completion of log; Ensure containers only stored in designated 	<p>The Project Manager will:</p> <ul style="list-style-type: none"> Maintain all the records of the logs; Inspect weekly the storage areas for the assurance of the spill/leak proof system; 	<ul style="list-style-type: none"> During Construction 		<ul style="list-style-type: none"> It is included in the investment budget.

Potential Impact	Proposed Mitigating Measures	Role and Responsibility of Construction Contractor	Time table for implementation	Cost of the mitigation measure	Financial Guarantee
	<p>areas, completion of log;</p> <ul style="list-style-type: none"> Ensure empty / full containers are only stored in designated areas, completion of log; Ensure the stored wastes (e.g. empty / used paints and thinner) are properly collected and handled by the authorized personnel daily. 	<ul style="list-style-type: none"> Make sure proper housekeeping is done throughout the site. 			
Soil erosion and sediment control	<ul style="list-style-type: none"> Careful planning process with regards to establishing work zones, defining phases of construction, and exercise minimize soil disturbance during the construction. Enhance Construction management procedures involving scheduling of earth removal and developing the sequence and 	<ul style="list-style-type: none"> Ensure that all work schedule are defined and phased. Construction management procedures shall be developed before the start of the work. Ensure that all silt fences are strategically 	<ul style="list-style-type: none"> Before the start of construction, and where required, throughout the construction phase. 	<ul style="list-style-type: none"> Materials for silt fences and labor cost. 	<ul style="list-style-type: none"> It is included in the investment budget.

Potential Impact	Proposed Mitigating Measures	Role and Responsibility of Construction Contractor	Time table for implementation	Cost of the mitigation measure	Financial Guarantee
	<p>methods or optimum soil protection plans.</p> <ul style="list-style-type: none"> ▪ Silt fences is strategically placed in order to minimize surface runoffs especially during the monsoon season. ▪ Where practicable, topsoil is saved and used as backfill later. 	installed around the construction site.			

7.4 Operational Environmental and Social Management Plan

The organizational structure for the operational phase is shown in Figure 7-2 below. The following table presents the roles mentioned in the organizational diagram with the operational hierarchy in the organization. Table 7-3 is the Environmental Management Plan and Measures for the Operations Phase while is the Social Management Plan and Measures for the Operations Phase.

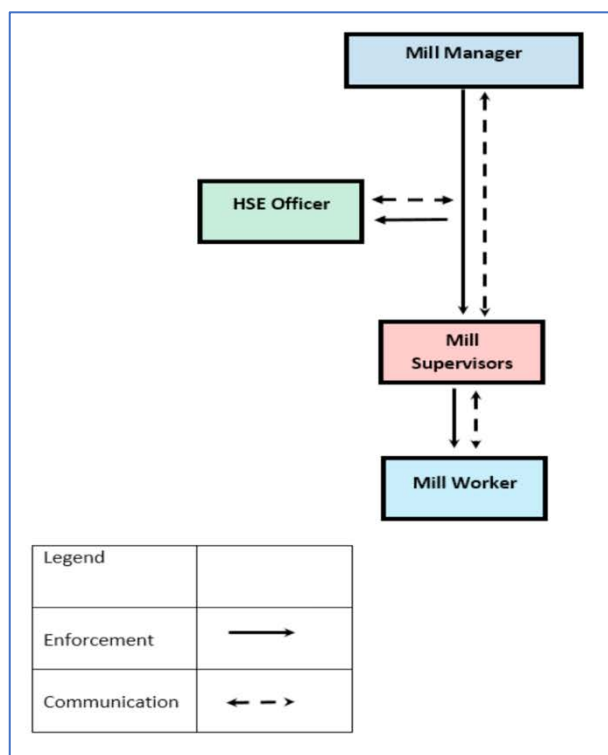


Figure 7-2 Proposed Organization Structure for the Operational Phase

Table 7-3 Roles and Responsibilities for Operations Phase

Role	Recommended Environmental Responsibilities
Mill Manager (Rice Processing Complex)	<ul style="list-style-type: none"> Overall responsibility for environmental performance during operations of the proposed project; Overall responsibility for enforcement of environmental measures and compliance with all legal regulations; Perform regular audits of the Rice Processing Complex operations; Follow up any major incident or non-compliances with the HSE Officer Review the monthly Environmental Report. Review and approve the updates on the Operations Environmental Management Plan (OEMP). Make sure that all environmental aspects considered in the IEE are covered in the OEMP.
Mill Supervisors	<ul style="list-style-type: none"> Undergo environmental training;

Role	Recommended Environmental Responsibilities
	<ul style="list-style-type: none"> Understand environmental procedures and environmental aspects relevant to operational activities; Report to the HSE Officer all incidents and non-compliances; Ensure that OEMP is followed and adhered to by all staff.
Mil Workers	<ul style="list-style-type: none"> Undergo environmental training; Understand environmental procedures and environmental aspects relevant to activities; In case of any accident or non-compliance report to Mill supervisors / HSE officer and Comply with the OEMP
HSE Officer	<ul style="list-style-type: none"> Responsible for environmental performance in the site for day to day basis; Prepare, implement, manage, review and update the CEMP; Ensure CEMP complies with local requirements, relevant international regulations and International Best Standards, and measures suggested in this document; Check CEMP compliance with legal requirements on a regular basis; Perform audits on a regular basis according to monitoring checklist approved by the Client that complies with all relevant legislation and policies; Ensure environmental meetings are held on a regular basis; Communicate and advise the project manager and subcontractor of all environmental aspects; Produce and implement corrective action plans for any incident and non-compliance to remediate the issue. The plan should include actions to prevent incidents or non-compliance in the future. If environmental damage has occurred adequate steps for rehabilitation need to be included; Maintain a register of all environmental complaints, incidents and non-compliances. This should provide the date, a brief description of complaint/incident/non-compliance and any corrective actions taken; Coordinate with Local Environmental Authorities and accompany on visits to the site; Develop and implement environmental training/awareness; Produce a monthly Environmental report for the Client, detailing compliance, any incidents and non-compliances, any alterations in the CEMP or mitigation measures. Pass the report to the project manager for review.

Table 7-4 Environmental Management Plan and Measures for the Operations Phase

Potential Impact	Proposed Mitigating Measures	Time table for implementation	Cost of the mitigation measure	Financial Guarantee
Air Quality				
Fugitive emissions from Rice Processing Complexing operations (PM10)	<ul style="list-style-type: none"> Ensure that the whole milling plant is suitably covered to limit / prevent the windblown dusts / PM10 from dispersing Regular housekeeping / cleaning should be performed in order to remove dust that have accumulated within the plant. Fugitive emission control system shall be installed in in areas where the source of the fugitive emissions has been identified. The fugitive emission control should be adequate in order to control the release of the fugitive emissions to the receiving environment. <p>The following are the areas where control is required:</p> <ul style="list-style-type: none"> Unloading and Conveying Section, Raw rice /brown rice (white / parboiled) rice cleaning Section, Milling Section 	<ul style="list-style-type: none"> Before operating the mills 	<ul style="list-style-type: none"> Included as part of engineering design 	<ul style="list-style-type: none"> Estimated budget allocation for Air Quality Management Plan is already included in EMPs.

Potential Impact	Proposed Mitigating Measures	Time table for implementation	Cost of the mitigation measure	Financial Guarantee
Emissions from delivery High Goods Vehicles (HGV)	<ul style="list-style-type: none"> All trucks transporting raw rice /brown rice (white / parboiled) , bran and milled rice should be well maintained and should be in good running condition. All trucks carrying raw rice /brown rice (white / parboiled) from suppliers and milled rice to clients should properly cover the material to prevent wind whipping. 	<ul style="list-style-type: none"> During Operations 	<ul style="list-style-type: none"> Minimal this is part of the prequalification requirement as third-party transport contractor. 	<ul style="list-style-type: none"> Estimated budget allocation for Air Quality Management Plan is already included in EMPs.
Emissions from back up diesel generator	<ul style="list-style-type: none"> Ensure suitable maintenance of diesel generators. Ensure that maintenance records are available on site when required for audit. 	<ul style="list-style-type: none"> During operation 	<ul style="list-style-type: none"> Minimal cost as this is part of the prequalification requirement as third -party contractor. 	<ul style="list-style-type: none"> Estimated budget allocation for Air Quality Management Plan is already included in EMPs.
Soil and Groundwater				
Leaks and spills from the backup generator and fuel tank	<ul style="list-style-type: none"> Ensure that equipment that is used have no oil/fuel leaks. If any machines/vehicles/equipment are found to have any leaks they should not be used. No maintenance (where practicable) of equipment should be performed onsite that can potentially 	<ul style="list-style-type: none"> During operations 	<ul style="list-style-type: none"> Minimal cost as this is part of the prequalification requirement as third - party contractor. 	<ul style="list-style-type: none"> Estimated budget allocation for Water Quality Management Plan is already included in EMPs.

Potential Impact	Proposed Mitigating Measures	Time table for implementation	Cost of the mitigation measure	Financial Guarantee
	contaminate the soil and groundwater.			
Spills from the use of cleaning materials used.	<ul style="list-style-type: none"> The storage of fuel should be in a dedicated area provided with drip trays / bund walls with impermeable flooring. Containment in case of a spill should be in place. 	<ul style="list-style-type: none"> During operations 	<ul style="list-style-type: none"> Minimal cost as this is part of the prequalification requirement as third-party contractor. 	<ul style="list-style-type: none"> Estimated budget allocation for Water Quality Management Plan is already included in EMPs.
Storm water/rainwater.	<ul style="list-style-type: none"> Good and adequately maintained drainage to facilitate run-off and minimize the likelihood of flooding 	<ul style="list-style-type: none"> Before operations 	<ul style="list-style-type: none"> Included as part of engineering design 	<ul style="list-style-type: none"> Estimated budget allocation for Water Quality Management Plan is already included in EMPs.
Waste				
Solid Waste	<ul style="list-style-type: none"> Ensure sufficient number of proper sanitary facilities provided for employees. The sewage should be collected and disposed by an approved contractor. Wastes produced from the office areas, e.g. paper waste, should be recycled if possible; 	<ul style="list-style-type: none"> During operations 	<ul style="list-style-type: none"> Minimal cost as this is part of the prequalification requirement as third-party contractor. 	<ul style="list-style-type: none"> Estimated budget allocation for Waste Management Plan is already included in EMPs.

Potential Impact	Proposed Mitigating Measures	Time table for implementation	Cost of the mitigation measure	Financial Guarantee
	<ul style="list-style-type: none"> Wastes in general in the facility should be properly segregated for easier collection and disposal Ensure that all trash containers in the mill are properly sealed at all times to prevent waste being blown and scattered. Adopt the 4 Rs of waste management: Reduce, Reuse, Recover and Recycle. Reducing the amount of waste will result in savings for the company in terms of the resources to be used in disposing the wastes. By recovering, reusing and recycling, additional savings with materials is realized. 			
Wastewater from raw rice /brown rice (white / parboiled) rice cleaning	<ul style="list-style-type: none"> Recycle where practicable all wastewater produced from the milling operations 	<ul style="list-style-type: none"> Before operations and within operations phase 	<ul style="list-style-type: none"> Minimal as this is included as part of the training cost. 	<ul style="list-style-type: none"> Estimated budget allocation for Wastewater Management Plan is already included in EMPs.
Sewage Water	<ul style="list-style-type: none"> Ensure that septic tanks capacity are adequate to store sewage waste. 	<ul style="list-style-type: none"> Before operations 	<ul style="list-style-type: none"> Included as part of engineering design 	<ul style="list-style-type: none"> Estimated budget allocation for Wastewater Management Plan is

Potential Impact	Proposed Mitigating Measures	Time table for implementation	Cost of the mitigation measure	Financial Guarantee
				already included in EMPs.
Hazardous Waste	<ul style="list-style-type: none"> Ensure segregation of hazardous waste from non- hazardous waste. Ensure that all hazardous was containers are suitably stored and labelled. Ensure that disposal of hazardous was is as per local environmental requirement. 	<ul style="list-style-type: none"> During operations 	<ul style="list-style-type: none"> Minimal cost as this is part of the prequalification requirement as third -party contractor. 	<ul style="list-style-type: none"> Estimated budget allocation for Waste Management Plan is already included in EMPs.
Food Waste	<ul style="list-style-type: none"> Food wastes and food containers should be properly disposed to prevent pest infestation of the area (flies, rats, etc.) Suitable disposal of all food waste materials. Ensure that only accredited contractors will dispose of all waste materials. 	<ul style="list-style-type: none"> During operations 	<ul style="list-style-type: none"> Minimal cost as this is part of the prequalification requirement as third -party contractor. 	<ul style="list-style-type: none"> Estimated budget allocation for Waste Management Plan is already included in EMPs.
Noise				
Noise from Milling Operations	<ul style="list-style-type: none"> All noise producing machineries / equipment (particularly the milling 	<ul style="list-style-type: none"> During operations 	<ul style="list-style-type: none"> Included as part of engineering design 	<ul style="list-style-type: none"> Estimated budget allocation for Noise Level Management

Potential Impact	Proposed Mitigating Measures	Time table for implementation	Cost of the mitigation measure	Financial Guarantee
	<p>machineries) is properly maintained to reduce noise levels.</p> <ul style="list-style-type: none"> ▪ Vehicular trips should be performed only during daylight hours in order to limit the impacts of any increased noise generated on external receptors and for future occupancy of neighbouring plots; ▪ Implement noise reduction measures (e.g. enclosure for the mills, provision of plot boundary walls) if noise level exceeds 70 dB (A) at the fence line. ▪ Employees working near high noise equipment should be equipped with earplugs or earmuffs. ▪ Regular medical hearing ability test should be done for the employees working near the high noise level equipment. ▪ Consultation with nearb residential areas if extreme levels of noise are predicted 			Plan is already included in EMPs.

Table 7-5 Social Management Plan

Potential Impact	Proposed Mitigating Measures	Relevant personnel and responsibilities	Time table for implementation	Cost of the Mitigation measure	Financial Guarantee
Operational phase (The project construction is estimated to be completed by mid 2018 and the operation phase will begin immediately after that)					
In-migration	<ul style="list-style-type: none"> Employment preference is given to the local residents 	<ul style="list-style-type: none"> Golden Lace POSCO International Co., Ltd HR team will develop a local hiring plan 	<ul style="list-style-type: none"> 6 months before the beginning of the employment of the operational workforce 	<ul style="list-style-type: none"> Cost of developing the local hiring plan 	<ul style="list-style-type: none"> Estimated budget allocation for Social Management Plan is already included in EMPs.
	<ul style="list-style-type: none"> Build capacity of the local communities to be suited for the operational phase employment needs 	<ul style="list-style-type: none"> Golden Lace POSCO International Co., Ltd HR and CSR teams will develop the capacity building programs 	<ul style="list-style-type: none"> 6 months before the beginning of the employment of the operational phase workforce 	<ul style="list-style-type: none"> Cost of providing the capacity building programs 	<ul style="list-style-type: none"> To be included in the CSR budget by 2% of Project Profit.
	<ul style="list-style-type: none"> Develop staff housing for the migrant workers to prevent shortage of housing in the project area Reinforce non-tolerance policy for disrespecting the local culture and norms and a transparent system of investigating the problems 	<ul style="list-style-type: none"> Golden Lace POSCO International Co., Ltd logistics team will evaluate the housing situation in the project area and collaborate with the HR and construction teams to determine the capacity of the staff housing Golden Lace POSCO International Co., Ltd 	<ul style="list-style-type: none"> During the construction phase, at the beginning of the operational phase and annual monitoring of the housing situation in the project area 6 months before the start of the operational phase 	<ul style="list-style-type: none"> Cost of evaluation of the local housing situation and construction of the staff housing None 	<ul style="list-style-type: none"> Estimated budget allocation for Social Management Plan is already included in EMPs. None

Potential Impact	Proposed Mitigating Measures	Relevant personnel and responsibilities	Time table for implementation	Cost of the Mitigation measure	Financial Guarantee
		HR team will develop non-tolerance policy and collaborate with the CGM committee and the local police force to investigate the grievances			
Decommissioning, closure and post-closure					
Decline of the local economy	<ul style="list-style-type: none"> Support employment Support programs for the current and recently unemployed employees 	<ul style="list-style-type: none"> Golden Lace POSCO International Co., Ltd HR team will assist the affected employees to get new jobs 	<ul style="list-style-type: none"> Starting from 6 months before the end of the operational phase and throughout the decommissioning phase 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> To be included in the CSR budget by 2% of Project Profit.
	<ul style="list-style-type: none"> Provide financial support for skill improvement trainings for those who cannot find immediate job placement 	<ul style="list-style-type: none"> Golden Lace POSCO International Co., Ltd HR and CSR teams will collaborate to provide financial support 	<ul style="list-style-type: none"> 6 months after the beginning of the decommissioning phase 	<ul style="list-style-type: none"> Cost of the skill improvement trainings 	<ul style="list-style-type: none"> To be included in the CSR budget by 2% of Project Profit.
	<ul style="list-style-type: none"> Assist business partners to look for alternative markets for their goods and services 	<ul style="list-style-type: none"> Golden Lace POSCO International Co., Ltd logistics teams will identify the alternative markets 	<ul style="list-style-type: none"> Starting from 6 months before the end of operational phase 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> None

Potential Impact	Proposed Mitigating Measures	Relevant personnel and responsibilities	Time table for implementation	Cost of the Mitigation measure	Financial Guarantee
		and supervise the business partners			
Valid throughout the project					
Improvement of the local economy	<ul style="list-style-type: none"> Inform the public on the goods and services in demand and build capacity of the local communities to form business partnerships with the project proponent 	<ul style="list-style-type: none"> Golden Lace POSCO International Co., Ltd logistics and CSR teams will collaborate to perform public information disseminations and support capacity building programs 	<ul style="list-style-type: none"> 6 months before the beginning of each project phase and at the time of starting the project phases 	<ul style="list-style-type: none"> Cost of public dissemination sessions and establishing the capacity building program for business development 	<ul style="list-style-type: none"> To be included in the CSR budget by 2% of Project Profit.
	<ul style="list-style-type: none"> Develop short term skill training programs and provide financial support for prospective workers to obtain relevant trainings for skilled work 	<ul style="list-style-type: none"> Golden Lace POSCO International Co., Ltd logistics and CSR teams will collaborate to develop training and financial support for training programs 	<ul style="list-style-type: none"> 6 months before the beginning of each project phase 	<ul style="list-style-type: none"> Cost of the training and financial support programs 	<ul style="list-style-type: none"> To be included in the CSR budget by 2% of Project Profit.
	<ul style="list-style-type: none"> Identify local sources for the goods and supplies in demand 	<ul style="list-style-type: none"> Golden Lace POSCO International Co., Ltd logistics team will perform the survey of the merchants and the service 	<ul style="list-style-type: none"> 6 months before the start of each project phase and quarterly update of the initial survey findings 	<ul style="list-style-type: none"> Cost of the initial survey and the quarterly updates for each project phase 	<ul style="list-style-type: none"> It is included in the investment.

Potential Impact	Proposed Mitigating Measures	Relevant personnel and responsibilities	Time table for implementation	Cost of the Mitigation measure	Financial Guarantee
		providers in the project area			
	<ul style="list-style-type: none"> Employment preference is given to the local residents 	<ul style="list-style-type: none"> Golden Lace POSCO International Co., Ltd HR team will develop a local hiring plan 	<ul style="list-style-type: none"> 6 months before the beginning of the employment for each project phase 	<ul style="list-style-type: none"> Cost of developing the local hiring plan 	<ul style="list-style-type: none"> It is included in the investment.
Child labor	<ul style="list-style-type: none"> Include the Union and the corporate child labor policies in the HR policy 	<ul style="list-style-type: none"> Golden Lace POSCO International Co., Ltd HR team will review the Union and corporate child labor policies 	<ul style="list-style-type: none"> 6 months before the beginning of the employment of each project phase 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> None
	<ul style="list-style-type: none"> Request copies of the government ID, birth certificate or clearance from local administrative to confirm the age of the job applicants 	<ul style="list-style-type: none"> Golden Lace POSCO International Co., Ltd HR team will request the documents at the time of submitting the applications and keep the records 	<ul style="list-style-type: none"> At the time of employment for each project phase 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> None
	<ul style="list-style-type: none"> Develop non-tolerance policy on child labor for the business partners 	<ul style="list-style-type: none"> Golden Lace POSCO International Co., Ltd logistics team will audit the workforce of the business partners quarterly 	<ul style="list-style-type: none"> At the beginning of each project phase and quarterly afterwards 	<ul style="list-style-type: none"> Cost of auditing the business partners' workforce 	<ul style="list-style-type: none"> It is included in the investment.

Potential Impact	Proposed Mitigating Measures	Relevant personnel and responsibilities	Time table for implementation	Cost of the Mitigation measure	Financial Guarantee
		without any prior notification			
Community safety	<ul style="list-style-type: none"> Develop community health and safety plan and fire emergency plan in accordance with the Union and corporate policies 	<ul style="list-style-type: none"> Golden Lace POSCO International Co., Ltd logistics team will develop the plans be collaborating with the relevant departments in each project phase 	<ul style="list-style-type: none"> 6 months before the beginning of each project phase 	<ul style="list-style-type: none"> Cost of the formation of the plans and consultations with third party experts as needed 	<ul style="list-style-type: none"> It is included in the investment.
	<ul style="list-style-type: none"> Develop community health and safety pla and fire emergency plan in accordance with the Union and corporate policies Reinforce the capacity of the local police and firefighting teams 	<ul style="list-style-type: none"> Golden Lace POSCO International Co., Ltd logistics team will develop the plans by collaborating with the relevant departments in each project phase Golden Lace-Daewo logistics and CS teams will collaborate with the appropriate agencies and provide financial support 	<ul style="list-style-type: none"> 6 months before the beginning of each project phase 6 months before the beginning of each project phase 	<ul style="list-style-type: none"> Cost of the formation of the plans and consultations with third-party experts as needed Costs related to reinforcing the local police and firefighting teams 	<ul style="list-style-type: none"> It is included in the investment. To be included in the CSR budget by 2% of Project Profit.

Potential Impact	Proposed Mitigating Measures	Relevant personnel and responsibilities	Time table for implementation	Cost of the Mitigation measure	Financial Guarantee
Occupational safety	<ul style="list-style-type: none"> Develop occupational health and safety (OHS) plan in accordance with the Union, corporate and ILO policies 	<ul style="list-style-type: none"> Golden Lace POSCO International Co., Ltd HR team will collaborate with the relevant departments in each project phase to develop the OHS plan 	<ul style="list-style-type: none"> 6 months before the beginning of each project phase 	<ul style="list-style-type: none"> Cost of developing the OHS plan 	<ul style="list-style-type: none"> It is included in the investment.
	<ul style="list-style-type: none"> Develop OHS training module and appoint a OHS trainer 	<ul style="list-style-type: none"> Golden Lace POSCO International Co., Ltd HR team will develop the training module and provide OHS training quarterly 	<ul style="list-style-type: none"> 3 months before the beginning of each project phase for development of OHS training module at the beginning of each project phase and quarterly for OHS training 	<ul style="list-style-type: none"> Cost of developing the OHS training module and providing OHS trainings 	<ul style="list-style-type: none"> It is included in the investment.
Vehicle movement	<ul style="list-style-type: none"> Develop employee carpooling system Develop a procurement plan to manage the traffic in and out of the mill 	<ul style="list-style-type: none"> Golden Lace POSCO International Co., Ltd logistics and HR teams will collaborate for the details of the carpool program 	<ul style="list-style-type: none"> 2 months before the construction phase begins and quarterly evaluation of the carpool program for effectiveness 2 months before each project phase 	<ul style="list-style-type: none"> Initial cost of the vehicles and regular costs for vehicle operations and maintenance Cost of developing raw material procurement plan 	<ul style="list-style-type: none"> It is included in the investment. To be included in the CSR budget by 2% of Project Profit.

Potential Impact	Proposed Mitigating Measures	Relevant personnel and responsibilities	Time table for implementation	Cost of the Mitigation measure	Financial Guarantee
		<ul style="list-style-type: none"> Golden Lace POSCO logistics team will supervise the raw material suppliers according to the procurement plan Golden Lace POSCO International Co., Ltd logistics team will manage the traffic related to each project phase according to the procurement plan 	begins and quarterly assessment of the traffic in and out of the mill for effectiveness	and quarterly assessments	

7.5 Contingency/Emergency Response Plan

Contingency planning is necessary for accidents occurring during operation phases of development. The main components of a contingency plan include measures to prevent accidents that would result in the predicted impacts; the proponent's response and clean-up if there is an accident; and the organization and training of personnel to implement preventive measures and respond if there is an accident. Among the measures to be instituted, these will include at the minimum:

7.5.1 Medical Emergencies

An adequate clinic or trained first-aid personnel can be assigned to provide medicines and treat minor wounds and ailments at the Rice Processing Complex. A complete first –aid kit should be readily available and accessible at all times.

7.5.2 Emergency Response Teams

An emergency response team can be organized, trained, and deployed to implement the necessary remedial measures. The team should be equipped with appropriate communication equipment and first -aid kits to effectively respond to future emergencies. Coordination with the local emergency response department/s is undertaken to establish and designate the appropriate responsibilities and roles of the members and to organize an effective and speedy response team.

7.6 Fire Management Plan

The Fire Management Plan is designed to prevent damage caused by fire in the factory premises and to extinguish the fire quickly and easily in the event of a fire.

Fire extinguishers and hoses are strategically located within the site and within the buildings. The appropriate fire alarms is also be strategically located inside the buildings in case of fire.

The Fire Management Plan is attached in **Appendix P**.

7.7 Biodiversity Management Plan

The impacts from the loss of habitat during the operation phase are predominately related to the accidental release of chemicals and oil through Canal Water. However, the habitat on site is classed as Natural Habitat as a no-net-loss of biodiversity value.

In terms of environmental management measures to reduce impacts on biodiversity, the following activities will be carried out:

- Reducing the flow rate of surface water discharge to canal in Rainy season to reduce the alteration of vegetation of fencing area at operation phase;
- Protection and management of fish habitats and fish resources around the project area and replanting only the original species in restoration activities; and
- Replantation for occupied forest areas as compensation.

8. ENVIRONMENTAL AND SOCIAL MONITORING

Monitoring is a means of verifying the effectiveness of the management and mitigation measures contained within the management plans listed above. Key objectives of the monitoring process are to:

- Confirm effectiveness of management and mitigation measures;
- Ensure compliance with Applicable Standards (Myanmar National Environmental Quality (Emissions) Guidelines and other applicable mentioned in chapter 3-9);
- Monitoring the status of, and impacts on, identified sensitive receptors;
- Provide an early warning that any of the control measures or practices are failing to achieve their desired performance and ensure changes can be implemented to remedy these practices;
- Determine whether environmental and social changes are attributable to Project activities, or as a result of other activities or natural variation; and
- Provide a basis for continual review and improvements to Project design and execution.

8.1.1 *Performance Indicators and Monitoring Schedule*

Physical, biological and social environmental management components of particular significance have been identified as performance indicators. A comprehensive monitoring plan for each performance indicator has been prepared for all phases of the Project and is presented in below Table.

This includes the tentative parameters to be measured, methods to be utilised, sampling locations, frequency of measurements, detection limits and responsibilities for implementation and supervision.

Table 8-1 Environmental and Social Monitoring Subplan with Budget

Monitoring Parameter	Monitoring indicator	Monitoring Location	Monitoring Method	Frequency	Responsibility	Cost at Operation Phase (Kyats)	Remarks
Air Quality *	NO _x , SO ₂ , PM _{2.5} , PM ₁₀ and O ₂ (Same parameters of baseline survey)	(A 1) 16°54'28"N, 96° 0.4'14"E	Real-time monitoring system	6 monthly	GLPI Factory Manager or Third Party	2,000,000	
Water Quality *	Check compliance with Myanmar National Environmental Quality (Emissions) Guidelines for site runoff and wastewater discharges (Same parameters of baseline survey) Alkalinity (Alk), Magnesium (Mg ++), Sodium (Na+), Potassium (K+), Total Hardness (TH), Sulfate (SO ₄ -), Chloride (Cl-), Iron (Fe), Dissolve Oxygen (DO), Chemical Oxygen Demand (COD), Biochemical Oxygen Demand (BOD), pH, Ammonia-Nitrogen (NH ₃ -N), Turbidity,	Groundwater (GW-1) 16°54'29.01"N, 96° 4'14.36"E Groundwater (GW-2) 16°54'29.83"N, 96° 4'14.08"E Effluent 16°54'28.06"N, 96° 4'10.55"E	Standard analytical methods	6 monthly	GLPI Factory Manager or Third Party	2,400,000	

Monitoring Parameter	Monitoring indicator	Monitoring Location	Monitoring Method	Frequency	Responsibility	Cost at Operation Phase (Kyats)	Remarks
	Salinity, Arsenic (As), Lead (Pb)						
Noise level*	dBA	(N 1) 16°54'28"N, 96° 0.4'14"E	Sound level meter meeting standard	6 monthly	GLPI Factory Manager or Third Party	100,000	
Soil Quality*	Check Compliance with described in EMP (Same parameters of baseline survey) pH, Salinity Electrical Conductivity, Cation Exchangeable Capacity, Potassium (Potash)	(S-1) 16°54'26.78"N, 96° 4'10.69"E	Standard analytical methods of Laboratories	6 monthly	GLPI Factory Manager or Third Party	500,000	
Inspection of Mitigation Compliance	General compliance with mitigation measures presented in the EMP of IEE.	All structural sites and facility sites and their surroundings	Visual inspection of all active work areas and inspection of records, and	6 monthly	GLPI Factory Manager	500,000	

Monitoring Parameter	Monitoring indicator	Monitoring Location	Monitoring Method	Frequency	Responsibility	Cost at Operation Phase (Kyats)	Remarks
			consultation with the people				
Public and Occupational health and safety (Clinic, medical doctor, first aid, PPE, awareness training)	Outbreak of epidemic disease in the village, site area, Number of workers reporting sickness, no of workers injured, Number of fatal incidents etc.	Project area and villages around the project	Direct observation, consultation with local people/com-munities and health officers, managers of camps and operational workforce, health care facilities of the Staff camps and sites.	Monthly	GLPI Factory Manager	1,000,000	Under CSR
Monitoring report to ECD				6 monthly		500,000	
Total Monitoring Cost for 6 monthly						7,000,000	

*Monitoring locations for those parameters should be the same of baseline survey.

8.1.2 Reporting Mechanism for Environmental and Social Monitoring Program

A robust reporting system will provide the Project with the necessary feedback mechanisms to ensure quality and timely implementation of the works. The reporting system will provide a mechanism to ensure that the measures proposed in the Project's IEE are implemented.

Prior to the commencement of operations, GLPI will finalise the format and frequency for reporting on the status and progress of environmental and social monitoring. The format will be designed to meet all the compliance conditions associated with the National requirements.

As per the EIA procedure (Notification No (616/2015) Chapter 9 Section 108), the Project Proponent shall submit monitoring reports to the MONREC on a frequency prescribed (at least every six (6) months).

8.1.3 Institutional Setting and Implementation Arrangements

GLPI is committed to providing resources essential to the implementation and control of the IEE. Resources include the appropriate human resources and specialized skills.

8.1.3.1 Operation Phase

The operation team of GLPI will be responsible for implementation of the associated mitigation measures during the operation phase. GLPI's staff, specifically the Safety and Environmental Department Head, will monitor the implementation of these mitigation measures. As for the construction phase, this will be achieved through implementation reviews conducted by the Safety and Environmental Department Head by various means including weekly operation meetings, review of operation log book, monthly and other operation reports etc. The documentation, reporting and communication requirements will be the same as those for the construction phase as presented above.

8.1.4 Update the Monitoring Plan

This Monitoring Plan will be updated, revised and reviewed internally on a regular basis to ensure its effectiveness in monitoring the environmental and social performance of the Project. The IEE of the Project will be reviewed on an annual basis.

Furthermore, in the event of an unanticipated impact and design change with respect to the Project standards (including National and International requirements), the IEE would be updated as necessary.

9. PUBLIC CONSULTATION AND DISCLOSURE

9.1 Introduction

Golden Lace POSCO International Company Limited is establishing a Rice Processing Complex in Shwe Lin Ban Industrial Zone of Hlaing Thar Yar Township, Yangon Region. The mill is operating with 40 employees. The operation phase of the project includes construction of one warehouse and Rice Processing Complexing. The main purposes of conducting the public consultation are:

- Collect information for the identification of stakeholders and potentially affected persons;
- Collect baseline social and environmental data and information;
- Inform stakeholders and potentially affected persons about the project and its likely impacts;
- Record public concerns about the project;
- Record public's ideas for impact mitigation and for maximizing any environmental/social benefits of the project.

Chapter IV, section 7(m) of Environmental Conservation Law requires any development work in Myanmar to conduct environmental and social impact assessment (ESIA) before receiving permission from Myanmar Investment Commission. Since public consultation is one of the essential components of (ESIA), the following public consultation seminar was conducted for the Rice Processing Complex project.

9.2 Methodology and Approach

The significant receptors of the project development are determined to be Ward 15 is the host village for this project. Ward 15 is (0.45) kilometers far from the project site in south-east direction. The following methods were performed to assess the social impact of the project on the local communities:

Table 9-1 Methods to Assess the Social Impact

Information gathering	Public consultation
Questionnaires and surveys	Conferences/ Seminars

Random sample selection method was used to choose participants for the information gathering questionnaire. The questionnaire is provided in **Appendix M**.

9.3 Summary of Consultation Activities Undertaken

9.3.1 Stakeholder engagement done by Environ (2015)

The significant receptors of the project development were the industrial compounds Shwe La Win to the north and Shwe Na Yar to the south of the rice mill, these two industrial compounds are located approximately 150 meters from the Shwe Lin Ban Rice Mill. There are a few permanently living personnel within the industrial area. However, within 2 kilometre radius, there is a Kyan Sitar Housing complex that might be the living quarters of the employees within the Industrial area. These are however transients as they need to be near to their place of work to minimize their transportation costs. The nearest residential area (15 ward) is approximately 0.45 kilometres away from the industrial zone (see Figure 9-1).

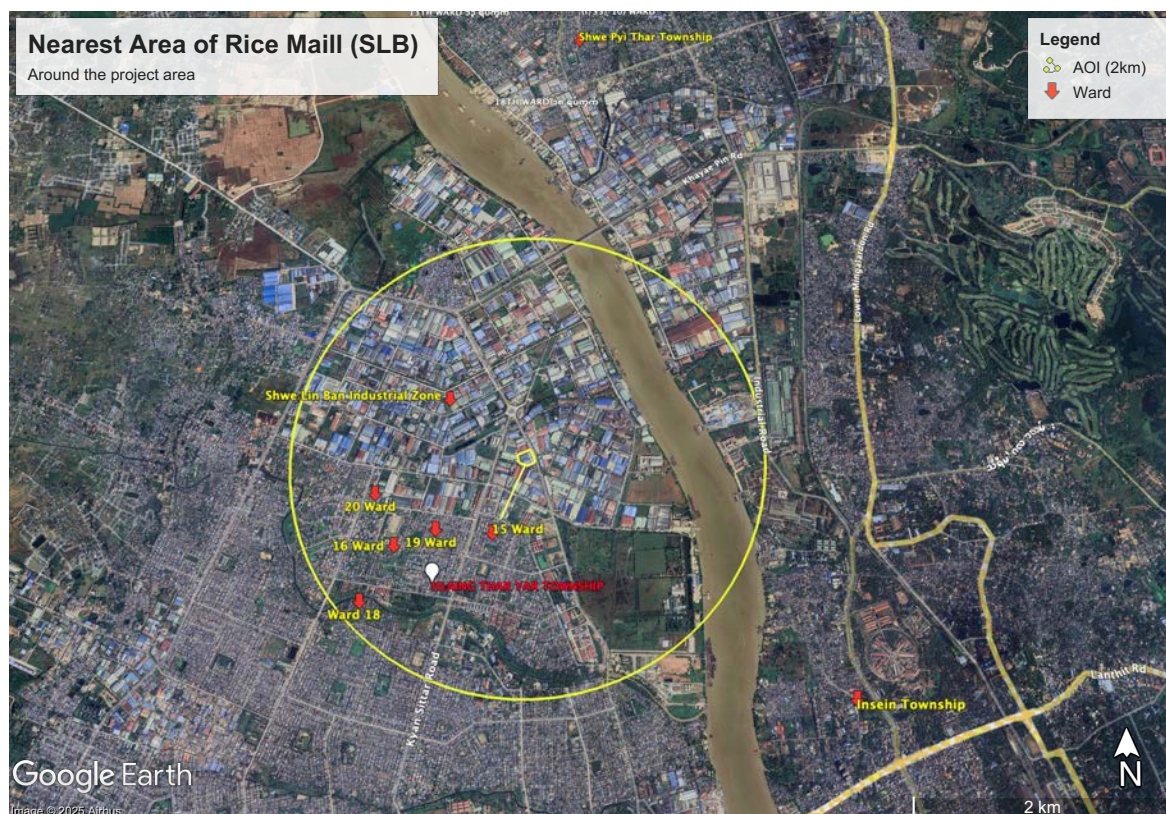


Figure 9-1 Nearest area to the Shwe Lin Ban Rice Mill

For this report there are 15 respondents selected as the sample size for this survey. These represent the people who are living both permanently and temporarily, these workers represent those working for both host factory and nearby other factories. Table 9-2 shows the names of the respondents that were interviewed.

Table 9-2 List of Participants

Sr.	Name	Position
1	U Ko Ko Naing	Officer
2	U Zaw Win Moe	Golden Lace POSCO Int
3	U Myo Lin	Shwe War Yaung Industrial Zone
4	U San Ni	Taw Win Myint Mo
5	Daw Su Su Mar	Shwe Na Yar Industrial Zone
6	U Pyae Phyo Mg	Shwe La Win Industrial Zone
7	U Khin Mg Win	Shwe Lin Ban Industrial Zone
8	Daw Moe Thuzar Myint	Golden Lace POSCO Int
9	Daw Aye Aye Maw	Golden Lace POSCO Int
10	Daw Myint Myint Zaw	Golden Lace POSCO Int
11	U Lin Htin	Golden Lace POSCO Int
12	U Thet Mg	Golden Lace POSCO Int
13	U Myint	Golden Lace POSCO Int
14	U Mya Lin Zaw	Shwe Zarchi Industrial Zone
15	U Tin Tun	Shwe War Yaung Industrial Zone

Note: The original document for the recorded list of participants was lost while revised this report. The baseline data gathering is shown in the Table 9-3 below.

Table 9-3 Types of baseline collection for social impact

Type of Study	Methodology
Field	<ul style="list-style-type: none"> Stakeholders' Engagement
Desktop	<ul style="list-style-type: none"> Myanmar baseline datasets from Myanmar Information Management Unit (MIMU)

9.3.2 Further Consultation - Public Consultation Meeting (2015)

Field survey and observation were conducted during June, 2015. Survey team met workers from Golden Lace Rice Mill and staff/ workers from other factories which are falling in the possible impact zones and the project site as well as administration officer from Zone Management Committee. Secondary data were collected from 30 June, 2015. It consists of the following main tasks (Table 9-4).

- Collect and review relevant environmental and social information and data from Hlaingtharya Township
- Implementation of field data collection
- Public meeting with workers and some staff of affected area

Table 9-4 Focus group meeting

No	Date	Nama Town/Village	Participation	Arranged by
1	30.06.2015 2:30PM	Hlaingtharya Township	workers from Golden Lace Rice Mill and other factory in Shwe Lin Ban Industry	Manager, Shwe Zarchi Rice Mill, Hlaingtharya Township

Dr. Win Maung facilitated the public consultation meeting for forty five minutes followed by collection of baseline data by the members of EMC assessment team and the observers from Environ Co., Ltd.



Figure 9-2 Picture from the Stakeholder Engagement (2015) bby ENVIRON

9.3.3 Results of the Stakeholders' Engagement

The stakeholders' engagement was to survey if the people around the project area is aware that the proposed rice mill is being set up and what are their reactions to the operation of the same. The survey results showed that all of the respondents were aware of the project. Most of the respondent agree that the project should proceed as they feel that this project can provide job

opportunities in the construction of the two warehouses as well as during the operations of the rice mill. The respondents who are working at the Golden Lace Rice Mill also expect the increase of production of the rice mill will ensure their continued employment with the company.

Most of the respondents agree that the project will provide good opportunity and feel that there are no negative effects to their community and wellbeing. The other respondents not working for the rice mill project does not see any negative impacts to their company or to the industrial zone in general.

The respondents were provided the opportunity to suggest what the rice mill project can do for the community in general. The following are the suggestions.

- To share technology know-how to another factory
- To contribute for upgrading infrastructure (e.g., maintain roads, electricity for nearby residential area)
- To provide health care facilities for factory workers

It is also important to survey whether the people in the project area know about the project. If they know about the project, they can prepare for the impacts of the project. The survey results showed that all of the respondents are aware of the project. Most of the respondents are in favor of the project. They considered that the project will provide job opportunities in the expansion / construction phase. The respondents who are working at the Golden Lace rice Mill also expect the increase of production will consequently result in job security.

According to the survey result, (60%) of the respondents responded with a "very like" answer. All of the respondents believe that there will be no significant negative impacts upon their livelihoods as this project is just an extension of the existing factory in the same compound and there are also other factories already established.

An overwhelming percentage of the survey participants felt positive about benefits that the rice mill project will bring (Figure 9-3).

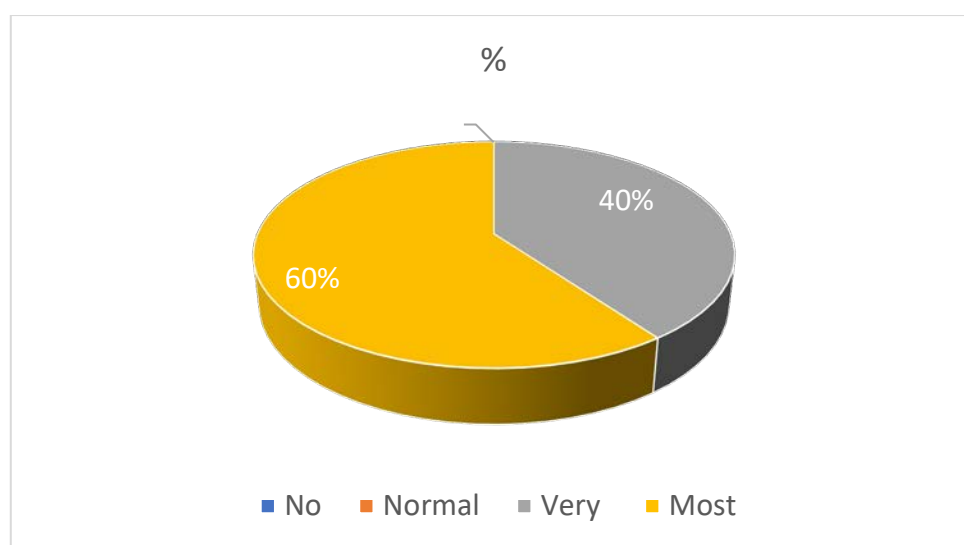


Figure 9-3 Attitudes of the ssurvey respondents towards the rice mill project

9.3.4 Public Consultation was done for updating of environmental and social concerns

An **updated consultation meeting** was held at Meeting Hall of Rice Processing Complex in Hlaing Thar Yar Township with various relevant stakeholders from around of the project area and staffs of Rice Mill.

The Presentation Materials are described in **Appendix N**.

9.3.4.1 Public Consultation Meeting

Date: 15.5.2025 (Thursday)

Time: 10:00 to 11:00 AM

Location: Meeting hall of Rice Processing Complex in Hlaing Thar Yar Township

Number of participants: Total (16)

Meeting Agenda-

- 1) Meeting Announcement for opening ceremony;
- 2) Explanation about Golden Lace POSCO International Co., Ltd. Daw Tin Htar Phone, HR Manager of Golden Lace POSCO International Co., Ltd;
- 3) Explanation about Project Description, Alternatives and current conditions of Rice Mill by U Lwin Phyo, Factory Manager of Rice Processing Complex (Hlaing Thar Yar-Shwe Lin Ban Industrial Zone);
- 4) Explanation about Environmental Compliance Consultancy Co., Ltd by Daw Myat Mon Swe, Principal Consultant of Environmental Compliance Consultancy Co., Ltd;
- 5) Daw Myat Mon Swe explained continuously about the Laws and guidelines to be followed, type of Project and size specification, the purpose of the environmental impact assessment and the stages of the impact assessment, area of Influence for impact assessment, some of baseline survey results conducted in and around of project;
- 6) Discussion section to review of the questions asked by the participants and get comments and advises.
- 7) Announcement of ending the meeting.

Consultation Activities:

On the presentation of the project activities including impacts analysis and the results of baseline survey, participants discussed about their concerns on environmental point of view for water quality and CSR Programme to provide for Rural Health Care and Education.

The results of the Public Consultation meeting expressed concerns and suggestion are described in the following Meeting minutes and answered officially to all questions of all participants by GLPI and EnvCC.

Minutes of the meeting, Documentary photos of the meeting, and the participants' list of the meeting are described as follows.

Table 9-5 Meeting Minutes

No.	Comments of Participants	Responses
1)	U Khin Maung Lwin explained that there is not wastewater discharge from the factory and we accept this project according to the promoting of local trading for the brown rice gain and bran which can be promoted to the local business.	Daw Tin Htar Phone (HR Manager) from GLPI remarked that opinion with thanks. Daw Myat Mon Swe, Principle consultant of EnvCC answered: <ul style="list-style-type: none"> - There can be unplanned events by the lack of management in sometime, the wastewater should be sampled to analysis the water quality discharge to the environment.
2)	U Thit Lwin said that there is nothing complaints for the responsibilities of the Rice Mill because of the Job opportunities given with international standardized facilities at working area. Due to the safety priority and standardization for environmental conservation point of view, there is no hazards waste and wastewater to disclose from the factory to the environment as well.	Daw Myat Mon Swe, Principle consultant of EnvCC answered: <ul style="list-style-type: none"> - After awarding the Environmental Compliance Certificate (ECC) for the implementation of the project, there must be conducted Environmental Monitoring report in every 6 months. The quality of the water should be sampled as a baseline to compare those quality not to harm to the environment as well as community and occupational health and safety.
2)	U Zaw Moe Hlaing said that the promoting of the facilities of nearby the project area such as improved access to electricity and drinking water should be included in CSR Programme of GLPI.	<ul style="list-style-type: none"> - Noted by GLPI

Documentary photos of the meeting



Recording of list of participants

Documentary photos of the meeting



Participants at PCM



Presented by Daw Tin Htar Phone (HR Manager) from GLPI



Presented by Daw Myat Mon Swe (Principle Consultant) from EnvCC



Discussed by U Tint Lwin



Commented by U Khin Maung Lwin

Detail List of Participants

No.	Name	Position	Organization/ Address
Public			
1	U Kaung Set Naing	Clark	19 Ward, Hlaing Thar Yar
2	U Kaung Htet San	Clark	19 Ward, Hlaing Thar Yar

No.	Name	Position	Organization/ Address
3	U Mya Lin Zaw	Machine Controller	322, Hlaing Thar Yar
4	U Pyae Phyoe Aung	Machine Controller	15 Ward, Hlaing Thar Yar
5	U Naing Min Soe	Warehouse Keeper	20 Ward, Hlaing Thar Yar
6	U Tun Aung Aye	Machine Controller	322, Hlaing Thar Yar
7	U Zaw Moe Hlaing	Machine Controller	Rakhaing, Yo Lay, Hlaing Thar Yar
8	U Tun Min Naing	Machine Controller	12 Ward, Hlaing Thar Yar
9	U Kyaw Min San	Machine Controller	12 Ward, Hlaing Thar Yar
Golden Lace POSCO International Co., Ltd			
10	Mr. Park Kyong HO	Managing Director	Management
11	U Khin Maung Lwin	Factory Manager	Management
	U Thit Lwin	Operation in-charge	Management
12	Daw Tin Htar Phone	HR Manager	Admin and HR Department
13	Daw Nu Nay Yee Yoone	Manager	Marketing
Environmental Compliance Consultancy Co. Ltd			
14	Daw Myat Mon Swe	Principal Consultant	Environmental Compliance Consultancy Co. Ltd
15	U Ko Ko Latt	Manager	Environmental Compliance Consultancy Co. Ltd

The original document for the recorded list of participants is illustrated in **Appendix O**.

The Socio-economic and Health Survey conducted in group discussion held with Factory Manager, operation In-charge and local people. Some documentary photos of group discussion are illustrated as follows.

Socio-economic and Health Survey (Group Discussion)



9.4 Results of the Consultations

9.4.1 The locals' Attitudes Towards the Rice Processing Complex Project Development

An overwhelming percentage of the survey participants felt positive about benefits that the Rice Processing Complex project will bring. Figure 9-4 without posing any negative impacts to the local communities.

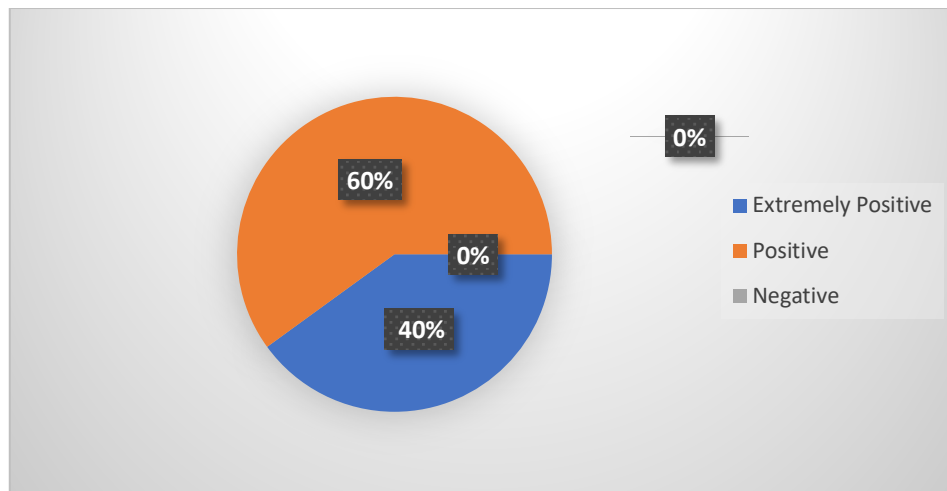


Figure 9-4 Attitudes of the survey respondents towards the Rice Processing Complex project

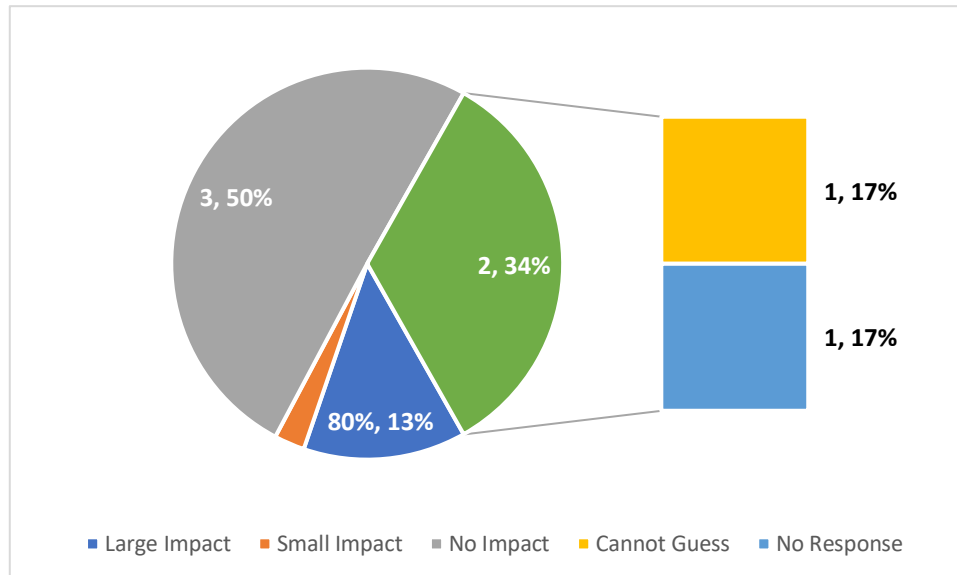


Figure 9-5 The survey respondents' perception on the negative impacts that the Rice Processing Complex projects will have on the local communities

9.5 Further Consultations

9.5.1 Objectives of the Consultations During All Project Phases

9.5.1.1 Operational phase

Since the operational phase is the longest of all the project phases, the impacts are more diverse long term. Therefore, the project proponent should use operational phase public consultations as an process to identify the adverse environmental and social impacts of the sugar mill project on the local communities that could be overlooked by the project proponent otherwise. In doing so, the project proponent is able to address the public concerns effectively and ensure a good relationship between the local communities and the project proponent.

9.5.1.2 Decommissioning, closure and post-closure phase

During this phase, the project proponent should use public consultations mainly to leave a footprint of responsible conduct of business. Instead of neglecting the turmoil in the public due to the significant changes, the project proponent should collaborate with the local communities to mitigate the adverse social impacts as much as possible, maintaining safety, security and stability of the local communities.

9.5.2 Consultation Committee(s)

9.5.2.1 Project liaison committee

A project liaison committee that will ensure that communication with all stakeholders is effectively maintained during the construction, operation and decommissioning/ closure/post closure phases. Figure 9-6 describes the structure of the project liaison committee.

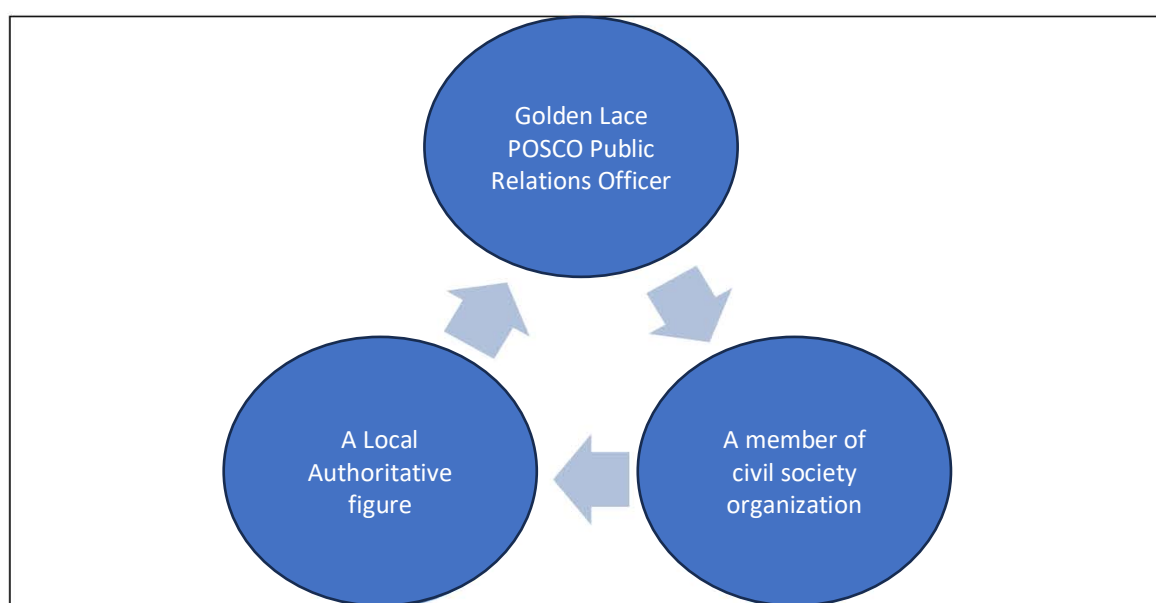


Figure 9-6 Structure of the project liaison committee

9.5.2.2 Complaints and grievances mechanisms committee

The purpose of the committee is to help resolve environmental and social issues, and especially any complaints and grievances coming from the public and in particular the affected population. Figure 9-7 provides the structure of the Community Grievance Mechanism (CGM) committee. The CGM committee coordinator, the local authoritative figure and the CSO member in the committee are all appointed by the public and rotated annually.

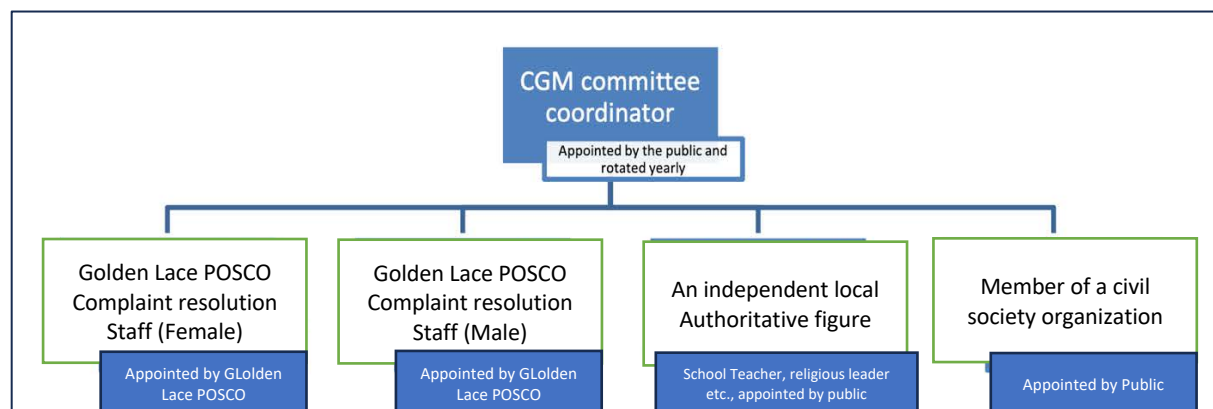


Figure 9-7 Structure of the complaint and grievance mechanism committee

9.5.3 Complaints and Grievances Mechanisms (CGM)

According to the EIA Procedure of Myanmar, MONREC requires that the project proponent describes a mechanism to receive and respond to public complaints and grievances called Community Grievance Mechanism (CGM). The purpose of CGM is for the local communities to express their concerns on the adverse environmental and social impacts caused by the project. CGM consists of six distinct steps as follows:

9.5.3.1 Receiving and registering grievance

- Multiple channels is available for the local communities to express their concerns
- This could be by consulting with a network of people designated by the project proponent such as religious leaders, police officers, local administrative officers, representatives from civil society organizations and company officials. At least 75% of the people in the network should be independent of the company. The designated individuals is able to record the written or oral accounts on a simple form that is forwarded to the CGM committee for further action.
- Another channel would be submitting the complaint via CGM boxes where written complaints can be deposited.
- Moreover, complainants should be able to talk with a designated complaint-resolution staff consisting of both male and female employees that record complaints both in person meetings or via phone on a simple form to be forwarded to the CGM committee, discuss the complainants' situation and explore possible approaches for resolution.
- Submission of complaints is convenient, free of threats and can be anonymous or self-identified.

9.5.3.2 Screening for eligibility

- The complaint is directly or indirectly related to the project.
- The complaint is complete and written legibly.
- The complaint is in the scope of issues that CGM is authorized to address; i.e., it is not an issue that is more appropriate to be addressed by other company and community procedures.
- If a complaint is determined to be ineligible for not fulfilling the described criteria above, the CGM committee will inform the decision and the reasons for the rejection to the complainant or the public.

9.5.3.3 Assessing the grievance

- At this stage, the CGM team will gather information about the case and develop ways on how the complaint is resolved;
- The CGM team will determine who will conduct the assessment such as the appropriate company staff or department;
- It will also encourage a company member to engage in direct conversation with the complainants or possible affected people according to the complaint to gain first hand understanding of the issue;
- The CGM team will then identify the parties involved in the issue, clarify the issues and concerns raised by the complaint, gather the opinions of other relevant stakeholders and explore the various approaches for settlement;
- The seriousness of the complaint is determined based on the gravity of the allegation, the potential impact on an individual's or a group's welfare and safety and the public profile of the issue;
- In exploring ways for settlement, the CGM team will involve the complainant and the possible affected people in making decisions.

9.5.3.4 Determining a resolution approach

The four grievance resolution approaches are:

- The company proposes a resolution;
- The community and the company decides a resolution together;
- The community and the company defer to a third party to decide and
- The community and the company utilize traditional or customary practices.

9.5.3.5 Formulating and implementing a response and settling the issue

- The project liaison committee or the individual responsible for complaint assessment accompanied by the CGM coordinator will respond to the complainant or the public.
- The response will consider the complainant's view about the process of settlement. It may suggest an approach to settle an issue or offer a preliminary settlement.
- In formulating a response, the CGM team will facilitate a meeting with the relevant company manager and the complainant or the possible affected people. A neutral third party facilitator can be appropriate in some instances. If the proposed response is

accepted by the complainant or the affected people, the complaint is successfully resolved. Otherwise, the group will try to reach a mutually acceptable agreement.

9.5.3.6 *Tracking and monitoring of the resolution*

- The severity of an issue determines whether to alert senior management and the seniority of management oversight needed;
- There is assurance that a specific person is responsible for overseeing each grievance from receipt and registration to implementation;
- The resolution is provided timely;
- All the concerned personnel and stakeholders is informed about the status of the case and the progress being made towards resolution;
- The company's response outcomes is documented;
- The stakeholders' opinions is recorded;
- Whether additional research or consultation with the parties involved will also be determined
- Implementation of any settlement will be monitored to ensure timeliness and comprehensiveness

9.5.4 *Disclosure*

According to the EIA guideline of Myanmar, MONREC requires that the project proponent releases the following information to the public in Burmese and English and written in non-technical terms so as to be easily understood by the population. Moreover, regular contact with the district and local authorities will help ensure the information is disseminated to the local population. To facilitate disclosure of information, it is recommended that a dedicated information center be established within the study area and near the affected people.

- Construction activities;
- Recruitment policies and job opportunities;
- Supplier opportunities;
- Transport and traffic in the project area, including road access restrictions/diversions;
- Health and safety awareness programs;
- Environmental and social issues;
- Local worker training;
- Workers' accommodations camp management, including codes of conduct for workers;
- Complaints and grievances process.

9.5.5 *Corporate Social Responsibility (CSR) Policy*

Golden Lace POSCO INTERNATIONAL Co., Ltd has a CSR policy for ensuring strict compliance by company directors, and personnel specifically to:

- ◆ Contribute to the sustainable development of communities through active stakeholder engagement and communication.
- ◆ Maintain high ethical standards and support transparency in all project activities.

The CSR activities are being conducted twice per a year by 2% of profits in accordance with the guidelines set by the Myanmar Investment Committee.

The CSR Program of the Golden Lace POSCO INTERNATIONAL Co., Ltd from 2022 to 2024 is described in.

Table 9-6 Contributed CSR for Community Development by Golden Lace POSCO INTERNATIONAL Co., Ltd (Kyat)

Year	AhNhaing Mae	flood victims in Bago
2022	1,845,700	2,000,000
2023	2,168,869	
2024	2,311,748	
Total	6,326,317	2,000,000



Figure 9-8 Donation Record to the Ah Nhaing Mae Orphanage

10. CONCLUSION AND RECOMMENDATIONS

10.1 Conclusions

There is a potential in the Rice market arising from the development of modern rice mills in the region, mainly through processed rice traders with rice mills. By operating a Modern Rice Mill with large capacity, the farmers could opt to grow the variety of rice that the Shwe Lin Ban rice mill requires. This will provide the rice a steady supply of raw materials and the farmers a steady income due to the sales of their rice harvest.

The broken rice, and rice bran could be sold in the domestic market as feed for animals and fishes. Therefore, the project may raise local livelihood by supplying animal feeds for livestock industry in the region.

This Initial Environmental Examination (IEE) has assessed the potential environmental impacts of the Rice Mill Project. The proposed project does not pose significant negative impacts on the physical environment due to size of the project and its land use. Among them, various adverse impacts on air quality and fugitive dust emission, disturbances to existing landscapes can be contained and mitigated through mitigation measures.

The impacts from the expansion by construction of the two new warehouses and operation of the mill are predictable and manageable. Impacts can be either avoided or minimized. The Environmental Management Plan (EMP) covers all aspects of a project proponent's activities. The implementation of the project will provide a significant contribution to uplift the socioeconomic condition of local people with the incentive in agricultural production through the support of the facility and its services.

10.2 Recommendations

Present study found that most of the impacts identified and evaluated by the IEE study are moderately significant but can be minimized through the implementation of mitigation measures. However, it shall be recommended that the project proponent shall be responsible for periodical monitoring and ensure mitigations measures for following concerns which will be developed throughout the operation period of the mill.

- rice milling dust and bran.
- noise caused by milling machines.

The current EMP will be further reviewed and updated by the engineering team of project proponents prior to the construction and even during the construction period should there be observations recorded on new issues that need to be addressed. The project proponent, Golden Lace POSCO International Co. Ltd., advised institutionalization of environmental compliance monitoring and capacity building of projects.

11. REFERENCES

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www.cpcb.nic.in
- ◆ EIA Procedure 2015, MONREC,
- ◆ TECHNICAL GUIDE NO.2 RICEPROCESSING, Satnet Agro-Processing Section, Sustainable Agriculture Trainers Network (SATNET) “Guidelines for (1) siting of rice shellers/millers; (ii) handling and storage of rice husk and (iii) handling, storage and disposal of ash generated in boiler using husk as fuel”. Central Pollution Control Board (CPCB), Ministry of Environment & Forests. www.cpcb.nic.in
- ◆ Waste Minimization in Parboiled Rice Mill Units – Andhra Pradesh Pollution Control Board Publication, April 2005.
(www.appcb.ap.nic.in/cpc/Bulletin_123_Parboiled_final.pdf)
- ◆ Probabilistic seismic hazard assessment for Yangon Region, Myanmar; Myo Thant. Department of Geology, University of Yangon Myanmar.
- ◆ Probabilistic Seismic Hazard Assessment for Yangon Region, Myanmar, Myo Thant, December 2012
- ◆ Rice Processing Complexing Manual- International Rice and Research Institute, Manila, Phillipines, 2006
- ◆ Rice Milling Manual- International Rice and Research Institute, Manila, Philippines, 2006 TECHNICAL GUIDE NO.2 RICE PROCESSING, Satnet Agro-Processing Section. Sustainable Agriculture Trainers Network (SATNET)
- ◆ Vulnerability and Resilience Assessment Ayeyarwaddy Delta, Myanmar; Delta Alliance Report.
- ◆ Waste Minimization in Parboiled Rice Mill Units - Andhra Pradesh Pollution Control Board Publication, April 2005. (www.appcb.ap.nic.in/cpc/Bulletin_123_Parboiled_final.pdf)

12. APPENDIXES

APPENDIX A: MIC'S APPROVAL OF COMPANY 'S NAME CHANGE



ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်
မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှုကော်မရှင်

၂၀၁၇ ခုနှစ် ဇန်နဝါရီလ ၁၁ ရက်စွဲပါ ခွင့်ပြုမိန့်အမှတ် ၁၂၂၁/၂၀၁၇ တွင် ပြင်ဆင်ချက်

၂၀၁၉ ခုနှစ် ဧပြီလ ၂၆ ရက်နေ့တွင် ကျင်းပခဲ့သော မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှု ကော်မရှင်၏
၆/၂၀၁၉ ကြိမ်မြောက် အစည်းအဝေး ဆုံးဖြတ်ချက်အရ ပေါင်းဆန်၊ အဆင့်မြင့်ဆန်ဖြူနှင့်
ဆန်နှင့်သက်ဆိုင်သော ထုတ်ကုန်များ ကြိတ်ခွဲထုတ်လုပ်ရောင်းချခြင်းလုပ်ငန်း (စက်ရုံအမှတ်-၁)
ဆောင်ရွက်လျက်ရှိသော ကုမ္ပဏီအမည်အား Golden Lace Daewoo Company မှ Golden
Lace Posco International Company Limited သို့ ပြောင်းလဲပြင်ဆင်လိုက်သည်။

(ဗ) မြန်မာနိုင်ငံတွင်ဖွဲ့စည်းမည့်ကုမ္ပဏီအမည် GOLDEN LACE POSCO
INTERNATIONAL COMPANY LIMITED


ဥက္ကဋ္ဌ (ကိုယ်စား)

(မြသူဇော၊ တွဲဖက်အတွင်းရေးမှူး)
၆

ရက်စွဲ၊ ၂၀၁၉ ခုနှစ် မေလ ၂ ရက်
နေရာ၊ ရန်ကုန်မြို့

APPENDIX B: COPY OF COMPANY REGISTRATION OF GOLDEN LACE POSCO INTERNATIONAL CO., LTD.



ကုမ္ပဏီမှတ်ပုံတင်လက်မှတ်
Certificate of Incorporation

GOLDEN LACE POSCO INTERNATIONAL CO., LTD.
Company Registration No. 105036248

မြန်မာနိုင်ငံကုမ္ပဏီများအက်ဥပဒေ ၁၉၁၄ ခုနှစ် အရ
GOLDEN LACE POSCO INTERNATIONAL CO., LTD.
အား ၂၀၁၆ ခုနှစ် နိုဝင်ဘာလ ၂၈ ရက်နေ့တွင်
အစုရှယ်ယာအားဖြင့် တာဝန်ကန့်သတ်ထား သည့် အများနှင့်မသက်ဆိုင်သောကုမ္ပဏီ
အဖြစ် ဖွဲ့စည်းမှတ်ပုံတင်ခွင့် ပြုလိုက်သည်။

This is to certify that
GOLDEN LACE POSCO INTERNATIONAL CO., LTD.
was incorporated under the Myanmar Companies Act 1914 on 28
November 2016 as a Private Company Limited by Shares.


ကုမ္ပဏီမှတ်ပုံတင်အရာရှိ
Registrar of Companies
ရင်းနှီးမြှုပ်နှံမှုနှင့်ကုမ္ပဏီများညွှန်ကြားမှုဦးစီးဌာန
Directorate of Investment and Company Administration



Former Registration No. 784FC/2016-2017(YGN)

APPENDIX C: COPY OF COMPANY'S REGISTRATION OF ENVCC



ကုမ္ပဏီမှတ်ပုံတင်လက်မှတ်
Certificate of Incorporation

ENVIRONMENTAL COMPLIANCE CONSULTANCY COMPANY LIMITED
Company Registration No. 126296460

မြန်မာနိုင်ငံကုမ္ပဏီများဥပဒေ ၂၀၁၇ အရ
ENVIRONMENTAL COMPLIANCE CONSULTANCY COMPANY LIMITED
အား ၂၀၂၀ ခုနှစ် ဇူလိုင်လ ၆ ရက်နေ့တွင်
အစုရှယ်ယာအားဖြင့် တာဝန်ကန့်သတ်ထား သည့် အများနှင့်မသက်ဆိုင်သောကုမ္ပဏီ
အဖြစ် ဖွဲ့စည်းမှတ်ပုံတင်ခွင့်ပြုလိုက်သည်။

This is to certify that
ENVIRONMENTAL COMPLIANCE CONSULTANCY COMPANY LIMITED
was incorporated under the Myanmar Companies Law 2017 on 6 July
2020 as a Private Company Limited by Shares.

ကုမ္ပဏီမှတ်ပုံတင်အရာရှိ
Registrar of Companies

ရင်းနှီးမြှုပ်နှံမှုနှင့်ကုမ္ပဏီများညွှန်ကြားမှုဦးစီးဌာန
Directorate of Investment and Company Administration



APPENDIX D: COPIES OF THIRD-PARTY ORGANIZATION LICENSE AND EXPERTS OF ENVCC



ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်အစိုးရ

The Government of the Republic of the Union of Myanmar

သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန

Ministry of Natural Resources and Environmental Conservation

ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန

Environmental Conservation Department

ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ငန်းလိုင်စင် (အဖွဲ့အစည်း)

Environmental Impact Assessment License (Organization)



Environmental Compliance Consultancy Co., Ltd ၊ ကုမ္ပဏီမှတ်ပုံတင်အမှတ်-၁၂၆၂၉၆၄၆၀ အား အကြံပေး အဖွဲ့အမျိုးအစား(က) အဖြစ် လုပ်ကိုင်ဆောင်ရွက်ရန် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ငန်းလိုင်စင်ကို ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းနှင့် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းပြုလုပ်သည့် တတိယပုဂ္ဂိုလ် သို့မဟုတ် အဖွဲ့အစည်းလုပ်ငန်းလိုင်စင်ဆိုင်ရာ လုပ်ထုံးလုပ်နည်းနှင့်အညီ ဤဝန်ကြီးဌာန၏ အတည်ပြုချက်ဖြင့် ထုတ်ပေး လိုက်သည်။

It is hereby issued that **Environmental Compliance Consultancy Co., Ltd** ၊ Registration No. 126296460 has fulfilled the requirements for obtaining an Environmental Impact Assessment License to conduct as an **Consulting Organization Type (A)** under the Licensing Procedure for the Third Persons or Organizations Undertaking Initial Environmental Examination and Environmental Impact Assessment, approved by the Ministry of Natural Resources and Environmental Conservation.

လိုင်စင်နံပါတ် License Number	: EIA-CO(A)005/2024
ထုတ်ပေးသည့် ရက်စွဲ Date of Issue	: 30-7-2024
ကုန်ဆုံးသည့် ရက်စွဲ Date of Expiry	: 29-7-2027





(သိန်းတိုး)

ညွှန်ကြားရေးမှူးချုပ်



ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်အစိုးရ
The Government of the Republic of the Union of Myanmar
သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန
Ministry of Natural Resources and Environmental Conservation



ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန
Environmental Conservation Department

ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ငန်းလိုင်စင် (ပုဂ္ဂိုလ်)

Environmental Impact Assessment License (Individual)

ဦးရဲမြတ်ဘုန်းလှိုင်၊ ၁၂/သကတ(နိုင်)၁၈၀၁၆၆ အား တွဲဖက်အကြံပေးပုဂ္ဂိုလ်အဖြစ် လုပ်ကိုင်ဆောင်ရွက်ရန် ပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ငန်းလိုင်စင်ကို ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းနှင့် ပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ခြင်း ပြုလုပ်သည့် တတိယပုဂ္ဂိုလ် သို့မဟုတ် အဖွဲ့အစည်း လုပ်ငန်းလိုင်စင်ဆိုင်ရာ လုပ်ထုံး လုပ်နည်းနှင့် အညီ ဤဝန်ကြီးဌာန၏ အတည်ပြုချက်ဖြင့် ထုတ်ပေးလိုက်သည်။

It is hereby issued that U Ye Myat Phone Hlaing, 12/ThaKaTa(N)180166 has fulfilled the requirements for obtaining an Environmental Impact Assessment License to conduct as an **Associate Consultant** under the Licensing Procedure for the Third Persons or Organizations Undertaking Initial Environmental Examination and Environmental Impact Assessment, approved by the Ministry of Natural Resources and Environmental Conservation.

လေ့လာဆန်းစစ်ခွင့်ရှိသည့် ကျွမ်းကျင်မှုနယ်ပယ်များမှာ အောက်ပါအတိုင်းဖြစ်သည်-

The areas of expertise, eligible to be conducted, are as follows:

1. လေထုညစ်ညမ်းမှုစောင့်ကြပ်ကြည့်ရှုခြင်း (Air Pollution Monitoring)
- 2.
- 3.
- 4.
- 5.

လိုင်စင်နံပါတ် License Number : EIA-AC 114/2024


ထုတ်ပေးသည့် ရက်စွဲ Date of Issue : 2-10-2024

ကုန်ဆုံးသည့် ရက်စွဲ Date of Expiry : 1-10-2027



(သိန်းတိုး)

ညွှန်ကြားရေးမှူးချုပ်




ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်အစိုးရ
The Government of the Republic of the Union of Myanmar
သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန
Ministry of Natural Resources and Environmental Conservation
ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန
Environmental Conservation Department
ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ငန်းလိုင်စင် (ပုဂ္ဂိုလ်)
Environmental Impact Assessment License (Individual)

ဦးအောင်ဇေယျာဝင်း၊ ၁၂/မရက(နိုင်)၁၅၄၃၈၀ အား တွဲဖက်အကြံပေးပုဂ္ဂိုလ် အဖြစ် လုပ်ကိုင်ဆောင်ရွက်ရန် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ငန်းလိုင်စင်ကို ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းနှင့် ပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ခြင်း ပြုလုပ်သည့် တတိယပုဂ္ဂိုလ် သို့မဟုတ် အဖွဲ့အစည်း လုပ်ငန်းလိုင်စင်ဆိုင်ရာ လုပ်ထုံး လုပ်နည်းနှင့်အညီ ဤဝန်ကြီးဌာန၏ အတည်ပြုချက်ဖြင့် ထုတ်ပေးလိုက်သည်။



It is hereby issued that U Aung Zayar Wint, 12/MaRaKa(N)154380 has fulfilled the requirements for obtaining an Environmental Impact Assessment License to conduct as an Associate Consultant under the Licensing Procedure for the Third Persons or Organizations Undertaking Initial Environmental Examination and Environmental Impact Assessment, approved by the Ministry of Natural Resources and Environmental Conservation.


လေ့လာဆန်းစစ်ခွင့်ရှိသည့် ကျွမ်းကျင်မှုနယ်ပယ်များမှာ အောက်ပါအတိုင်းဖြစ်သည်-

The areas of expertise, eligible to be conducted, are as follows:

1. ဂေဟစနစ်နှင့် ဇီဝမျိုးစုံမျိုးကွဲ (Ecology and Biodiversity)
2. လေထုညစ်ညမ်းမှု ကြိုတင်ကာကွယ်ခြင်းနှင့် ထိန်းချုပ်ခြင်း (Air Pollution Prevention and Control)
- 3.
- 4.
- 5.

လိုင်စင်နံပါတ် License Number	: EIA-AC 008/2023
ထုတ်ပေးသည့် ရက်စွဲ Date of Issue	: 1-12-2023
ကုန်ဆုံးသည့် ရက်စွဲ Date of Expiry	: 30-11-2026


 (သိန်းတိုး)
 ညွှန်ကြားရေးမှူးချုပ်



ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်အစိုးရ
The Government of the Republic of the Union of Myanmar
သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန
Ministry of Natural Resources and Environmental Conservation
ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန
Environmental Conservation Department
ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ငန်းလိုင်စင် (ပုဂ္ဂိုလ်)
Environmental Impact Assessment License (Individual)



ဦးချစ်ဘိုဘိုဝင်း၊ ၁၂/လမန(နိုင်)၁၄၃၃၂၀ အား တွဲဖက်အကြံပေးပုဂ္ဂိုလ်အဖြစ် လုပ်ကိုင်ဆောင်ရွက်ရန် ပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ငန်းလိုင်စင်ကို ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းနှင့် ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်း ပြုလုပ်သည့် တတိယပုဂ္ဂိုလ် သို့မဟုတ် အဖွဲ့အစည်းလုပ်ငန်းလိုင်စင်ဆိုင်ရာ လုပ်ထုံးလုပ်နည်းနှင့် အညီ ဤဝန်ကြီးဌာန၏ အတည်ပြုချက်ဖြင့် ထုတ်ပေးလိုက်သည်။

It is hereby issued that U Chit Bo Bo Win, 12/LaMaNa(N)143320 has fulfilled the requirements for obtaining an Environmental Impact Assessment License to conduct as an **Associate Consultant** under the Licensing Procedure for the Third Persons or Organizations Undertaking Initial Environmental Examination and Environmental Impact Assessment, approved by the Ministry of Natural Resources and Environmental Conservation.

လေ့လာဆန်းစစ်ခွင့်ရှိသည့် ကျွမ်းကျင်မှုနယ်ပယ်များမှာ အောက်ပါအတိုင်းဖြစ်သည်-

The areas of expertise, eligible to be conducted, are as follows:

- ရေထုညစ်ညမ်းမှုကြိုတင်ကာကွယ်ခြင်း၊ထိန်းချုပ်ခြင်း၊စောင့်ကြပ်ကြည့်ရှုခြင်းနှင့်ထိခိုက်မှုကြိုတင် ခန့်မှန်းခြင်း (Water Pollution Prevention, Control, Monitoring and Prediction of Impacts)
- ဇလဗေဒ၊ မြေပေါ်ရေနှင့် မြေအောက်ရေထိန်းသိမ်းခြင်း (Hydrology, Surface Water and Ground Water Conservation)
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လိုင်စင်နံပါတ် License Number

: EIA-AC 120/2024

ထုတ်ပေးသည့် ရက်စွဲ Date of Issue

: 31-10-2024

ကုန်ဆုံးသည့် ရက်စွဲ Date of Expiry


: 30-10-2027






(သိန်းတိုး)

ညွှန်ကြားရေးမှူးချုပ်



ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်အစိုးရ
The Government of the Republic of the Union of Myanmar
သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန
Ministry of Natural Resources and Environmental Conservation
ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန
Environmental Conservation Department
ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ငန်းလိုင်စင် (ပုဂ္ဂိုလ်)
Environmental Impact Assessment License (Individual)



ဒေါ်မြတ်မွန်ဆွေ၊ ၁၂/အစန(နိုင်)၀၂၉၆၁၆ အား အကြံပေးပုဂ္ဂိုလ် အဖြစ် လုပ်ကိုင်ဆောင်ရွက်ရန် ပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ငန်းလိုင်စင်ကို ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းနှင့် ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်း ပြုလုပ်သည့် တတိယပုဂ္ဂိုလ် သို့မဟုတ် အဖွဲ့အစည်း လုပ်ငန်းလိုင်စင်ဆိုင်ရာ လုပ်ထုံးလုပ်နည်းနှင့် အညီ ဤဝန်ကြီးဌာန၏ အတည်ပြုချက်ဖြင့် ထုတ်ပေးလိုက်သည်။



It is hereby issued that **Daw Myat Mon Swe, 12/AhSaNa(N)029616** has fulfilled the requirements for obtaining an Environmental Impact Assessment License to conduct as an **Consultant** under the Licensing Procedure for the Third Persons or Organizations Undertaking Initial Environmental Examination and Environmental Impact Assessment, approved by the Ministry of Natural Resources and Environmental Conservation.


လေ့လာဆန်းစစ်ခွင့်ရှိသည့် ကျွမ်းကျင်မှုနယ်ပယ်များမှာ အောက်ပါအတိုင်းဖြစ်သည်-

The areas of expertise, eligible to be conducted, are as follows:

- လူမှုရေးဆိုင်ရာ လေ့လာခြင်းနှင့် သရုပ်ခွဲဆန်းစစ်ခြင်း (Social Study and Analysis)
- အထွေထွေပတ်ဝန်းကျင်စီမံခန့်ခွဲခြင်း (General Environmental Management)
- ပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး(လေ/ရေနှင့် မြေ) များအား စောင့်ကြပ်ကြည့်ရှုခြင်း (Environmental Quality Monitoring (Air, Water and Soil))
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လိုင်စင်နံပါတ် License Number	: EIA-C 018/2023
ထုတ်ပေးသည့် ရက်စွဲ Date of Issue	: 1-12-2023
ကုန်ဆုံးသည့် ရက်စွဲ Date of Expiry	: 30-11-2026





(သိန်းတိုး)

ညွှန်ကြားရေးမှူးချုပ်



ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်အစိုးရ
The Government of the Republic of the Union of Myanmar
သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန
Ministry of Natural Resources and Environmental Conservation
ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန
Environmental Conservation Department
ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ငန်းလိုင်စင် (ပုဂ္ဂိုလ်)
Environmental Impact Assessment License (Individual)

ဒေါ်စိုးမိုးနွယ်၊ ၉/၀၈/၂၀၁၄ (နိုင်) ၁၆၁၉၄၅ အား အကြံပေးပုဂ္ဂိုလ် အဖြစ် လုပ်ကိုင်ဆောင်ရွက်ရန် ပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ငန်းလိုင်စင်ကို ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းနှင့် ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်းပြုလုပ်သည့် တတိယပုဂ္ဂိုလ် သို့မဟုတ် အဖွဲ့အစည်း လုပ်ငန်းလိုင်စင်ဆိုင်ရာ လုပ်ထုံးလုပ်နည်းနှင့် အညီ ဤဝန်ကြီးဌာန၏ အတည်ပြုချက်ဖြင့် ထုတ်ပေးလိုက်သည်။

It is hereby issued that **Daw Soe Moe Nwe, 9/WaTaNa(N)161945** has fulfilled the requirements for obtaining an Environmental Impact Assessment License to conduct as an **Consultant** under the Licensing Procedure for the Third Persons or Organizations Undertaking Initial Environmental Examination and Environmental Impact Assessment, approved by the Ministry of Natural Resources and Environmental Conservation.

လေ့လာဆန်းစစ်ခွင့်ရှိသည့် ကျွမ်းကျင်မှုနယ်ပယ်များမှာ အောက်ပါအတိုင်းဖြစ်သည်-

The areas of expertise, eligible to be conducted, are as follows:

- လူမှုရေးဆိုင်ရာ လေ့လာခြင်းနှင့် သရုပ်ခွဲဆန်းစစ်ခြင်း (Social Study and Analysis)
- ဂေဟစနစ်နှင့် ဇီဝမျိုးစုံမျိုးကွဲ (Ecology and Biodiversity)
- စွန့်ပစ်အစိုင်အခဲနှင့် ဘေးအန္တရာယ်ရှိ စွန့်ပစ်ပစ္စည်းစီမံခန့်ခွဲခြင်း (Solid Waste and Hazardous Waste Management)
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လိုင်စင်နံပါတ် License Number	: EIA-C 030/2023
ထုတ်ပေးသည့် ရက်စွဲ Date of Issue	: 1-12-2023
ကုန်ဆုံးသည့် ရက်စွဲ Date of Expiry	: 30-11-2026





(သိန်းတိုး)

ညွှန်ကြားရေးမှူးချုပ်



ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်အစိုးရ
The Government of the Republic of the Union of Myanmar
သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန
Ministry of Natural Resources and Environmental Conservation
ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန
Environmental Conservation Department
ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ငန်းလိုင်စင် (ပုဂ္ဂိုလ်)
Environmental Impact Assessment License (Individual)

ဦးအာကာဖြိုး၊ ၁၂/အုကတ(နိုင်)၁၈၅၆၃၇ အား အကြံပေးပုဂ္ဂိုလ်အဖြစ် လုပ်ကိုင်ဆောင်ရွက်ရန် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ငန်းလိုင်စင်ကို ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းနှင့် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း ပြုလုပ်သည့် တတိယပုဂ္ဂိုလ် သို့မဟုတ် အဖွဲ့အစည်း လုပ်ငန်းလိုင်စင်ဆိုင်ရာ လုပ်ထုံးလုပ်နည်းနှင့်အညီ ဤဝန်ကြီးဌာန၏ အတည်ပြုချက်ဖြင့် ထုတ်ပေးလိုက်သည်။

It is hereby issued that U Arkar Phyo, 12/AuKaTa(N)185637 has fulfilled the requirements for obtaining an Environmental Impact Assessment License to conduct as an **Consultant** under the Licensing Procedure for the Third Persons or Organizations Undertaking Initial Environmental Examination and Environmental Impact Assessment, approved by the Ministry of Natural Resources and Environmental Conservation.

လေ့လာဆန်းစစ်ခွင့်ရှိသည့် ကျွမ်းကျင်မှုနယ်ပယ်များမှာ အောက်ပါအတိုင်းဖြစ်သည်-

The areas of expertise, eligible to be conducted, are as follows:

1. ဘေးအန္တရာယ်ရှိမှု ဆန်းစစ်ခြင်းနှင့် ဘေးအန္တရာယ်စီမံခန့်ခွဲခြင်း (Risk Assessment and Hazard Management)

2.

3.

4.

5.

လိုင်စင်နံပါတ် License Number



: EIA-C 059/2024


ထုတ်ပေးသည့် ရက်စွဲ Date of Issue

: 29-2-2024

ကုန်ဆုံးသည့် ရက်စွဲ Date of Expiry



: 28-2-2027




(သိန်းတိုး)
ညွှန်ကြားရေးမှူးချုပ်

Golden Lace POSCO International Co., Ltd

Page 12-11



ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်အစိုးရ
The Government of the Republic of the Union of Myanmar
သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန
Ministry of Natural Resources and Environmental Conservation
ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန
Environmental Conservation Department
ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ငန်းလိုင်စင် (ပုဂ္ဂိုလ်)
Environmental Impact Assessment License (Individual)

ဒေါ်သန်းသန်းဌေး၊ ၁၂/ဥကတ(နိုင်)၁၆၁၄၄၆ အား အကြံပေးပုဂ္ဂိုလ် အဖြစ် လုပ်ကိုင်ဆောင်ရွက်ရန် ပတ်ဝန်းကျင်
ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ငန်းလိုင်စင်ကို ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းနှင့် ပတ်ဝန်းကျင်ထိခိုက်မှု
ဆန်းစစ်ခြင်း ပြုလုပ်သည့် တတိယပုဂ္ဂိုလ် သို့မဟုတ် အဖွဲ့အစည်း လုပ်ငန်းလိုင်စင်ဆိုင်ရာ လုပ်ထုံးလုပ်နည်းနှင့်
အညီ ဤဝန်ကြီးဌာန၏ အတည်ပြုချက်ဖြင့် ထုတ်ပေးလိုက်သည်။
It is hereby issued that Daw Than Than Htay, 12/OuKaTa(N)161446 has fulfilled the requirements for
obtaining an Environmental Impact Assessment License to conduct as an Consultant under the
Licensing Procedure for the Third Persons or Organizations Undertaking Initial Environmental
Examination and Environmental Impact Assessment, approved by the Ministry of Natural Resources
and Environmental Conservation.

လေ့လာဆန်းစစ်ခွင့်ရှိသည့် ကျွမ်းကျင်မှုနယ်ပယ်များမှာ အောက်ပါအတိုင်းဖြစ်သည်-
The areas of expertise, eligible to be conducted, are as follows:

1. ဂေဟစနစ်နှင့် ဇီဝမျိုးစုံမျိုးကွဲ (Ecology and Biodiversity)

2.

3.



4.

5.

လိုင်စင်နံပါတ် License Number : EIA-C 045/2023

ထုတ်ပေးသည့် ရက်စွဲ Date of Issue : 29-12-2023

ကုန်ဆုံးသည့် ရက်စွဲ Date of Expiry : 28-12-2026



(သိန်းတိုး)
ညွှန်ကြားရေးမှူးချုပ်



ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်အစိုးရ
The Government of the Republic of the Union of Myanmar
သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန
Ministry of Natural Resources and Environmental Conservation
ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန
Environmental Conservation Department



ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ငန်းလိုင်စင် (ပုဂ္ဂိုလ်)
Environmental Impact Assessment License (Individual)

ဒေါက်တာဖြိုးသူအောင်၊ ၉/မသန(နိုင်)၁၁၇၄၂၈ အား တွဲဖက်အကြံပေးပုဂ္ဂိုလ် အဖြစ် လုပ်ကိုင်ဆောင်ရွက်ရန် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ငန်းလိုင်စင်ကို ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းနှင့် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း ပြုလုပ်သည့် တတိယပုဂ္ဂိုလ် သို့မဟုတ် အဖွဲ့အစည်း လုပ်ငန်းလိုင်စင်ဆိုင်ရာ လုပ်ထုံးလုပ်နည်းနှင့်အညီ ဤဝန်ကြီးဌာန၏ အတည်ပြုချက်ဖြင့် ထုတ်ပေးလိုက်သည်။

It is hereby issued that **Dr. Phyo Thu Aung, 9/MaThaNa(N)117428** has fulfilled the requirements for obtaining an Environmental Impact Assessment License to conduct as an **Associate Consultant** under the Licensing Procedure for the Third Persons or Organizations Undertaking Initial Environmental Examination and Environmental Impact Assessment, approved by the Ministry of Natural Resources and Environmental Conservation.

လေ့လာဆန်းစစ်ခွင့်ရှိသည့် ကျွမ်းကျင်မှုနယ်ပယ်များမှာ အောက်ပါအတိုင်းဖြစ်သည်-

The areas of expertise, eligible to be conducted, are as follows:

1. မိုးလေဝသနှင့် လေအရည်အသွေးဆန်းစစ်ခြင်းနှင့် ကြိုတင်ခန့်မှန်းခြင်း (Meteorology, Air Quality Assessment and Forecast)
2. ရေထုညစ်ညမ်းမှု ကြိုတင်ကာကွယ်ခြင်း၊ ထိန်းချုပ်ခြင်း၊ စောင့်ကြပ်ကြည့်ရှုခြင်းနှင့် ထိခိုက်မှု ကြိုတင်ခန့်မှန်းခြင်း (Water Pollution Prevention, Control, Monitoring and Prediction of Impacts)

- 3.
- 4.
- 5.

လိုင်စင်နံပါတ် License Number

: EIA-AC 092/2024

ထုတ်ပေးသည့် ရက်စွဲ Date of Issue

: 30-4-2024

ကုန်ဆုံးသည့် ရက်စွဲ Date of Expiry

: 29-4-2027



(သိန်းတိုး)
ညွှန်ကြားရေးမှူးချုပ်



ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်အစိုးရ
The Government of the Republic of the Union of Myanmar
သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန
Ministry of Natural Resources and Environmental Conservation
ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန
Environmental Conservation Department
ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ငန်းလိုင်စင် (ပုဂ္ဂိုလ်)
Environmental Impact Assessment License (Individual)



ဒေါ်အိအိဝင်းမြတ်၊ ၁၂/မာဘန(နိုင်)၁၄၆၇၄၀ အား တွဲဖက်အကြံပေးပုဂ္ဂိုလ် အဖြစ် လုပ်ကိုင်ဆောင်ရွက်ရန် ပတ်ဝန်းကျင်
ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ငန်းလိုင်စင်ကို ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းနှင့် ပတ်ဝန်းကျင်ထိခိုက်မှု
ဆန်းစစ်ခြင်း ပြုလုပ်သည့် တတိယပုဂ္ဂိုလ် သို့မဟုတ် အဖွဲ့အစည်း လုပ်ငန်းလိုင်စင်ဆိုင်ရာလုပ်ထုံးလုပ်နည်းနှင့်
အညီ ဤဝန်ကြီးဌာန၏ အတည်ပြုချက်ဖြင့် ထုတ်ပေးလိုက်သည်။

It is hereby issued that Daw Ei Ei Win Myat, 12/MaBaNa(N)146740 has fulfilled the requirements for
obtaining an Environmental Impact Assessment License to conduct as an **Associate Consultant** under
the Licensing Procedure for the Third Persons or Organizations Undertaking Initial Environmental
Examination and Environmental Impact Assessment, approved by the Ministry of Natural Resources
and Environmental Conservation.

လေ့လာဆန်းစစ်ခွင့်ရှိသည့် ကျွမ်းကျင်မှုနယ်ပယ်များမှာ အောက်ပါအတိုင်းဖြစ်သည်-

The areas of expertise, eligible to be conducted, are as follows:

- ဥပဒေရေးရာလေ့လာမှုနှင့် သရုပ်ခွဲဆန်းစစ်ခြင်း (Legal Study and Analysis)
-
-
-
-

လိုင်စင်နံပါတ် License Number	: EIA-AC 065/2024
ထုတ်ပေးသည့် ရက်စွဲ Date of Issue	: 31-1-2024
ကုန်ဆုံးသည့် ရက်စွဲ Date of Expiry	: 30-1-2027





(သိန်းတိုး)

ညွှန်ကြားရေးမှူးချုပ်




ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်အစိုးရ
The Government of the Republic of the Union of Myanmar
သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန
Ministry of Natural Resources and Environmental Conservation
ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန
Environmental Conservation Department
ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ငန်းလိုင်စင် (ပုဂ္ဂိုလ်)
Environmental Impact Assessment License (Individual)

ဦးအောင်ငြိမ်းမြတ်၊ ၁၃/တကန(နိုင်)၂၀၃၂၄၈ အား တွဲဖက်အကြံပေးပုဂ္ဂိုလ် အဖြစ် လုပ်ကိုင်ဆောင်ရွက်ရန် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ငန်းလိုင်စင်ကို ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းနှင့် ပတ်ဝန်းကျင် ထိန်းသိမ်းရေးဆန်းစစ်ခြင်း ပြုလုပ်သည့် တတိယပုဂ္ဂိုလ် သို့မဟုတ် အဖွဲ့အစည်း လုပ်ငန်းလိုင်စင်ဆိုင်ရာလုပ်ထုံး လုပ်နည်းနှင့်အညီ ဤဝန်ကြီးဌာန၏ အတည်ပြုချက်ဖြင့် ထုတ်ပေးလိုက်သည်။
It is hereby issued that U Aung Nyein Myat, 13/TaKaNa(N)203248 has fulfilled the requirements for obtaining an Environmental Impact Assessment License to conduct as an Associate Consultant under the Licensing Procedure for the Third Persons or Organizations Undertaking Initial Environmental Examination and Environmental Impact Assessment, approved by the Ministry of Natural Resources and Environmental Conservation.

လေ့လာဆန်းစစ်ခွင့်ရှိသည့် ကျွမ်းကျင်မှုနယ်ပယ်များမှာ အောက်ပါအတိုင်းဖြစ်သည်-
The areas of expertise, eligible to be conducted, are as follows:



1. ဘူမိဆိုင်ရာ ဆန်းစစ်လေ့လာခြင်း (Geological Assessment)
2. မြေအသုံးချမှု (Land Use)
- 3.
- 4.
- 5.

လိုင်စင်နံပါတ် License Number	: EIA-AC 013/2023
ထုတ်ပေးသည့် ရက်စွဲ Date of Issue	: 1-12-2023
ကုန်ဆုံးသည့် ရက်စွဲ Date of Expiry	: 30-11-2026





 (သိန်းတိုး)
 ညွှန်ကြားရေးမှူးချုပ်



ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်အစိုးရ
The Government of the Republic of the Union of Myanmar
သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန
Ministry of Natural Resources and Environmental Conservation
ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန
Environmental Conservation Department
ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ငန်းလိုင်စင် (ပုဂ္ဂိုလ်)
Environmental Impact Assessment License (Individual)

ဒေါက်တာဟိန်းလင်းအောင်၊ ၁၂/စခန(နိုင်)၀၆၄၈၈၁ အား တွဲဖက်အကြံပေးပုဂ္ဂိုလ် အဖြစ် လုပ်ကိုင်ဆောင်ရွက်ရန် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ငန်းလိုင်စင်ကို ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းနှင့် ပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ခြင်း ပြုလုပ်သည့် တတိယပုဂ္ဂိုလ် သို့မဟုတ် အဖွဲ့အစည်း လုပ်ငန်းလိုင်စင်ဆိုင်ရာလုပ်ထုံး လုပ်နည်းနှင့်အညီ ဤဝန်ကြီးဌာန၏ အတည်ပြုချက်ဖြင့် ထုတ်ပေးလိုက်သည်။

It is hereby issued that Dr.Hein Lin Aung, 12/SaKhaNa(N)064881 has fulfilled the requirements for obtaining an Environmental Impact Assessment License to conduct as an Associate Consultant under the Licensing Procedure for the Third Persons or Organizations Undertaking Initial Environmental Examination and Environmental Impact Assessment, approved by the Ministry of Natural Resources and Environmental Conservation.

လေ့လာဆန်းစစ်ခွင့်ရှိသည့် ကျွမ်းကျင်မှုနယ်ပယ်များမှာ အောက်ပါအတိုင်းဖြစ်သည်-
The areas of expertise, eligible to be conducted, are as follows:

1. ကျန်းမာရေး (Health (Impact Studies and Analysis))

2.

3.

4.

5.

လိုင်စင်နံပါတ် License Number



ထုတ်ပေးသည့် ရက်စွဲ Date of Issue

ကုန်ဆုံးသည့် ရက်စွဲ Date of Expiry

EIA-AC 052/2023

1-12-2023

30-11-2026



(သိန်းတိုး)
ညွှန်ကြားရေးမှူးချုပ်

Golden Lace POSCO International Co., Ltd

Page 12-16

ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်အစိုးရ
The Government of the Republic of the Union of Myanmar
သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန
Ministry of Natural Resources and Environmental Conservation
ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန
Environmental Conservation Department
ပတ်ဝန်းကျင်ထိန်းသိမ်းမှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ငန်းလိုင်စင် (ပုဂ္ဂိုလ်)
Environmental Impact Assessment License (Individual)

ဦးသန်းထွဋ်၊ ၁၂/ပဇာ(နိုင်)၀၀၇၀၄၉ အား တွဲဖက်အကြံပေးပုဂ္ဂိုလ် အဖြစ် လုပ်ကိုင်ဆောင်ရွက်ရန် ပတ်ဝန်းကျင်
ထိန်းသိမ်းမှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ငန်းလိုင်စင်ကို ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းနှင့် ပတ်ဝန်းကျင်ထိန်းသိမ်းမှု
ဆန်းစစ်ခြင်း ပြုလုပ်သည့် တတိယပုဂ္ဂိုလ် သို့မဟုတ် အဖွဲ့အစည်း လုပ်ငန်းလိုင်စင်ဆိုင်ရာ လုပ်ထုံးလုပ်နည်းနှင့် အညီ
ဤဝန်ကြီးဌာန၏ အတည်ပြုချက်ဖြင့် ထုတ်ပေးလိုက်သည်။
It is hereby issued that U Than Htut, 12/PaZaTa(N)007049 has fulfilled the requirements for obtaining
an Environmental Impact Assessment License to conduct as an **Associate Consultant** under the
Licensing Procedure for the Third Persons or Organizations Undertaking Initial Environmental
Examination and Environmental Impact Assessment, approved by the Ministry of Natural Resources
and Environmental Conservation.

လေ့လာဆန်းစစ်ခွင့်ရှိသည့် ကျွမ်းကျင်မှုနယ်ပယ်များမှာ အောက်ပါအတိုင်းဖြစ်သည်-
The areas of expertise, eligible to be conducted, are as follows:

၁. ရှေးဟောင်းသုတေသနနှင့် ယဉ်ကျေးမှုအမွေအနှစ်(Archaeological and Cultural Heritage)
- ၂.
- ၃.
- ၄.
- ၅.

လိုင်စင်နံပါတ် License Number : EIA-AC 104/2024
ထုတ်ပေးသည့် ရက်စွဲ Date of Issue : 31-8-2024
တုန့်ဆုံးသည့် ရက်စွဲ Date of Expiry : 30-8-2027


(သိန်းတိုး)
အကြံပေးရေးမှူးချုပ်

APPENDIX E: CVS OF SUPPORTING MEMBERS OF ENVCC

Aung Kaung Myat

Consultant

(Air Pollution Control, Noise and Vibration)



(6) years of experiences in environmental surveying and analyzing of physical and chemical characteristic (air, water, noise, vibration, soil, sediments, ground water and traffic control), participating in social surveying and biodiversity surveying as assistant consultant and also capable for liaising with governmental departments for the environmental related projects and EIA, IEE and EMP by the requirements of Myanmar Environmental Impact Assessments Procedure and National Environmental Quality (Emission) Guideline, IFC Standards, WHO Standard, JICA Guidelines, Environmental, Health, Safety and Social-EHSS Safeguard Screening.

EDUCATION

- Master of Science and Engineering (Environmental Planning and Management) Yangon Technological University (YTU), Myanmar (2016-2017)
- Post-graduate Diploma (Civil Service Management) Central Institute of Civil Service Academy, Upper Myanmar (2019)
- Bachelor of Engineering (Port and Harbor Engineering), Myanmar Maritime University (MMU) Myanmar (2009-2014)
- Post-graduate Diploma (Environmental Planning and Management) Yangon Technological University (YTU), Myanmar (2015-2016)

EMPLOYMENT

- Senior Consultant, Environmental Compliance Consultancy Co., Ltd. (ECC), (July 2020 to now) www.envccmyanmar.com
- Environmental Specialist, Yooshin JV (GMS Project ADB), (August 2020 – February 2021)
- Environmental Consultant (Freelance), Environmental, Social and Legal Consulting Group, (March 2020 - July 2020)
- Staff Officer, Environmental Conservation Department (Ministry of Natural Resources and Environmental Conservation), (May 2019 - February 2020)
- Junior Environment Expert (Project Based), Myanmar KOEI International Ltd, (April 2017 – April 2019)
- Project Assistant (Freelance), Hydro-Informatics Center (HIC), (June 2015 - June 2016)
- Study Guide & Teacher, Success Education and Training Center, (March 2008 - March 2017)

PROFESSIONAL AFFILIATIONS & REGISTRATIONS

- Member of Myanmar Engineering Society (MES)

FIELDS OF COMPETENCE

- Environmental Impact Assessment (EIA)
- Initial Environmental Examination (IEE)
- Environmental Management Plan (EMP)
- Environmental Monitoring
- Stakeholder Engagement
- Occupational Health and Safety

TRAINING

- Air Modelling:
- Building Acoustics and Noise Control
- Safety Supervisor Certificate (Global Enchanting Safety and Management Training Center)
- Occupational Safety & Health Orientation (Global Enchanting Safety and Management Training Center)

LANGUAGES

Myanmar, English

CONTACT DETAILS

No.13, Padonmar Road, South Myoma Quarter, Thanlyin Township, Yangon, Myanmar

Mobile: +95 (0) 9254037027

Email: aungkaungmyat@envccmyanmar.com
aungkaungmyat.envcc@gmail.com

KEY PROJECTS' EXPERIENCE

OFFSHORE AND ONSHORE

- **Environmental Monitoring Report for YETAGUN (Offshore) Production Activities (2023):** Updating of the EMP report of YETAGUN Production Facilities written up by Environmental Recourses Management (ERM) as ECD's comments.
- **Environmental Monitoring Report for YETAGUN (Onshore) Production Activities (2023):** Updating of the EMP report of YETAGUN Production Facilities written up by Environmental Recourses Management (ERM) as ECD's comments.
- **Environmental Monitoring Report (Update) for Shwe Field Development for POSCO International (2023):** Updating of the EMP report written up by Environmental Recourses Management (ERM) as ECD's comments.
- **Environmental and Social Due Diligence for YETAGUN Onshore (Pipeline Operation Centre-POC), Petronas, (2022).** The role was for environmental performance.
- **Environmental and Social Performance Review for YETAGUN Offshore Petronas, (2022).** The role was for environmental performance.

POWER

- **EMP for 50MW Gas Power Plant Project (2023-ongoing Project),** Hlawga, Mingalardon Township, Yangon Region, Conducting environmental baseline survey, stakeholder engagement and facilitation meeting.
- **ESIA for Paung Daw Gyi Hydropower Project 22 MW, Dawei, Pan Theingi (2022-ongoing).** ESIA for Hydropower in Dawei including Baseline monitoring, Traffic Survey and documentation to ensure it meets Myanmar national EIA Procedure and National standards.
- **IEE for Upper Ye Hydropower Project 10 MW, Ye, South-East General Energy and Power Co., Ltd. (2022-ongoing).** IEE for Hydropower in Ye including Baseline monitoring, Traffic Survey and documentation to ensure it meets Myanmar national EIA Procedure and National standards.
- **Environmental Monitoring for the renovation of Combine Cycle Power Plant Project, Yangon, MKI (November 2018 – February 2019)** Environmental Monitoring for the renovation of Combine Cycle Power Plant in Yangon (Tharkata). The work includes Baseline data surveying for environmental assessment and current situations of the power plant.



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BRIDGE CONSTRUCTION

- **Vibration level Monitoring for Bago Bridge II Project, Yangon, MKI (2018).** The role was supporting as a Site In charge for vibration level monitoring that is required for ESIA study.

INFRASTRUCTURE

- **IEE for Fuel Station Project, Yangon, Brighter Energy Retail Co., Ltd. (2021-ongoing).** IEE for Fuel Station in Yangon (Insein) including Baseline monitoring, Traffic Survey and documentation to ensure it meets Myanmar national EIA Procedure and National standards.
- **IEE for Fuel Station Project, Yangon, Brighter Energy Retail Co., Ltd. (2021-ongoing).** IEE for Fuel Station in Yangon (Htauk Kyant) including Baseline monitoring, Traffic Survey and documentation to ensure it meets Myanmar national EIA Procedure and National standards.
- **Greater Mekong Sub-region Highway Modernization Project (Detail Design Phase), Yangon, Yooshin (August 2020-February 2021):** Environmental specialist for assisting and supporting the International Environmental Specialist and also prepare and conduct the environmental monitoring compliance with IEE and assisting and providing the trainings.
- **Greater Yangon Water Supply Improvement Project Phase II, Yangon, YCDC, TECI (JICA Loan Project) (October 2018 – April 2019):** As a national environmental expert, responsible for documentation, site surveying, preparing documents, liaison between client (governmental organizations) and contractors as National consultant for the implementation of the project and also, reviewing and commenting to the reports prepared by third party for EIA report and submitted to ECD and cooperation and in-charging for drone survey along the project area. Minimize the impact on the existing land use through careful investigation in the planning process, investigate the status of land ownership for appropriate alteration of land use in the planning process, minimize the number of affected persons in the process of planning and designing, and prepare the Resettlement Action Plan (RAP) if a large number of the affected persons are identified in order to minimize the impact of land acquisition according to JICA, World Bank Operational Policy and Host Country Laws and Policy relevance with land acquisition. Identify, interview, process cases identified for resettlement, provide counselling to Project Affected Persons (PAPs) individually or group discussion, monitor activities for resettlement and dealing with Grievance mechanism, Compensation Process according to RAPs. Maintain regular contact and close communication with PAPs and timely reported about their requests and issues to PMU and respond feedbacks to them accordance with procedures, policy and laws.
- **Environmental Monitoring for Eco-smart city project, Yangon, MKI (January 2019 - February 2019)** Working as an environmental expert, conducting baseline surveying, analysis and preparing the monitoring report.
- **Tide Level survey in Thilawa SEZ project, Yangon, MKI (October 2018)** Conducting baseline surveying of environmental assessment (especially tide level at four points) near the project area and analyzing and reporting to the client about the current situation.
- **Thilawa New Port Extension Phase II project, Yangon, MKI (October 2018 – November 2018)** The role as an environmental in-charge for water quality sampling, analysis and biodiversity survey and participation in IEE report preparation.



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- **Environmental Management Plan (EMP) for the renovation of school Project, Yangon, MKI (August 2018)** The role was an environmental expert for site surveying, Data Collection and EMP report preparation for the renovation of school in Yangon region.
- **Environmental Monitoring for a serviced apartment Project, Yangon, MKI (August 2018)** Working as site in charge for baseline surveying of ambient environment such as air, water and noise and vibration and soil quality analysis for Environmental Impact Assessment (EIA) study of a serviced apartment in Yangon Region.
- **Traffic Volume Survey for the health-care centre Project, Yangon, MKI (June 2018)** Supervising traffic volume survey and analysis for Environmental Impact Assessment (EIA) study as a environmental expert.
- **Yangon Circular Railway Improvement Project (F.S), Yangon, MKI/NK (2016-2017)** The role was an environmental surveyor for Baseline surveying such as air quality, noise and vibration survey and analysis for F.S.

INDUSTRIES

- **Environmental Monitoring and reports preparation for Thilawa SEZ (A & B), Yangon, MKI (April 2017 – April 2019)** Environmental Monitoring during Operational of Thilawa Special Economic Zone (SEZ) (Zone A) and Environmental Monitoring during Construction of Thilawa SEZ (Zone B) and preparing monitoring reports according to the EIA report of Zone A and Zone B respectively. The results of Environmental Monitoring are announced to the Public at the website of the Thilawa SEZ developer.
- **Environmental & Social (monitoring & surveying) for Thilawa SEZ (Locator), Yangon, MKI (April 2017 – April 2019):** Environmental Monitoring during Operational of locators in Thilawa Special Economic Zone (SEZ-A) according to the EIA report of locators in SEZ and new EIA reports preparation. Cooperating and presenting about the related project at the Public Consultation Meetings (PCMs) and discussing and consulting to the project affected persons and stakeholders, collecting their comments and responding their feedbacks binding on EIA reports.
- **Garment factory, Inland Port, Fuel Terminal, Yangon, Environmental, Social and Legal Consulting Group (March 2020 - July 2020).** The role was a Local Consultant of environment including client liaison, Social and environmental baseline and impact assessment and preparation of the EIA/IEE Reports to local Myanmar requirements.
- **Environmental Monitoring at Beverage factory Project, Yangon, MKI (July 2018)** Supervising for water sampling and preparing monitoring report for the beverage factory.

WORKED AT GOVERNMENT BODIES AND OTHERS

- **Environmental Impact Assessment Division (ECD), Nay Pyi Taw, Environmental Conservation Department (Ministry of Natural Resources and Environmental Conservation) (May 2019 – February 2020)** As a staff officer, take responsible for reviewing and commenting on EIA, IEE, EMP, RAP and other reports. liaison between clients/ proponents for projects of EIA process and other meetings held by or related with EIA sector and responsible as a counter-part for the training supported by international organizations.
- **PROJECT ASSISTANCE AT HYDRO INFORMATICS CENTER (HIC), Yangon, (June 2015 – June 2016)** According to the role of project

assistant at the HIC office, supporting office works and Young Water Professional (YWP) training program. The project is for assisting excursions of the HIC department and YWP field trips and also assisting the meetings of HIC members with the government officer and NGOs and public consulting meetings organized by the Advisory Group (AG) of the National Water Resources Committee (NWRC).

- **Study on existing Solid Waste Management (SWM) System in YTU campus, Yangon, Yangon Technological University (YTU) (January 2017 – June 2017)** preparing the systematic SWM system for YTU campus to become campus area will be clean and hygienic and reduce the volume of waste and determine the ways of final disposal than the dumping within campus.
- **A study of sedimentation characteristics at the confluence of Yangon, Pazundaung Creek and Bago River, Yangon, Myanmar Maritime University (MMU) (June 2013 – January 2014)** Responsible as a field surveyor of Yangon River, Bago River and Pazundaung Creek (ebb and flood tide) for spring and neap tide conditions. Estimating the sediment particle sizes, sediment concentration (g/l) and salinity to determine the sediment discharge rate of these three rivers. This study can provide the useful data for future research related to the improvement of Yangon River access channel.
- **Ports and Terminals in Yangon Division (Myanmar Port Authority branches, Botahaung Warehouse, Warden port, Myanmar International Terminal Thilawa, Asia World Port Terminal), Yangon, Myanmar Port Authority (MPA) & Myanmar Maritime University (MMU) (September 2010 – November 2012)** Responsible as a researcher to coordinate with management team for the studying the existing design and develop Port & Terminal operation and Port & Harbour projects.
- **Teaching and Training for High School Students, Yangon, Success Education and Training Center) (March 2008 – March 2017)** Responsible for guiding the students not only about their school's subjects with practically through internet or observations through surrounding atmosphere but also their ethics and moral to be a good person and to become successful in their futures.





ရန်ကုန်နည်းပညာတက္ကသိုလ်

အင်ဂျင်နီယာသိပ္ပံမဟာဘွဲ့

..... ဦးဝင်း ဖြိုင် ၏ သား/ညီမိမိ အောင်အောင်ကောင်းမြတ် အား
အင်ဂျင်နီယာသိပ္ပံမဟာဘွဲ့ (..... မဟာဝိဇ္ဇာဘွဲ့ရရှိသူ ဦးဝင်းမြတ်)
ကို အပ်နှံချီးမြှင့်လိုက်သည်။

MAY 2017

နိုင်ငံသားစိစစ်ရေးကတ်ပြားအမှတ် ၁၂/သကနု(နိုင်) ၁၈၅၁၈၉
ဘွဲ့ရမှတ်ပုံတင်အမှတ် 28527



..... ဦးဝင်းဖြိုင်
ဧည့်သည်
ရန်ကုန်နည်းပညာတက္ကသိုလ်
.....

.....
ပါမောက္ခချုပ်
ရန်ကုန်နည်းပညာတက္ကသိုလ်
.....

ရက်စွဲ၊ ၂၀၁၈ ခု မလ္လာ လ ၁၀ ရက်



ရန်ကုန်နည်းပညာတက္ကသိုလ်

ဘွဲ့လွန်ဒီပလိုမာ

ဦးဝင်းမြိုင်

၏ သား/အမီး မောင်အောင်မောင်မြင့် အား

ဘွဲ့လွန်ဒီပလိုမာ (မဟာဝိဇ္ဇာ ကျောင်းမှ ဝိဇ္ဇာဘွဲ့)

ကို အပ်နှံချီးမြှင့်လိုက်သည်။

MAY 2016

နိုင်ငံသားစိစစ်ရေးကတ်ပြားအမှတ် ပျ/သလန (မျိုး) ၁၈၅၀၀၉

ဘွဲ့ရမှတ်ပုံတင်အမှတ် 28313



ဦးဝင်းမြိုင်
မောင်ကွန်းထိန်း

ရန်ကုန်နည်းပညာတက္ကသိုလ်

ပါမောက္ခချုပ်

ရန်ကုန်နည်းပညာတက္ကသိုလ်

ရက်စွဲ၊ ၂၀၁၇ ခု မတ်လ ၁၈ ရက်

Myanmar Maritime University



The University has this day conferred the Degree of

BACHELOR OF ENGINEERING

.Port & Harbour Engineering

upon Mq Aung Kaung Myat

son/daughter of U Win Hlaing

National Registration Number

12/Thalana (N) 105109

Graduate Registration Number

2160



M. M. Win Shein

Registrar

Myanmar Maritime University

Rector

Myanmar Maritime University

Date : 8-2-2014

မြန်မာနိုင်ငံရေကြောင်းပညာတက္ကသိုလ်



အင်ဂျင်နီယာဘွဲ့.

.....ဦးဝင်းလျှိုင်..... ၏သား/သမီး

.မောင်အောင်ကောင်းမြတ် အား

အင်ဂျင်နီယာဘွဲ့. (.ဆိပ်ကမ်းအင်ဂျင်နီယာ.....)

ကို အပ်နှံချီးမြှင့်လိုက်သည်။

နိုင်ငံသားစိစစ်ရေးကော်မရှင်အမှတ်

၁၂/သလန(နိုင်)၁၀၅၁၀၉

ဘွဲ့ရမှတ်ပုံတင်အမှတ်

.....၂၁၆၀.....

၄၂၄၂၀၆၇

မော်ကွန်းထိန်း

မြန်မာနိုင်ငံရေကြောင်းပညာတက္ကသိုလ်

ပါမောက္ခချုပ်

မြန်မာနိုင်ငံရေကြောင်းပညာတက္ကသိုလ်

နေ့စွဲ၊ ၁-၂-၂၀၁၄







Aye Chan Wutyee

Senior Consultant



(5) years of experiences in environmental surveying and analyzing of physical and chemical characteristic (air, water, noise, vibration, soil, sediments, ground water and traffic control), participating in social surveying and biodiversity surveying as assistant consultant and also capable for liaising with governmental departments for the environmental related projects and EIA, IEE and EMP by the requirements of Myanmar Environmental Impact Assessments Procedure and National Environmental Quality (Emission) Guideline, IFC Standards, WHO Standard, JICA Guidelines, Environmental, Health, Safety and Social-EHSS Safeguard Screening.

EDUCATION

- Bachelor of Engineering (Naval Architecture & Ocean Engineering), Myanmar Maritime University (MMU) Myanmar (2009-2014)
- Post-graduate Diploma (Environmental Planning and Management) Yangon Technological University (YTU), Myanmar (2015-2016)
- Master of Science and Engineering (Environmental Planning and Management) Yangon Technological University (YTU), Myanmar (2016-2017)
- Post-graduate Diploma (Civil Service Management) Central Institute of Civil Service Academy, Upper Myanmar (2019)

EMPLOYMENT

- Consultant, Environmental Compliance Consultancy Co., Ltd. (ECC), (July 2020 to now) www.envccmyanmar.com
- Environmental and Social Consultant (Freelance), Environmental, Social and Legal Consulting Group, (March 2020 - July 2020)
- Staff Officer, Environmental Conservation Department (Ministry of Natural Resources and Environmental Conservation), (May 2019 - February 2020)
- Junior Environmental and Social Expert (Project Based), Myanmar KOEI International Ltd, (April 2017 – April 2019)
- Project Assistant (Freelance), Myanmar Environment Sustainable Conservation-MESC, (June – October 2016)
- Project Assistant, Hydro-Informatics Center (HIC), (June 2015 - June 2016)
- Study Guide & Teacher, Success Education and Training Center, (March 2008 - March 2017)

PROFESSIONAL AFFILIATIONS & REGISTRATIONS

- Member of Myanmar Engineering Society (MES)

FIELDS OF COMPETENCE

- Environmental Impact Assessment (EIA)
- Initial Environmental Examination (IEE)
- Environmental Management Plan (EMP)
- Environmental Monitoring
- Stakeholder Engagement
- Occupational Health and Safety

TRAINING

- MS Word, MS Excel, MS PowerPoint, Internet and Email (i-office) (KMD)
- NK-GIAS (MES, Nippon Koei Co., Ltd. Japan)
- AutoCAD (Future Engineering Generation)
- ICT Training Course (Central Institute of Civil Service Academy)
- Safety Supervisor Certificate (Global Enchanting Safety and Management Training Center)
- Occupational Safety & Health Orientation (Global Enchanting Safety and Management Training Center)

LANGUAGES

Myanmar, English



Environmental Compliance Consultancy Co., Ltd

CONTACT DETAILS

No.616, Min Latwar Road, 12th Quarter, East Dagon Township, Yangon, Myanmar

Mobile: +95 (0) 9451567101

Email: ayechanwutyee@envccmyanmar.com
ayechanwutyee.envcc@gmail.com

KEY PROJECTS' EXPERIENCE

OFFSHORE AND ONSHORE

- **Environmental Impact Assessment Report for Exploration Drilling in Offshore Block M-15 of CFG Co, Ltd (2023-ongoing)**, ESIA for Offshore Drilling Project in Kyauk Phyu, Rakhine State including Waste Impact Assessment and Social Impact Assessment to ensure it meets Myanmar national EIA Procedure and International standards.
- **Environmental Impact Assessment Report for Shwe Field Phase -4 Development for POSCO International (2023-ongoing)**, ESIA for Offshore Drilling Project in Kyauk Phyu, Rakhine State including Waste Impact Assessment and Social Impact Assessment to ensure it meets Myanmar national EIA Procedure and International standards.
- **Environmental Monitoring Report for YETAGUN (Offshore) Production Activities (2023)**: Updating of the EMP report of YETAGUN Production Facilities written up by Environmental Recourses Management (ERM) as ECD's comments.
- **Environmental Monitoring Report for YETAGUN (Onshore) Production Activities (2023)**: Updating of the EMP report of YETAGUN Production Facilities written up by Environmental Recourses Management (ERM) as ECD's comments.
- **Environmental Monitoring Report (Update) for Shwe Field Development for POSCO International (2023)**: Updating of the EMP report written up by Environmental Recourses Management (ERM) as ECD's comments.
- **Environmental and Social Due Diligence for YETAGUN Onshore (Pipeline Operation Centre-POC), Petronas, (2022)**. The role was for environmental performance.
- **Environmental and Social Performance Review for YETAGUN Offshore Petronas, (2022)**. The role was for environmental performance.

POWER

- **EMP for 50MW Gas Power Plant Project (2023)**, Hlawga, Mingalardon Township, Yangon Region, Team leader for Social Impact Assessments.
- **ESIA for Paung Daw Gyi Hydropower Project 22 MW, Dawei, Pan Theingi (2022-2023)**. ESIA for Hydropower in Dawei including social assessment, Traffic Survey, waste

management and documentation to ensure it meets Myanmar national EIA Procedure and National standards.

- **IEE for Upper Ye Hydropower Project 10 MW, Ye, South-East General Energy and Power Co., Ltd. (2022-ongoing).** IEE for Hydropower in Ye including social assessment, Traffic Survey, waste management and documentation to ensure it meets Myanmar national EIA Procedure and National standards.
- **IEE for Fuel Station Project, Yangon, Brighter Energy Retail Co., Ltd. (2021-ongoing).** IEE for Fuel Station in Yangon (Insein) including social assessment, Traffic Survey, waste management and documentation to ensure it meets Myanmar national EIA Procedure and National standards.
- **IEE for Fuel Station Project, Yangon, Brighter Energy Retail Co., Ltd. (2021-ongoing).** IEE for Fuel Station in Yangon (Htauk Kyant) including social assessment, Traffic Survey, waste management and documentation to ensure it meets Myanmar national EIA Procedure and National standards.

INFRASTRUCTURE

- **Implementation of Yangon Solid Waste Management Master Plan (Phase 1), Yangon, YCDC, TECI (JICA Loan Project) (November 2018 – April 2019):** The role as an environmental and social expert (national) for arranging appointment with government official, documentation and liaison between government and third party, site surveying to final disposal sites in Yangon area and Yangon Waste to Energy Plant as well as data collection and analysis for the solid waste collection, sorting, transportation and disposal system in Yangon region.
- **Thilawa New Port Extension Phase II project, Yangon, MKI (October 2018 – November 2018)** The role was an environmental in-charge for water quality sampling, analysis and biodiversity survey and documentation to ensure it meets Myanmar national EIA Procedure and National standards.
- **Environmental Monitoring and EIA report preparation for a serviced apartment Project, Yangon, MKI (August 2018 – February 2019)** Conducting the social survey, analysing environmental qualities monitoring and documentation to ensure it meets Myanmar national EIA Procedure and National standards as an environmental and social expert.
- **Yangon Circular Railway Improvement Project (F.S), Yangon, MKI/NK (2016-2017)** The role was an environmental surveyor for Baseline surveying and analysing (air quality, noise and vibration) for F.S survey report.
- **MAX Myanmar Cement Project (EIA), Lei Way, Naypyitaw Council Area (2016)** The role was a Freelance environmental surveyor for Baseline Survey for Ambient Air Quality, Water Quality, Noise and vibration.

INDUSTRIES

- **Environmental Monitoring and reports preparation for Thilawa SEZ (A & B), Yangon, MKI (April 2017 – April 2019)** Environmental Monitoring during Operational of Thilawa Special Economic Zone (SEZ) (Zone A) and Environmental Monitoring during Construction of Thilawa SEZ (Zone B) and preparing monitoring reports according to the EIA report of Zone A and Zone B respectively. The results of Environmental Monitoring are announced to the Public at the website of the Thilawa SEZ developer.
- **Environmental & Social (monitoring & surveying) for Thilawa SEZ (Locator), Yangon, MKI (April 2017 – April**

2019): Environmental Monitoring during Operational of locators in Thilawa Special Economic Zone (SEZ-A) according to the EIA report of locators in SEZ and new EIA reports preparation. Cooperating and presenting about the related project at the Public Consultation Meetings (PCMs) and discussing and consulting to the project affected persons and stakeholders, collecting their comments and responding their feedbacks binding on EIA reports.

- **Garment factory, Inland Port, Fuel Terminal, Yangon, Environmental, Social and Legal Consulting Group (March 2020 - July 2020).** The role was a Local Consultant of environment including client liaison, Social and environmental baseline and impact assessment and documentation to ensure it meets Myanmar national EIA Procedure and National standards.
- **Environmental Monitoring EMP report preparation for Beverage factory Project, Yangon, MKI (July 2018 - December 2018)** Working as an environmental and social expert for water sampling and monitoring of water quality, questionnaire surveying to the staffs and relevant officers of the factory, documentation to ensure it meets Myanmar national EIA Procedure and National standards.
- **EMP for Instant Coffee Mix and Tea Mix Manufacturing Project, Yangon (Dagon Seik Kan), MKI (October 2017 - January 2018)** Conducting social survey with team and documentation to ensure it meets Myanmar national EIA Procedure and National standards.

WORKED AT GOVERNMENT BODIES AND OTHERS

- **Planning, GIS and Statistics Division (ECD), Nay Pyi Taw, Environmental Conservation Department (Ministry of Natural Resources and Environmental Conservation) (May 2019 – February 2020)** The role was a Staff Officer arranging the meetings and workshops with international organizations and relevant governmental organizations and supporting the data to Central Statistical Organization (CSO) for the implementation of National Indicator Framework (NIF). Responsible for the collection of working progresses from each division at ECD, organizing and reporting National Planning Annually, Six-monthly and Three-monthly reports to the MONREC and supporting the National Environmental Conservation and Climate Change Central Committee (NECCCCC) and the meetings of the Working Committee related to the policy, laws, by-laws, procedures and standards.
- **Project assistance at Hydro Informatics Center (HIC), Yangon, (June 2015 – June 2016)** According to the role of project assistant at the HIC office, supporting office works and Young Water Professional (YWP) training program. The project is for assisting excursions of the HIC department and YWP field trips and assisting the meetings of HIC members with the government officer and NGOs and public consulting meetings organized by the Advisory Group (AG) of the National Water Resources Committee (NWRC).
- **Study on the composting of food wastes project in YTU, Yangon, Yangon Technological University (YTU) (January 2017 – June 2017)** Data collection and analysis of the food wastes generation for the YTU Campus and compost these food wastes by two types (Pit and In-vessel). Analysing the nutrient results for the two types of composts at the laboratory of Land Use Division, Department of Agriculture, Ministry of Agriculture, Livestock and Irrigation. Comparing the qualities of two types of composts by sowing plants. Recommending for the food waste composting methods in



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PAGE 2 OF 3


YTU Campus which one is more rapidly decomposes and produces less foul smell and odour.

- **Firefighting tugboat modelling and stabilization design project, Yangon, Myanmar Maritime University (MMU) (June 2013 – January 2014)** Responsible as a surveyor for site visiting and studying about the functions and structure of firefighting tugboat, auto CAD drawing based on the structural data and sampling with prototype model in the towing tank to analyse the stability of firefighting tug boat.
- **Thein Phyu Dockyard in Yangon Division, Yangon, Department of Maritime Administration (DMA) & Myanmar Maritime University (MMU) (September 2010 – November 2012)** Responsible for the studying is to get practical knowledge in Ship Design and Construction, Maintenance and Repair of Ship Construction and Systems, Operation System and Handling Management of Shipyard.
- **Teaching and Training for High School Students, Yangon, Success Education and Training Center) (March 2008 – March 2017)** Responsible for guiding the students not only about their school's subjects with practically through internet or observations through surrounding atmosphere but also their ethics and moral to be a good person and to become successful in their futures.



Environmental Compliance Consultancy Co., Ltd

PAGE 3 OF 3




YANGON TECHNOLOGICAL UNIVERSITY

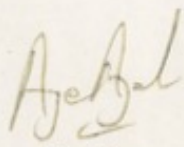
Master of Science (Engineering)

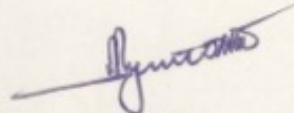
The degree of Master of Science (Engineering) (*Environmental Planning and Management*)
is awarded to *MAY 2017*
Ms Aye Chak Wutye son/ daughter of *Li Than Htay*

Citizenship Scrutiny Card No. *12/2009 Ya (Naiing) 008144*

Graduate Registration No. *28526*





Registrar


Rector

Yangon Technological University

Yangon Technological University

Date: *10 MAR 2018*




YANGON TECHNOLOGICAL UNIVERSITY

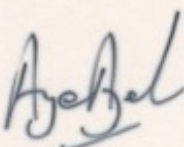
Postgraduate Diploma


The Postgraduate Diploma (*Environmental Planning and Management*)
is awarded to *MAY 2016*
Ma Aye Chan Wutyee, son/daughter of *U Than Htay*.....

Citizenship Scrutiny Card No. *12/ Da Ba Ya (Noing) 008144*.....

Graduate Registration No.*28314*.....




Registrar


Rector

Yangon Technological University

Yangon Technological University

18 MAR 2017

Date:

Myanmar Maritime University



The University has this day conferred the Degree of

BACHELOR OF ENGINEERING

...Naval Architecture...

upon Ma Aye Chan Wutyee

son/daughter of U Than Htay....

National Registration Number

12/Dagaya.(N)008144

Graduate Registration Number

.....2016.....



M.M. Lin Shwin

Registrar

Myanmar Maritime University

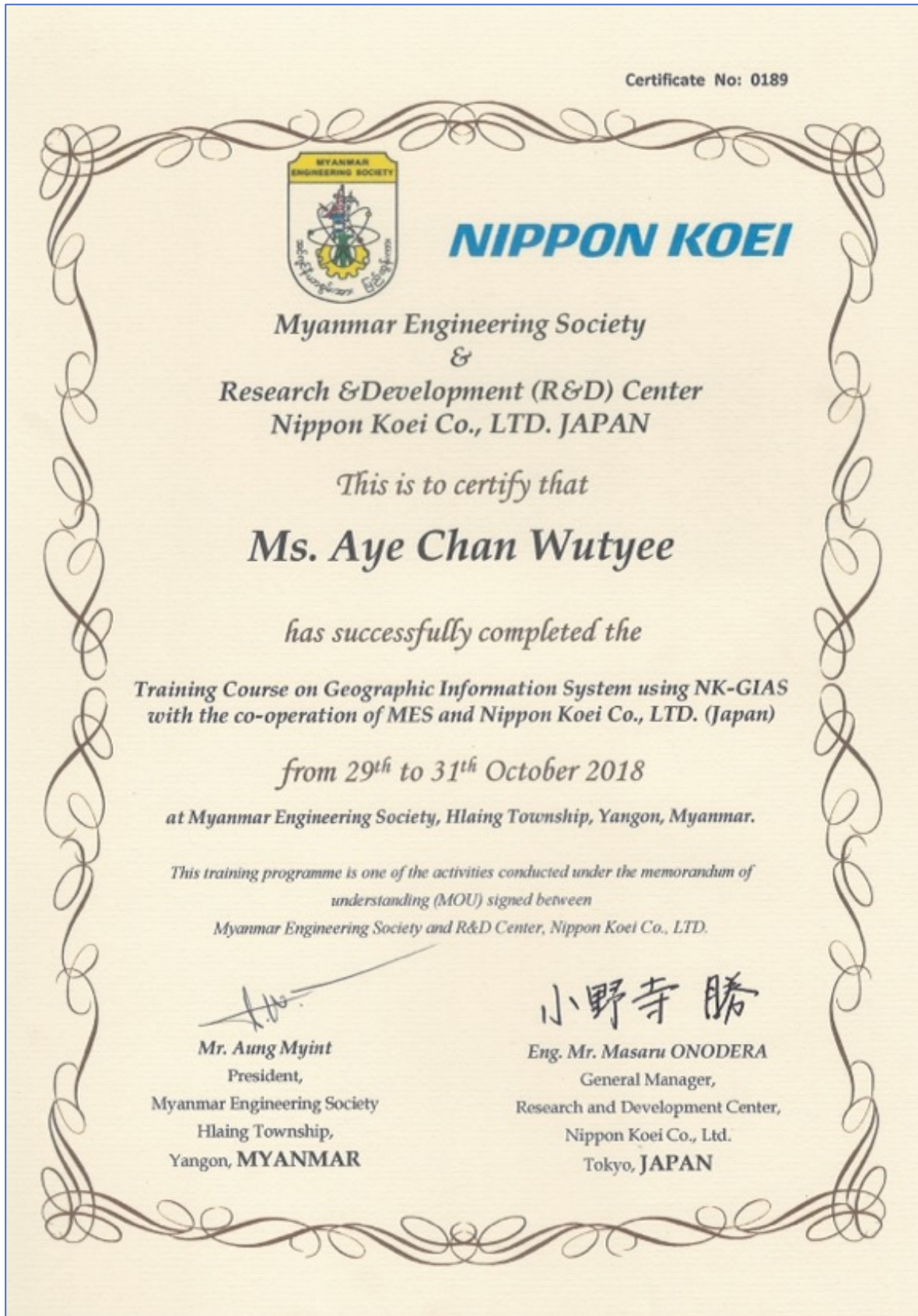


Rector

Myanmar Maritime University

Date : 8-2-2014







GLOBAL ENCHANTING

Safety and Management Training Centre

Cert No:YSS 115 3809 2020

Global Enchanting Safety & Management Training Centre

Certificate of Achievement

is Proudly Granted to:



AYE CHAN WUTYEE (12/DaGaYa(N)008144)

for successfully completing the training course for
Certified **Safety Supervisor Course** from
25-06-2020 to 28-06-2020 covering the following subjects:

1. Fundamental of Safety Concept
2. Understanding of Safety Signage
3. Duties and Responsibilities of a Safety Supervisor
4. Workplace Common Hazards
5. Fundamental of Risk Assessment
6. Personal Protective Equipments
7. Permit to Work System
8. Accident Investigation & Accident Reporting
9. Emergency Preparedness

Khin Swe Win Ko
Managing Director
Global Enchanting Safety & Management
Training Centre

Paing Aung Chit
Assistant Training Manager
Global Enchanting Safety & Management
Training Centre



100 ISO 9001:2015 Certified Standard
Certificate No: 03 0004

APPENDIX F: HEALTH AND SAFETY POLICY OF GOLDEN LACE POSCO INTERNATIONAL CO., LTD.

Health and Safety Policy

POSCO INTERNATIONAL, as a corporate citizen building a better future together, values 'health and safety' as the foremost priority in conducting its business, and therefore all its employees and stakeholders commit themselves to the following actions.

1. Prioritization of health and safety

We put health and safety first in making business decisions and ensure a clear understanding of, and thorough compliance with, applicable laws and company regulations in the areas of health and safety.

2. Creation of healthy workplace and continuous improvement

We preemptively identify and mitigate risks to create a healthy workplace and continuously improve our health and safety management system for the well-being of all our employees and stakeholders.

3. Proactive participation and communication

We establish an autonomous safety culture on the basis of proactive participation and communication, and build a health and safety cooperative system through mutual growth activities for relevant contractors.

27th January, 2023

Jeong Tak

Vice-Chairman, POSCO INTERNATIONAL Corporation



APPENDIX G: MSDS OF ALUMINUM PHOSPHIDE 56% TB



UPI CROPSCIENCE CO., LTD.

Add: C-312 Hi-tech Information Plaza, No.8 Huatian Road,
Huayuan, Tianjin City, 300384 P.R. China.

Tel: +86 22 23707836 Fax: +86 22 23707631

<http://www.upicrop.com>

MATERIAL SAFETY DATA SHEET

Aluminum phosphide 56% TB

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name:	Aluminum phosphide 56% TB
Chemical Name:	aluminium phosphide
Type:	Insecticide
Molecular formula:	AlP
Company:	UPI CROPSCIENCE CO., LTD.
Address:	C-312 Hi-Tech Information Plaza No.8 Huatian Road Huayuan Tianjin City 300384 P.R. China.

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENTS	CAS NO.	CONTENT, %
Aluminum phosphide	20859-73-8	56.0
Inert ingredient	-	44.0

SECTION 3: HAZARDS IDENTIFICATION

Inhalation: Exposure to low levels causes malaise, ringing in the ears, fatigue, nausea, and pressure in the chest which is relieved by removal to fresh air. Exposure to high concentrations can be fatal.

Skin contact: May irritate skin

Eye contact: Dust may irritate the eyes.

Ingestion: Toxic if swallowed



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<http://www.upicrop.com>

SECTION 4: FIRST AID MEASURES

Inhalation: Affected persons should be immediately removed from the contaminated area into the open air and given oxygen treatment. Apply artificial respiration using a respirator if the patient is not breathing. DO not apply mouth to mouth resuscitation.

Skin contact: If powder or granules get on skin or clothing brush or shake material off clothes in a well ventilated area. Allow clothes to aerate in a well ventilated area prior to laundering. Do not leave contaminated clothing in occupied and/or confined areas. Wash contaminated skin thoroughly with soap and water.

Eye contact: If dust from product gets into the eyes flush with plenty of water. Get medical attention.

Ingestion: Do not use mouth-to- mouth resuscitation. Place patient in a flat position and allow to rest. Do NOT administer any milk, butter, oils (e.g. castor oil) or alcohol.

First Aid Facilities: Provide washing facilities in the workplace.

Symptoms: Symptoms of phosphine poisoning include nausea, fatigue, a feeling of oppression in the chest, headaches, and stomach pains.

Medical attention: If a patient has swallowed aluminium phosphide he/she may be emitting toxic phosphine gas. First aid and medical staff should take precautions against exposure to phosphine emitted by such a patient. Do not administer mouth-to-mouth resuscitation - use other forms of resuscitation.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing media: Suffocate flames with sand, carbon dioxide or dry extinguishing powder. Do NOT use water on metal phosphide fires.

Hazards from combustion products: Fires involving phosphine or metal phosphides will produce phosphoric acid

Precautions for fire fighters: Wear full protective clothing and self-contained breathing apparatus. Contain firefighting water.

SECTION 6: ACCIDENTAL RELEASE MEASURES

If possible, dispose of spilled product by use according to the label. Freshly spilled material which has not been contaminated with water or foreign matter may be replaced into original containers. Punctured containers may be temporarily repaired using aluminium tape. If the age of the spill is unknown, or the material has been contaminated with soil, debris, water etc., gather up the spillage into small open buckets having a capacity no larger than 4.5 litres. Do



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not add more than about 1 to 1.5 kg to a bucket. If on-site wet deactivation is not feasible, transport the uncovered buckets in open vehicles to a suitable area. Wear gloves when handling product. Respiratory protection may be required during clean-up of spilled material. If the concentration of hydrogen phosphide is unknown, approved self-contained breathing apparatus must be worn. Small amounts of spillage, from about 4 - 8 kg may be spread out over the ground in an open area to be deactivated by atmospheric moisture. Alternatively the material may be wet deactivated as described in disposal information.

SECTION 7: HANDLING AND STORAGE

Handling: Keep out of reach of children.

Storage: Store away from food, drink or animal feeding stuffs. Store below 30 degrees C. Keep away from heat or moisture. Do not store in buildings inhabited by humans or domestic animals. Do not allow water or other liquids to contact product. Do not pile up large quantities of product during fumigation or disposal. Once exposed, do not confine product or otherwise allow hydrogen phosphide concentrations to exceed the LEL. Open containers only in the open air. Do not open in a flammable atmosphere. Phosphine in the head space of containers may flash upon exposure to atmospheric oxygen.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Testing for residual phosphine gas is recommended prior to entry to fumigated premises. Very dangerous. Product can kill if swallowed. Product releases dangerous phosphine gas slowly in moist air and immediately if wet. Can kill if inhaled. Do not inhale vapour. Avoid contact with eyes and skin. Do not inhale dust. Open container in the open air. Keep away from water and liquids. Use entire contents in one operation; if not possible, seal thoroughly with waterproof adhesive tape or air-tight closure.

Personal protective equipment: Respiratory Protection - full-face mask with approved canister for phosphine may be worn at concentrations up to 15 ppm. At levels above this, or when phosphine concentration is unknown, self-contained breathing apparatus or equivalent must be worn.

Protective Clothing - Wear gloves when handling the product.

Eye Protection - None required.

Ventilation - Local ventilation is generally adequate to reduce hydrogen phosphide levels in fumigated premises to below the TLV/TWA. Exhaust fans may be used to speed the aeration of silos, warehouses, shipholds, containers, etc.



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When opening the container and using the product wear elbow-length PVC gloves. If dispensing by hand wear full facepiece respirator with combined dust and gas cartridge or supplied air respirator.

Industrial hygiene: Avoid contact with eyes or skin. Clean working clothes and protective equipment with soap and water. When space fumigating in enclosed areas (eg rooms, warehouses) wear protective clothing specified. Wash hands after use.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical state	: Tablets
Color	: Greyish
Flammability	: Not flammable
Explosivity	: Not explosive
Tablets Weight (Gram)	: 3.0 ± 0.1 g/tablet
Solubility	: Insoluble in most of the solvents; decompose in acid and in water.

SECTION 10: STABILITY AND REACTIVITY

Chemical stability: Product is stable to most chemical reactions, except for hydrolysis.

Hazardous polymerisation: Hazardous polymerisation will not occur.

Conditions to avoid: Moist air

Incompatible materials: Avoid contact with water and oxidising agents.

Hazardous decomposition products: It will react with moist air, liquid water, acids and some other liquids to produce toxic and flammable hydrogen phosphide gas.

SECTION 11: TOXICOLOGICAL INFORMATION

Acute oral LD₅₀ for rats >25 mg/kg.

Acute percutaneous: LD₅₀ for rats >1800 mg/kg

Skin irritation: irritation to skin, Rabbit

Eye irritation: irritation to eyes, Rabbit

Inhalation LC₅₀ (4 h) for rats >38.9 ppm.

Skin sensitization: Skin sensitizer to guinea pigs.

SECTION 12: ECOTOXICOLOGY INFORMATION

The following information is for active ingredient, Phosphide

Fish: LC₅₀ (96 h) for rainbow trout 9.7×10^{-3} ppm.



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Daphnia: EC₅₀ (24 h) 0.2 mg/l

SECTION 13: DISPOSAL CONSIDERATION

Wet deactivation: Deactivating solution is prepared by adding low sudsing detergent to water in a drum or other suitable container. A 2% solution or 4 cups of detergent to 130 litres is suggested. The container should be filled with deactivating solution to within a few centimetres of the top.

The product is added slowly to the deactivating solution and stirred so as to thoroughly wet all the product. this should be carried out in the open air and respiratory protection may be required. no more than 20-25 kg of product should be added to 70 litres of solution Allow the mixture to stand, with occasional stirring, for about 36 hours. The resultant slurry will then be safe for disposal. Dispose of the slurry or deactivated material, with or without preliminary decanting, at a landfill or other suitable site approved by local authorities.

SECTION 14: TRANSPORT INFORMATION

IMDG Code:

Shipping Name: ALUMINIUM PHOSPHIDE

Hazard Class: 6.1

UN Number: 1397

Packing Group: I

IATA DGR:

Shipping Name: ALUMINIUM PHOSPHIDE

Hazard Class: 6.1

UN Number: 1397

Packing Group: I

ADR:

Shipping Name: ALUMINIUM PHOSPHIDE

Hazard Class: 6.1

UN Number: 1397

Packing Group: I

SECTION 15: REGULATORY INFORMATION

Follow local regulations.



UPI CROPSCIENCE CO., LTD.

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<http://www.upicrop.com>

SECTION 16: OTHER INFORMATION

The information contained in the Material Safety Data Sheet is correct to the best of our knowledge at the date of issue. It is intended as a guide for the safe use, handling, disposal, storage and transportation and is not intended as a warranty or as a specification. The information relates only to the product specified and may not be suitable for combinations with other materials or in processes other than those specifically described herein.

UPI

APPENDIX H: CALIBRATION CERTIFICATES OF E SAMPLER AND AEROQUAL S500

 Aeroqual Limited 109 Valley Road, Mount Eden, Auckland, New Zealand Phone: +64-9-623 3013 Fax: +64-9-623 3012 www.aeroqual.com				
Calibration Certificate No. 6979				
Calibration Date: 14 Jan 2015 10:04				
Model:	Sulphur Dioxide 0-10 ppm			
Serial No: ESO-1301154-004				
Environmental Conditions				
Temperature	24.7	°C		
Relative Humidity	48.1	%		
Measurements				
Calibration Standard /ppm	0.00	4.94	0.00	0.00
AQL Sensor (Mean) /ppm	0.00	4.95	0.00	0.00
AQL Sensor (Std. Dev) /ppm	0.000	0.006	0.000	0.000
*The Mean and Standard Deviation are calculated from three consecutive readings.				
Calibration Standard				
The Aeroqual sensor is calibrated against a certified UV fluorescence analyser.				
QC Approval:		Farid Yanes		
Date:		14 Jan 2015		

16°54'27.47"N

96° 4'13.6"E



စိမ်းလန်းအိမ်ပြွေ့ပြီးတိုးတက်ရေးအသင်း (Advancing Life and Regenerating Motherland, ALARM)



Date / ഏറ്റവും: 22 May, 2025

Air Analysis Report (လေထုညစ်ညမ်းမှု စစ်ဆေးမှု အစီအရင်ခံစာ)

Air Analysis Info / လေတိုင်းတာမှု အချက်အလက်

ဓလေ့ထုံးတမ်းစနစ် Sample site:	ဆန်စက်ရုံဝင်း	လေ့လာမှုအမှတ်စဉ် Sample I.D.	464	
နေရာ (မြို့နယ်) Location (township)	ဆန်စက်စီမံကိန်း(လှိုင်သာယာ)	လက်တီတွဒ် Latitude	16°54'27.47"N	
		လောင်ဂျီတွဒ် Longitude	96° 4'13.6"E	
နေရာ (တိုင်းပြည်နယ်) Location (Region / state)	ရန်ကုန်တိုင်းဒေသကြီး	နည်းစနစ် Method	Hz-Scanner (EPAS)	
		စက်တည်အမြင့် (မြေပြင်မှ) Station height (above ground)	Ground	
တိုင်းတာလိုသူ အမည် Name of customer:	Golden Lace POSCO International Co., Ltd	စတင်တိုင်းတာသည့်ရက် log on time (Date,Time)	4-5-2025	12:11 PM
တိုင်းတာသည့်နေ့ရက် Air Sampling Testing Date	4-5-2025	တိုင်းတာပြီးသည့်အချိန် log off time (Date,Time)	5-5-2025	12:11 PM
ဆက်သွယ်ရန် လိပ်စာ/ဖုန်း Contact Address/phone	-	တိုင်းတာမှု ကြာချိန် Logging Duration (hours)	24 hr	

Air Testing Result / လေထုတိုင်းတာစမ်းသပ်ချက်အဖြေ

စဉ် No.	အရည်အသွေး Parameter	ရလဒ် Results	ယူနစ် Unit	ပျမ်းမျှကာလ Avg. Period		ထုတ်လွှတ်မှုစံနှုန်း Guideline Value	ပျမ်းမျှကာလ Avg. Period
၁	နိုက်ထရိုဂျင်ဒိုင်အောက်ဆိုဒ် Nitrogen dioxide	110	μg/m ³ μg/m ³	1	year hour	*40 μg/m ³ * 200 μg/m ³	1-year 1-hour
၂	Particulate matter PM ₁₀	15	μg/m ³ μg/m ³	24	year hours	*20 μg/m ³ * 50 μg/m ³	1-year 24-hour
၃	Particulate matter PM _{2.5}	15	μg/m ³ μg/m ³	24	year hours	* 10 μg/m ³ * 25 μg/m ³	1-year 24 hours
၄	ဆာလဖာဒိုင်အောက်ဆိုဒ် Sulfur Dioxide	40	μg/m ³ μg/m ³	10 24	min hours	* 500 μg/ m ³ * 20 μg/m ³	10 minutes 24-hour
၅	အိုဇုန်း Ozone	35.0	μg/m ³ μg/m ³	8	year hours	* 100 μg/m ³	8 Hour Daily Maximum
၆	ကာဗွန်မိုနောက်ဆိုဒ် Carbon monoxide	0.00	mg/m ³ mg/m ³	24	year hours	** 20 mg/m ³	8 Hour

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(ခါတ်ခွဲခန်း၏ စာခြေရေးသားဆောင်ရွက်သူများနှင့်ဆိုင်ရာအချက်အခြေအနေအထားကို အောက်ဖော်ပြပါအတိုင်း ဖော်ပြထားပါသည်။)

No-121, Conner of Shu Khin Thar Street and (7) Street, 3 Block, South Okkalapa Township, Yangon.

Telephone: +95 9407496078

Website: <http://www.ecolabmyanmar.org> **Email:** aclab.2022@gmail.com



ပတ်ဝန်းကျင်ရေးရာဓာတ်ခွဲခန်း Ecological Laboratory

စိမ်းလန်းအိမ်ခြေဖွံ့ဖြိုးတိုးတက်ရေးအသင်း (Advancing Life and Regenerating Motherland, ALARM)



စဉ် No.	အရည်အသွေး Parameter	ရလဒ် Results	ယူနစ် Unit	ပျမ်းမျှကာလ Avg. Period		ထုတ်လွှတ်မှုစံနှုန်း Guideline Value	ပျမ်းမျှကာလ Avg. Period
၇	အပူချိန် Temperature	30.00	°C		hour		
			°C	24	hours	NG	-
၈	လေတိုက်နှုန်း Wind Speed	8.5	Kph		hour		
			Kph	24	hours	NG	-
၉	လေတိုက်ရာအရပ် Wind Direction	255.0	Deg		hour		
			Deg	24	hours	NG	-
၁၀	စိုထိုင်းဆ Relative Humidity	90	RH%		hour		
			RH%	24	hours	NG	-

* Myanmar Environmental Quality Emission Guideline 2015


NG= No Guideline

** Japan Standard

မှတ်ချက်။ ။ တိုင်းတာသည့်ကြာချိန်သည် သတ်မှတ်စံနှုန်းအချိန်ထက်နည်းပါက အများဆုံးတိုင်းတာခဲ့သည့် အချိန်၏ ပျမ်းမျှရလဒ်ကိုသာ ဖော်ပြထားပါသည်။ သတ်မှတ်စံနှုန်းအချိန်ထက် ပိုမိုတိုင်းတာထားသော အရည်အသွေးများအတွက် သတ်မှတ်အချိန် ပျမ်းမျှရလဒ်ထားပါသည်။

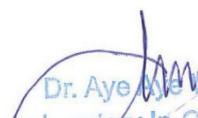
တိုင်းတာတွက်ချက်သူ

Analyzed by


Kyaw Thu Sein
Mobile Lab Technician
Ecological Laboratory
ALARM

စစ်ဆေးသူ

Checked by


Dr. Aye Aye Win
Laboratory In-Charge
Ecological Laboratory
(ALARM)

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(ခေတ်ခွဲခန်း၏ စာဖြင့်ရေးသားသောသဘောတရားဥပဒေနှင့်အညီသတ်မှတ်စံနှုန်းအချိန်ထက်နည်းပါက အများဆုံးတိုင်းတာခဲ့သည့် အချိန်၏ ပျမ်းမျှရလဒ်ကိုသာ ဖော်ပြထားပါသည်။ သတ်မှတ်စံနှုန်းအချိန်ထက် ပိုမိုတိုင်းတာထားသော အရည်အသွေးများအတွက် သတ်မှတ်အချိန် ပျမ်းမျှရလဒ်ထားပါသည်။)

No-121, Corner of Shu Khin Thar Street and (7) Street, 3 Block, South Okkalapa Township, Yangon.

Telephone: +95 9407496078

Website: <http://www.ecolabmyanmar.org> Email: aclab.2022@gmail.com

APPENDIX J: CALIBRATION CERTIFICATE OF NOISE LEVEL SAMPLER

EXTECH
INSTRUMENTS

ISO 9001 Certified FLIR Commercial Systems, Inc. • 9 Townsend West • Nashua, NH 03063

Certificate of Calibration

Certificate Number: 122130
Document Number: 86667

Customer Details:
Customer Name: ENVIRON MYANMAR CO. LTD

Instrument Details:

Manufacturer:	EXTECH INSTRUMENTS	Calibration Date:	December 16, 2014
Description:	SOUND LEVEL METER	Calibration Due:	December 16, 2015
Model Number:	407780A	Cal. Interval:	12 MONTHS
Serial Number:	Z325183	As Received:	NEW
Equip. ID Number:	N/A		


Environmental Details:
Temperature: 21 Deg. +/- 5 C Relative Humidity: 40 % +/- 15 %

Procedures Used:
Calibration Procedure: EICM407780A-CP

Certification

Extech Instruments certifies that the instrument listed above meets the specifications of the manufacturer at the completion of its calibration. Standards used are traceable to the National Institute of Standards and Technology (NIST), or have been derived from accepted values, natural physical constants, or through the use of the ratio method of self-calibration techniques. Methods used are in accordance with ISO 10012-1 and ANSI/NCSL Z540-1-1994. This certificate is not to be reproduced other than in full, except with prior written approval of Extech Instruments Corporation. All the calibration standards used have an accuracy ratio of 4:1 or better, unless otherwise stated.


Technicians Notes:
Technician: TERI KING

Approved By: 


Page 1 of 3

For calibration service, E-mail: repair@extech.com

APPENDIX K: NOISE LEVEL RESULT (2025)



ပတ်ဝန်းကျင်ရေးရာဓာတ်ခွဲခန်း
Ecological Laboratory
စိမ်းလန်းအိမ်ပြေဖွံ့ဖြိုးတိုးတက်ရေးအသင်း (Advancing Life and Regenerating Motherland, ALARM)



Noise Analysis Info / အသံတိုင်းတာမှု အချက်အလက်

အသံတိုင်းတာနေရာ Sample site:	ဆန်စက်ရုံဝင်း	နမူနာအမှတ်စဉ် Sample I.D	1372	
နေရာ (မြို့နယ်) Location (township)	လှိုင်သာယာ	လက်တီတွဒ် Latitude	16°54'27.47"N	
		လောင်ဂျီတွဒ် Longitude	96° 4'13.6"E	
နေရာ (တိုင်းပြည်နယ်) Location (Region / state)	ရန်ကုန်တိုင်းဒေသကြီး	နည်းစဉ် Method	BENETECH Digital Sound Level Meter	
တိုင်းတာလိုသူ အမည် Name of customer:	Golden Lase POSCO International Co., Ltd	စတင်တိုင်းတာသည့်ရက် (နေ့အချိန်) log on time (Date,Time)	4-5-2025	11:47 AM
တိုင်းတာသည့်နေ့ရက် Sampling Testing Date	4-5-2025	တိုင်းတာပြီးသည့်အချိန် (နေ့အချိန်) log off time (Date,Time)	5-5-2025	11:47 AM
ဆက်သွယ်ရန် လိပ်စာ/ဖုန်း Contact Address/phone	-	တိုင်းတာမှု ကြာချိန် Logging Duration (hours)	24 hours	

Noise Testing Results / အသံတိုင်းတာစမ်းသပ်ချက်အဖြေ

Testing Time	Testing Results (One Hour Average)	Guideline Value (NEQG)*		
Day - Time	Unit – dBA	One Hour LAeq (dBA)**		
7:00-8:00	53.22	Receptor	Day-time 07:00- 22:00 (10:00-22:00 for Public holidays)	Night Time 22:00- 07:00 (22:00-10:00 for Public holidays)
8:00-9:00	52.15			
9:00-10:00	67.12			
10:00-11:00	51.50			
11:00-12:00	59.71	Residential, Institutional Educational	55	45
12:00-13:00	54.17			
13:00-14:00	52.77			
14:00-15:00	48.36			
15:00-16:00	53.14	Industrial, Commercial	70	70
16:00-17:00	50.81			
17:00-18:00	53.25			
18:00-19:00	54.56			
19:00-20:00	56.80			
20:00-21:00	51.17			
21:00-22:00	50.14			
Day-Time Average (LAeq)	53.92	-	-	-

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(ခေတ်ခွဲခန်း၏ တစ်စိတ်တစ်ဒေသသာဟောပြောသည့်ချက်မရရှိပါက နာမည်ရင်းတင်ကြေညာခြင်းသည် မရည်ရွယ်ပါ။ တစ်စိတ်တစ်ဒေသ ဖြတ်ယူအသုံးပြုခြင်း၊ ပုံနှိပ်ထုတ်ဝေခြင်းမပြုရ။)
No-121, Corner of Shu Khin Thar Street and (7) Street, 3 Block, South Okkalapa Township, Yangon.
Telephone: +95 9407496078
Website: <http://www.ecolabmyanmar.org> Email: aclab.2022@gmail.com



ပတ်ဝန်းကျင်ရေးရာဓာတ်ခွဲခန်း Ecological Laboratory



စိမ်းလန်းအိမ်မြေဖွံ့ဖြိုးတိုးတက်ရေးအသင်း (Advancing Life and Regenerating Motherland, ALARM)

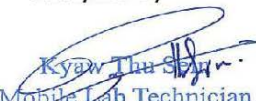
Testing Time	Testing Results (One Hour Average)	Guideline Value (NEQG)*		
Night -Time	Unit – dBA	One Hour LAeq (dBA)**		
22:00-23:00	50.22	Receptor	Day-time 07:00- 22:00 (10:00-22:00 for Public holidays)	Night Time 22:00- 07:00 (22:00-10:00 for Public holidays)
23:00-24:00	51.43			
00:00-1:00	49.95			
1:00-2:00	50.18			
2:00-3:00	48.89	Residential, Institutional Educational	55	45
3:00-4:00	51.85			
4:00-5:00	50.22			
5:00-6:00	55.36	Industrial, Commercial	70	70
6:00-7:00	56.41			
Night-Time Average (LAeq)	51.61	-	-	-

*Myanmar Environmental Quality Emission Guideline 2015

**Equivalent continuous sound level in decibels

တိုင်းတာတွက်ချက်သူ

Analyzed by


Kyaw Thu Shwe
Mobile Lab Technician
Ecological Laboratory
ALARM

စစ်ဆေးသူ

Checked by


Dr. Aye Aye Win
Laboratory In-Charge
Ecological Laboratory
(ALARM)

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(စိတ်ခွဲခန်း၏ တွက်ချက်မှုများသည် သဘောတူညီချက်မရရှိပဲ ယခုအစီရင်ခံစာကို အပြည့်အဝ အမှန်တရားရှိရှိ ထုတ်ဝေတင်ပြခြင်း မပြုရန် တောင်းဆိုပါသည်။)
No-121, Corner of Shu Khin Thar Street and (7) Street, 3 Block, South Okkalapa Township, Yangon.

APPENDIX L: LABORATORY WATER ANALYSIS RESULTS (2025)



ပတ်ဝန်းကျင်ရေးရာဓာတ်ခွဲခန်း
Ecological Laboratory



စိမ်းလန်းအသိမြင့်မြှင့်တိုးတက်ရေးအသင်း (Advancing Life and Regenerating Motherland, ALARM)
No.121, Corner of Shu Khin Thar Street & 7 Street, (3) Block, South Oakkalapa Township, Yangon.Tel: - 09-407496078

စာအမှတ်/Reference Number: EL(M)-R/1272

နေ့စွဲ / Date: 22 May, 2025

ဓာတ်ခွဲစစ်ဆေးမှု အစီအရင်ခံစာ / Laboratory Analysis Report

နမူနာရာဇဝင် / Sample Profile

နမူနာအမည် / Sample Name	Sample (1) Ground Water	နမူနာအမှတ် / Sample ID.	1272
နေရာ (မြို့နယ်) Location (township)	Hlaing Thar Yar Ts	လက်တီတွဒ် Latitude	16°54'29.1"N
		လောင်ဂျီတွဒ် Longitude	96° 4'14.36"E
နေရာ (တိုင်းပြည်နယ်) Location (Region / state)	Yangon Region		
ပေးပို့သူအမည် / Sender Name	U Aung Kyaw Zin Latt	နမူနာကောက်ချိန် (နေ့နာရီ) Sampling Time (Date,Time)	5-5-2025 10:30 AM
အဖွဲ့အစည်း / Organization	Golden Lace POSCO International Co., Ltd		
ဆက်သွယ်ရန် / Contact	09796921149	နမူနာရောက်ရှိချိန် (နေ့နာရီ) Arriving Time (Date,Time)	5-5-2025 13:00 PM

(This laboratory analysis report is based solely on the sample submitted by the customer)

(ဤဓာတ်ခွဲစစ်ဆေးမှုအစီအရင်ခံစာသည်ပေးပို့သူမှပို့ဆောင်ခဲ့သည့်နမူနာကိုသာအခြေခံထားပါသည်။)

Analysis Result / စမ်းသပ်ချက်အဖြေ

စဉ် Sr.	အရည်အသွေးညွှန်းကိန်း Quality Parameter	ရလဒ် အဖြေ Results	နည်းစဉ် Method	စံသတ်မှတ်ချက် Drinking Standard	မှတ်ချက် Remark
1	Total Plate count (CFU /100ml)		Total plate count method	0	
2	Total Coliform count (MPN/100ml) (Presumption test)	ND	Most Probable Number method	0	
3	Total faecal coliform count (MPN/100ml) (Presumption test)		Most Probable Number method	0	
4	Total Coliform count (CFU/100ml) (Confirm test)		Eosin Methyl blue agar plate test	0	
5	Complete test for coliform bacteria		Gram staining test	-	
6	Total Coliform count (CFU/ml)		3M Plate count method	0	
7	Total <i>E. coli</i> count (CFU/ml)		3M Plate count method	0	

Note: The target sample needs to test some additional test to confirm total coliform and total faecal coliform

တိုင်းတာတွက်ချက်သူ
Tested

May Zaw

Research Assistant
ALARM

စစ်ဆေးပြီး
Check by

May Myat Nyein

Research Assistant
ALARM

တာဝန်ခံ
Approved by

Ni tar Nwe

Research Scientist
ALARM

ALARM Ecological Laboratory

Water Testing Result Report



Report Number: EL-WR-25-02351

Date: May 22, 2025

Client Information	Sample Information
Client Name : Golden Lace POSCO International Co., Ltd	Sample ID : 10560
Organization : -	Sample Name : Sample 1
Client ID : -	Sample Type / Source : Ground Water
Registration Date & Time : 5-5-2025, 13:00 PM	Sampling Date & Time : 5-5-2025, 10:30 AM
Contact : U Aung Kyaw Zin Latt	Sample Location : Hlaing Thar Yar Township
E - Mail : -	Latitude : 16°54'29.01"N
Testing Purpose : IEE (Revise Report)	Longitude : 96° 4'14.36"E

Testing Results

*This laboratory analysis report is based solely on the sample submitted by the client unless client took our sampling service.
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Sr.	Quality Parameters	Results	Units	Drinking Standards	Remarks
1	Alkalinity	200	mg/L	200	Normal
2	Magnesium	10.5	mg/L	30	-
3	Sodium	100.0	mg/L	200	-
4	Potassium	ND	mg/L	-	-
5	Total Hardness	150	mg/L	500	-
6	Sulphate	0.3	mg/L	400	-
7	Chloride	20	mg/L	600	-
8	Iron ⁷	0.18	mg/L	0.5-1.5	-
9	Dissolve Oxygen	2.3	mg/L	-	-
10	COD ³	ND	mg/L	125	-
11	BOD ⁶	1.2	mg/L	-	-
12	pH	6.19	-	6.5-8.5	-
13	Ammonia-Nitrogen	0.5	mg/L	10	-
14	Turbidity	3	NTU	20	Not Clear
15	Salinity	0.00	%	-	-
16	Arsenic ⁸	0.000	Mg/L	0.05	-
17	Lead ⁷	ND	ppb	0.05	-

"ND" = Not Detected

"LOD" = Lower limit of detection

" - " = No Reference Standard

Tested by	Checked by	Approved by
 Daw May Mye Aung Lab. Technician II Ecological Laboratory ALARM	 Daw Lin Mye Myat Aung Lab. Technician I Ecological Laboratory ALARM	 Dr. Aye Aye Win Laboratory In-Charge Ecological Laboratory (ALARM)

No-121, Conner of Shu Khin Thar Street and (7) Street, 3 Block, South Okkalapa Township, Yangon.

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Website: <http://www.ecolabmyanmar.org> Email: aclab.2022@gmail.com

ALARM Ecological Laboratory

Water Testing Result Report



Laboratory Testing Methods		
Index	Instrument / Method	References / Descriptions
1	pH Meter	Electrode method (Approved by EPA, ISO, ASTM); Hanna electrode meter Certified by 2014 EMS, Certified by QMS
2	DO Meter	Electrochemical probe method, Dissolved Oxygen Probe Measurement (Approved by EPA, ISO, ASTM) Horiba DO electrode certified with IP67 standards and measures
3	SpectroDirect Methods	Lovibond brand reagent testing methods, precision of the methods are identical to the precision specified in the standard literature of ANWA and ISO
4	TDS Meter	Electrode method (Approved by EPA, ISO, ASTM); Hanna electrode meter Certified by 2014 EMS, Certified by QMS
5	Conductivity Meter	Electrode method, conductivity cell (Approved by EPA, ISO, ASTM); Hanna electrode meter Certified by 2014 EMS, Certified by QMS
6	BOD Testing Method	Method 405.1, USEPA Method for Chemical Analysis of Water and Waste water
7	Atomic Adsorption Spectrophotometer	Shimadzu AA-6200, which is based on the Japan Water Standard Testing Method also approved by EPA and ASTM
8	Arsenic Test Kit	Lovibond brand Arsenic Test kit certified by DIN ISO 1997/ Follow Procedure: Meets WHO requirements:
9	Liquid-Liquid Partition Gravimetric Method	Test Method for Oil and Grease (Solvent Extractable Substances) in Water (EPA 1664) by using n-Hexane

Standards References		
Index	Standard Names	References
a	WHO Standard for Drinking Water (2011)	Guidelines for Drinking-water Quality 4 th edition, World Health Organization, 2011.
b	US EPA Drinking Water Standard 2018	2018 Edition of the Drinking Water Standards and Health Advisories, EPA 822 F-18-001, Office of Water, USEPA, Washington, DC, March 2018
c	Myanmar National Drinking Water Quality Standard	Myanmar National Standard Department, Department of Research and Innovation, Ministry of Education
d	Myanmar Emission Guideline (2015)	National Environmental Quality (Emission) Guidelines, Order No. (615/2015) MOEF, 2015, December 25.
e	At the edge of a scientifically established mixing zone which takes into account ambient water quality, receiving water use, potential receptors and assimilative capacity; when the zone is not defined, use 100 meters from the point of discharge.	

Quality Parameters Descriptions

pH: Although pH usually has no direct impact on consumers, it is one of the most important operational water quality parameters. Water generally becomes more corrosive with decreasing pH; however, excessively alkaline water also may be corrosive. **Temperature:** will have an impact on the acceptability of a number of other inorganic constituents and chemical contaminants that may affect taste. High water temperature enhances the growth of microorganisms and may increase problems related to taste, odor, color and corrosion. **Color:** Drinking water should ideally have no visible color. Color in drinking water is usually due to the presence of colored organic matter (primarily humic and fulvic acids) associated with the humus fraction of soil. Color is also strongly influenced by the presence of iron and other metals, either as natural impurities or as corrosion products. It may also result from the contamination of the water source with industrial effluents and may be the first indication of a hazardous situation. **Turbidity:** Turbidity in water is caused by suspended particles or colloidal matter that obstructs light transmission through the water. It may be caused by inorganic or organic matter or a combination of the two. Microorganisms (bacteria, viruses and protozoa) are typically attached to particulates, and removal of turbidity by filtration will significantly reduce microbial contamination in treated water. **Total Dissolved Solid (TDS):** The total of all dissolved mineral constituents, usually expressed in milligrams per liter. The concentration of dissolved solids may affect the taste of water. Water that contains more than 1,000 mg/L is unsuitable for many industrial uses. Some dissolved mineral matter is desirable, otherwise the water would have no taste. The dissolved solids concentration commonly is called the water's salinity and is classified as follows: fresh, 0-1,000 mg/L; slightly saline, 1,000-3,000 mg/L; moderately saline, 3,000-10,000 mg/L; very saline, 10,000-35,000 mg/L; and briny, more than 35,000 mg/L. **Total Suspended Solid (TSS):** Both organic and inorganic particles of all sizes can contribute to the suspended solids concentration. These solids include anything drifting or floating in the water, from sediment, silt and sand to plankton and algae. TSS are particles that are larger than 2 microns found in the water column. Anything smaller than 2 microns (average filter size) is considered a dissolved solid. **Total Solid:** Total solids are dissolved solids plus suspended solids in water. **Conductivity:** Conductivity is not just the measure of the capability of water to pass the flow of electric current. This ability of conductance is said to be directly proportional to the concentration of the ions present in the water. **Chloride:** Large concentrations increase the corrosiveness of water and, in combination with sodium, give water a salty taste. **Hardness:** Related to the soap-consuming characteristics of water, results in formation of scum when soap is added. May cause deposition of scale in boilers, water heaters, and pipes. Hardness contributed by calcium and magnesium, bicarbonate and carbonate mineral species in water is called carbonate hardness; hardness in excess of this concentration is called non-carbonate hardness. Water that has a hardness less than 61 mg/L is considered soft; 61-126 mg/L, moderately hard; 127-180 mg/L, hard; and more than 180 mg/L, very hard. **Dissolved Oxygen:** Required by higher forms of aquatic life for survival. Depletion of dissolved oxygen in water supplies can encourage the microbial reduction of nitrate to nitrite and sulfate to sulfide.

It can also cause an increase in the concentration of ferrous iron in solution. **Biological/Chemical Oxygen Demand (BOD & COD):** BOD is similar in function to chemical oxygen demand (COD), in that both measure the amount of organic compounds in water. However, COD is less specific, since it measures everything that can be chemically oxidized, rather than just levels of biologically active organic matter. **Aluminum:** No known necessary role in human or animal diet. Nontoxic in the concentrations normally found in natural water supplies. Elevated dissolved aluminum concentrations in some low pH waters can be toxic to some types of fish. **Manganese:** Causes gray or black stains on porcelain, enamel, and fabrics. Can promote growth of certain kinds of bacteria that clog pipes and wells. **Sodium & Potassium:** Large concentrations may limit use of water for irrigation and industrial use and, in combination with chloride, give water a salty taste. Abnormally large concentrations may indicate natural brines, industrial brines, or sewage. **Zinc:** Essential and beneficial in metabolism; its deficiency in young children or animals will retard growth and may decrease general body resistance to disease. Seems to have no ill effects even in fairly large concentrations (20,000-40,000 mg/L), but can impart a metallic taste or milky appearance to water. Zinc in drinking water commonly is derived from galvanized coatings of piping. **Iron:** Forms rust-colored sediment; stains laundry, utensils, and fixtures reddish brown. Objectionable for food and beverage processing. Can promote growth of certain kinds of bacteria that clog pipes and well openings. **Arsenic:** is toxic. A cumulative poison that is slowly excreted. Can cause nasal ulcers; damage to the kidneys, liver, and intestinal walls; and death. Recently suspected to be a carcinogen. **Chlorine:** Chlorine is added to water supplies to kill bacteria. Short term exposure to chlorine comes primarily from bathing and other activities that use hot water rather than from drinking. Short term exposure irritates the eyes and lungs, and within 15 minutes of exposure victims experience coughing, shortness of breath and headaches. Regular exposure to chlorine in the home has been associated with asthma and other respiratory diseases. **Cyanide:** cyanide is highly acutely toxic. It is detoxified in the liver by first-pass metabolism following oral exposure. As a consequence, exposure to a dose spread over a longer period, through a day, for example, will result in lower toxicity, or higher tolerance, than the same dose given in a single bolus dose. **Nitrite:** Commonly formed as an intermediate product in bacterially mediated nitrification and denitrification of ammonia and other organic nitrogen compounds. An acute health concern at certain levels of exposure. Nitrite typically occurs in water from fertilizers and is found in sewage and wastes from humans and farm animals. Concentrations greater than 1.0 mg/L as nitrogen, may be injurious when used in feeding infants. **Nitrate & Nitrate-N:** Concentrations greater than local background levels may indicate pollution by feedlot runoff, sewage, or fertilizers. Concentrations greater than 10 mg/L as nitrogen, may be injurious when used in feeding infants. **Phosphorus & ortho-phosphate:** Dense algal blooms or rapid plant growth can occur in waters rich in phosphorus. A limiting nutrient for eutrophication since it is typically in shortest supply. Sources are human and animal wastes and fertilizers. **Ammonia:** Plant nutrient that can cause unwanted algal blooms and excessive plant growth

when present at elevated levels in water bodies. Sources include decomposition of animal and plant proteins, agricultural and urban runoff, and effluent from waste-water treatment plants. **Lead:** A cumulative poison, toxic in small concentrations. Can cause lethargy, loss of appetite, constipation, anemia, abdominal pain, gradual paralysis in the muscles, and death. **Copper:** Essential to metabolism; copper deficiency in infants and young animals results in nutritional anemia. Large concentrations of copper are toxic and may cause liver damage. Moderate levels of copper (near the action level) can cause gastro-intestinal distress. **Cadmium:** A cumulative poison; very toxic. Not known to be either biologically essential or beneficial. Believed to promote renal arterial hypertension. Elevated concentrations may cause liver and kidney damage, or even anemia, retarded growth, and death. **Nickel:** Very toxic to some plants and animals. Toxicity for humans is believed to be very minimal. **Sulfide:** The "rotten egg" odor of hydrogen sulfide is particularly noticeable in some ground waters and in stagnant drinking water in the distribution system, as a result of oxygen depletion and the subsequent reduction of sulfate by bacterial activity. Sulfide is oxidized rapidly to sulfate in well aerated or chlorinated water, and hydrogen sulfide levels in oxygenated water supplies are normally very low. **Sulfate:** Sulfates of calcium and magnesium form hard scale. Large concentrations of sulfate have a laxative effect on some people and, in combination with other ions, give water a bitter taste. **Alkalinity:** A measure of the capacity of unfiltered water to neutralize acid. In almost all natural waters alkalinity is produced by the dissolved carbon dioxide species, bicarbonate and carbonate. **Phenol:** The presence of phenol in drinking water probably results from using contaminated surface water or groundwater as a source. Its presence in groundwater is probably the result of release to soil, often industrial releases or leachate from waste dumps, and the subsequent leaching of phenol through the soil to the groundwater. Chlorophenols are present in drinking water as a result of the chlorination of phenols, as by-products of the reaction of hypochlorite with phenolic acids, as biocides or as degradation products of phenoxypolycides. IARC has classified 2,4,6-trichlorophenol in Group 2B (possibly carcinogenic to humans). **Boron:** Essential to plant growth, but may be toxic to crops when present in excessive concentrations in irrigation water. Sensitive plants show damage when irrigation water contains more than 670 µg/L and even tolerant plants may be damaged when boron exceeds 2,000 µg/L. The recommended limit is 750 µg/L for long-term irrigation on sensitive crops. **Fluoride:** To produce signs of acute fluoride intoxication, minimum oral doses of about 1 mg of fluoride per kilogram of body weight were required. Concentrations above this guideline value (15 mg/L) carry an increasing risk of dental fluorosis and that progressively higher concentrations lead to increasing risks of skeletal fluorosis. **Oil & Grease:** Organic toxic waste (oil and grease) causes ecological damages for aquatic organisms, plant, animal, and equally, mutagenic and carcinogenic for human being. They discharge from different sources to form a layer on water surface that decreases dissolved oxygen.

~~~ Thank you so much for using our testing services ~~~

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## ပတ်ဝန်းကျင်ရေးရာဓာတ်ခွဲခန်း Ecological Laboratory



စိမ်းလန်းအသိမြှင့်၊ ဖြိုးတိုးတက်ရေးအသင်း (Advancing Life and Regenerating Motherland, ALARM)  
No.121, Corner of Shu Khin Thar Street & 7 Street, (3) Block, South Oakkalapa Township, Yangon.Tel: - 09-407496078

စာအမှတ်/Reference Number: EL(M)-R/1273

နေ့စွဲ / Date: 22 May, 2025

### ဓာတ်ခွဲစစ်ဆေးမှု အစီအရင်ခံစာ / Laboratory Analysis Report

#### နမူနာအမည် / Sample Profile

|                                                   |                                          |                                                            |                   |
|---------------------------------------------------|------------------------------------------|------------------------------------------------------------|-------------------|
| နမူနာအမည် / Sample Name                           | Sample (2) Ground Water                  | နမူနာအမှတ် / Sample ID.                                    | 1273              |
| နေရာ (မြို့နယ်)<br>Location (township)            | Hlaing Thar Yar Ts                       | လက်တီတွဒ် Latitude                                         | 16°54'29.1"N      |
|                                                   |                                          | လောင်ဂျီတွဒ် Longitude                                     | 96° 4'29.83 "E    |
| နေရာ (တိုင်းပြည်နယ်)<br>Location (Region / state) | Yangon Region                            |                                                            |                   |
| ပေးပို့သူအမည် / Sender Name                       | U Aung Kyaw Zin Latt                     | နမူနာကောက်ချိန် (နေ့နားရီ)<br>Sampling Time (Date,Time)    | 5-5-2025 10:30 AM |
| အဖွဲ့အစည်း / Organization                         | Golden Lace POSCO International Co., Ltd |                                                            |                   |
| ဆက်သွယ်ရန် / Contact                              | 09796921149                              | နမူနာရောက်ရှိချိန် (နေ့နားရီ)<br>Arriving Time (Date,Time) | 5-5-2025 13:00 PM |

(This laboratory analysis report is based solely on the sample submitted by the customer)

(ဤဓာတ်ခွဲစစ်ဆေးမှုအစီအရင်ခံစာသည်ပေးပို့သူမှပို့ဆောင်ခဲ့သည့်နမူနာကိုသာအခြေခံထားပါသည်။)

#### Analysis Result / စမ်းသပ်ချက်အဖြေ

| စဉ်<br>Sr. | အရည်အသွေးညွှန်းကိန်း<br>Quality Parameter                     | ရလဒ် အဖြေ<br>Results | နည်းစဉ်<br>Method                 | စံသတ်မှတ်ချက်<br>Drinking Standard | မှတ်ချက်<br>Remark |
|------------|---------------------------------------------------------------|----------------------|-----------------------------------|------------------------------------|--------------------|
| 1          | Total Plate count (CFU /100ml)                                |                      | Total plate count method          | 0                                  |                    |
| 2          | Total Coliform count (MPN/100ml)<br>(Presumption test)        | ND                   | Most Probable Number method       | 0                                  |                    |
| 3          | Total faecal coliform count (MPN/100ml)<br>(Presumption test) |                      | Most Probable Number method       | 0                                  |                    |
| 4          | Total Coliform count (CFU/100ml)<br>(Confirm test)            |                      | Eosin Methyl blue agar plate test | 0                                  |                    |
| 5          | Complete test for coliform bacteria                           |                      | Gram staining test                | -                                  |                    |
| 6          | Total Coliform count (CFU/ml)                                 |                      | 3M Plate count method             | 0                                  |                    |
| 7          | Total <i>E. coli</i> count (CFU/ml)                           |                      | 3M Plate count method             | 0                                  |                    |

Note: The target sample needs to test some additional test to confirm total coliform and total faecal coliform

တိုင်းတာတွက်ချက်သူ  
Tested

May Zaw

Research Assistant  
ALARM

စစ်ဆေးပြီး  
Check by

May Myat Nyein

Research Assistant  
ALARM

တာဝန်ခံ  
Approved by

Ni tar Nwe

Research Scientist  
ALARM

## ALARM Ecological Laboratory

### Water Testing Result Report



Report Number: EL-WR-25-02351

Date: May 22, 2025

| Client Information       |                                            | Sample Information   |                            |
|--------------------------|--------------------------------------------|----------------------|----------------------------|
| Client Name              | : Golden Lace POSCO International Co., Ltd | Sample ID            | : 10561                    |
| Organization             | : -                                        | Sample Name          | : Sample 2                 |
| Client ID                | : -                                        | Sample Type / Source | : Ground Water             |
| Registration Date & Time | : 5-5-2025, 13:00 PM                       | Sampling Date & Time | : 5-5-2025, 10:30 AM       |
| Contact                  | : U Aung Kyaw Zin Latt                     | Sample Location      | : Hlaing Thar Yar Township |
| E - Mail                 | : -                                        | Latitude             | : 16°54'29.83"N            |
| Testing Purpose          | : IEE (Revise Report)                      | Longitude            | : 96° 4'14.08"E            |

### Testing Results

*This laboratory analysis report is based solely on the sample submitted by the client unless client took our sampling service.*

*This report shall not be reproduced except in full, without written approval of the laboratory*

| Sr. | Quality Parameters   | Results | Units | Drinking Standards | Remarks   |
|-----|----------------------|---------|-------|--------------------|-----------|
| 1   | Alkalinity           | 198.0   | mg/L  | 200                | Normal    |
| 2   | Magnesium            | 10.3    | mg/L  | 30                 | -         |
| 3   | Sodium               | 100.0   | mg/L  | 200                | -         |
| 4   | Potassium            | ND      | mg/L  | -                  | -         |
| 5   | Total Hardness       | 150     | mg/L  | 500                | -         |
| 6   | Sulphate             | 0.3     | mg/L  | 400                | -         |
| 7   | Chloride             | 20      | mg/L  | 600                | -         |
| 8   | Iron <sup>7</sup>    | 0.18    | mg/L  | 0.5-1.5            | -         |
| 9   | Dissolve Oxygen      | 2.5     | mg/L  | -                  | -         |
| 10  | COD <sup>3</sup>     | ND      | mg/L  | 125                | -         |
| 11  | BOD <sup>6</sup>     | 1.2     | mg/L  | -                  | -         |
| 12  | pH                   | 6.19    | -     | 6.5-8.5            | -         |
| 13  | Ammonia-Nitrogen     | 0.5     | mg/L  | 10                 | -         |
| 14  | Turbidity            | 3       | NTU   | 20                 | Not Clear |
| 15  | Salinity             | 0.00    | %     | -                  | -         |
| 16  | Arsenic <sup>8</sup> | 0.000   | Mg/L  | 0.05               | -         |
| 17  | Lead <sup>7</sup>    | ND      | ppb   | 0.05               | -         |

"ND" = Not Detected

"LOD" = Lower limit of detection

" - " = No Reference Standard

| Tested by                                                                      | Checked by                                                                        | Approved by                                                                     |
|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| <br>Daw May Myat Khine<br>Lab. Technician II<br>Ecological Laboratory<br>ALARM | <br>Daw Lin Myat Myat Aung<br>Lab. Technician I<br>Ecological Laboratory<br>ALARM | <br>Dr. Aye Aye Win<br>Laboratory In-Charge<br>Ecological Laboratory<br>(ALARM) |

No-121, Conner of Shu Khin Thar Street and (7) Street, 3 Block, South Okkalapa Township, Yangon.

Telephone: +95 9407496078

Website: <http://www.ecolabmyanmar.org> Email: [aclab.2022@gmail.com](mailto:aclab.2022@gmail.com)

## ALARM Ecological Laboratory

### Water Testing Result Report



| Laboratory Testing Methods |                                            |                                                                                                                                                                 |
|----------------------------|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Index                      | Instrument / Method                        | References / Descriptions                                                                                                                                       |
| 1                          | pH Meter                                   | Electrode method (Approved by EPA, ISO, ASTM), Hanna electrode meter Certified by 2014 EMS, Certified by QMS                                                    |
| 2                          | DO Meter                                   | Electrochemical probe method, Dissolved Oxygen Probe Measurement (Approved by EPA, ISO, ASTM)<br>Horiba DO electrode certified with IP67 standards and measures |
| 3                          | SpectroDirect Methods                      | Lovibond brand reagent testing methods, precision of the methods are identical to the precision specified in the standard literature of AWWA and ISO            |
| 4                          | TDS Meter                                  | Electrode method (Approved by EPA, ISO, ASTM), Hanna electrode meter Certified by 2014 EMS, Certified by QMS                                                    |
| 5                          | Conductivity Meter                         | Electrode method, conductivity cell (Approved by EPA, ISO, ASTM), Hanna electrode meter Certified by 2014 EMS, Certified by QMS                                 |
| 6                          | BOD Testing Method                         | Method 405.1, USEPA Method for Chemical Analysis of Water and Waste water                                                                                       |
| 7                          | Atomic Adsorption Spectrophotometer        | Shimadzu AA-6200, which is based on the Japan Water Standard Testing Method also approved by EPA and ASTM                                                       |
| 8                          | Arsenic Test Kit                           | Lovibond brand Arsenic Test kit certified by DIN ISO 1997/ Follow Procedure: Meets WHO requirements:                                                            |
| 9                          | Liquid-Liquid Partition Gravimetric Method | Test Method for Oil and Grease (Solvent Extractable Substances) in Water (EPA 1664) by using n-Hexane                                                           |

| Standards References |                                                                                                                                                                                                                                                       |                                                                                                                                          |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Index                | Standard Names                                                                                                                                                                                                                                        | References                                                                                                                               |
| a                    | WHO Standard for Drinking Water (2011)                                                                                                                                                                                                                | Guidelines for Drinking-water Quality 4 <sup>th</sup> edition, World Health Organization, 2011.                                          |
| b                    | US EPA Drinking Water Standard 2018                                                                                                                                                                                                                   | 2018 Edition of the Drinking Water Standards and Health Advisories, EPA 822-F-18-001, Office of Water, USEPA, Washington, DC, March 2018 |
| c                    | Myanmar National Drinking Water Quality Standard                                                                                                                                                                                                      | Myanmar National Standard Department, Department of Research and Innovation, Ministry of Education                                       |
| d                    | Myanmar Emission Guideline (2015)                                                                                                                                                                                                                     | National Environmental Quality (Emission) Guidelines, Order No. (613/2015) MOICAF, 2015, December 29.                                    |
| e                    | At the edge of a scientifically established mixing zone which takes into account ambient water quality, receiving water use, potential receptors and assimilative capacity; when the zone is not defined, use 100 meters from the point of discharge. |                                                                                                                                          |

#### Quality Parameters Descriptions

**pH:** Although pH usually has no direct impact on consumers, it is one of the most important operational water quality parameters. Water generally becomes more corrosive with decreasing pH; however, excessively alkaline water also may be corrosive. **Temperature:** will have an impact on the acceptability of a number of other inorganic constituents and chemical contaminants that may affect taste. High water temperature enhances the growth of microorganisms and may increase problems related to taste, odor, color and corrosion. **Color:** Drinking water should ideally have no visible color. Color in drinking water is usually due to the presence of colored organic matter (primarily humic and fulvic acids) associated with the humus fraction of soil. Color is also strongly influenced by the presence of iron and other metals, either as natural impurities or as corrosion products. It may also result from the contamination of the water source with industrial effluents and may be the first indication of a hazardous situation. **Turbidity:** Turbidity in water is caused by suspended particles or colloidal matter that obstructs light transmission through the water. It may be caused by inorganic or organic matter or a combination of the two. Microorganisms (bacteria, viruses and protozoa) are typically attached to particulates, and removal of turbidity by filtration will significantly reduce microbial contamination in treated water. **Total Dissolved Solid (TDS):** The total of all dissolved mineral constituents, usually expressed in milligrams per liter. The concentration of dissolved solids may affect the taste of water. Water that contains more than 1,000 mg/L is unsuitable for many industrial uses. Some dissolved mineral matter is desirable, otherwise the water would have no taste. The dissolved solids concentration commonly is called the water's salinity and is classified as follows: fresh, 0-1,000 mg/L; slightly saline, 1,000-3,000 mg/L; moderately saline, 3,000-10,000 mg/L; very saline, 10,000-35,000 mg/L; and briny, more than 35,000 mg/L. **Total Suspended Solid (TSS):** Both organic and inorganic particles of all sizes can contribute to the suspended solids concentration. These solids include anything drifting or floating in the water, from sediment, silt and sand to plankton and algae. TSS are particles that are larger than 2 microns found in the water column. Anything smaller than 2 microns (average filter size) is considered a dissolved solid. **Total Solid:** Total solids are dissolved solids plus suspended solids in water. **Conductivity:** Conductivity is nothing but the measure of the capability of water to pass the flow of electric current. This ability of conductance is said to be directly proportional to the concentration of the ions present in the water. **Chloride:** Large concentrations increase the corrosiveness of water and, in combination with sodium, give water a salty taste. **Hardness:** Related to the soap-consuming characteristics of water; results in formation of scum when soap is added. May cause deposition of scale in boilers, water heaters, and pipes. Hardness contributed by calcium and magnesium, bicarbonate and carbonate mineral species in water is called carbonate hardness; hardness in excess of this concentration is called noncarbonate hardness. Water that has a hardness less than 61 mg/L is considered soft; 61-120 mg/L, moderately hard; 121-180 mg/L, hard; and more than 180 mg/L, very hard. **Dissolved Oxygen:** Required by higher forms of aquatic life for survival. Depletion of dissolved oxygen in water supplies can encourage the microbial reduction of nitrate to nitrite and sulfate to sulfide.

It can also cause an increase in the concentration of ferrous iron in solution. **Biological/Chemical Oxygen Demand (BOD & COD):** BOD is similar in function to chemical oxygen demand (COD), in that both measure the amount of organic compounds in water. However, COD is less specific, since it measures everything that can be chemically oxidized, rather than just levels of biologically active organic matter. **Aluminum:** No known necessary role in human or animal diet. Nontoxic in the concentrations normally found in natural water supplies. Elevated dissolved aluminum concentrations in some low pH waters can be toxic to some types of fish. **Manganese:** Causes gray or black stains on porcelain, enamel, and fabrics. Can promote growth of certain kinds of bacteria that clog pipes and wells. **Sodium & Potassium:** Large concentrations may limit use of water for irrigation and industrial use and, in combination with chloride, give water a salty taste. Abnormally large concentrations may indicate natural brines, industrial brines, or sewage. **Zinc:** Essential and beneficial in metabolism; its deficiency in young children or animals will retard growth and may decrease general body resistance to disease. Seems to have no ill effects even in fairly large concentrations (20,000-40,000 mg/L), but can impart a metallic taste or milky appearance to water. Zinc in drinking water commonly is derived from galvanized coatings of piping. **Iron:** Forms rust-colored sediment; stains laundry, utensils, and fixtures reddish brown. Objectionable for food and beverage processing. Can promote growth of certain kinds of bacteria that clog pipes and well openings. **Arsenic:** is toxic. A cumulative poison that is slowly excreted. Can cause nasal ulcers; damage to the kidneys, liver, and intestinal walls; and death. Recently suspected to be a carcinogen. **Chlorine:** Chlorine is added to water supplies to kill bacteria. Short term exposure to chlorine comes primarily from bathing and other activities that use hot water rather than from drinking. Short term exposure irritates the eyes and lungs, and within 15 minutes of exposure victims experience coughing, shortness of breath and headaches. Regular exposure to chlorine in the home has been associated with asthma and other respiratory diseases. **Cyanide:** Cyanide is highly acutely toxic. It is detoxified in the liver by first-pass metabolism following oral exposure. As a consequence, exposure to a dose spread over a longer period, through a day, for example, will result in lower toxicity, or higher tolerance, than the same dose given in a single bolus dose. **Nitrite:** Commonly formed as an intermediate product in bacterially mediated nitrification and denitrification of ammonia and other organic nitrogen compounds. An acute health concern at certain levels of exposure. Nitrite typically occurs in water from fertilizers and is found in sewage and wastes from humans and farm animals. Concentrations greater than 1.0 mg/L, as nitrogen, may be injurious when used in feeding infants. **Nitrate & Nitrate-N:** Concentrations greater than local background levels may indicate pollution by feedlot runoff, sewage, or fertilizers. Concentrations greater than 10 mg/L, as nitrogen, may be injurious when used in feeding infants. **Phosphorus & Ortho-phosphate:** Dense algal blooms or rapid plant growth can occur in waters rich in phosphorus. A limiting nutrient for eutrophication since it is typically in shortest supply. Sources are human and animal wastes and fertilizers. **Ammonia:** Plant nutrient that can cause unwanted algal blooms and excessive plant growth

when present at elevated levels in water bodies. Sources include decomposition of animal and plant proteins, agricultural and urban runoff, and effluent from waste-water treatment plants. **Lead:** A cumulative poison, toxic in small concentrations. Can cause lethargy, loss of appetite, constipation, anemia, abdominal pain, gradual paralysis in the muscles, and death. **Copper:** Essential to metabolism; copper deficiency in infants and young animals results in nutritional anemia. Large concentrations of copper are toxic and may cause liver damage. Moderate levels of copper (near the action level) can cause gastro-intestinal distress. **Cadmium:** A cumulative poison; very toxic. Not known to be either biologically essential or beneficial. Believed to promote renal arterial hypertension. Elevated concentrations may cause liver and kidney damage, or even anemia, retarded growth, and death. **Nickel:** Very toxic to some plants and animals. Toxicity for humans is believed to be very minimal. **Sulfide:** The "rotten eggs" odor of hydrogen sulfide is particularly noticeable in some ground waters and in stagnant drinking water in the distribution system, as a result of oxygen depletion and the subsequent reduction of sulfate by bacterial activity. Sulfide is oxidized rapidly to sulfate in well aerated or chlorinated water, and hydrogen sulfide levels in oxygenated water supplies are normally very low. **Sulfate:** Sulfates of calcium and magnesium form hard scale. Large concentrations of sulfate have a laxative effect on some people and, in combination with other ions, give water a bitter taste. **Alkalinity:** A measure of the capacity of unfiltered water to neutralize acid. In almost all natural waters alkalinity is produced by the dissolved carbon dioxide species, bicarbonate and carbonate. **Phenol:** The presence of phenol in drinking water probably results from using contaminated surface water or groundwater as a source. Its presence in groundwater is probably the result of release to soil, often industrial releases or leachate from waste dumps, and the subsequent leaching of phenol through the soil to the groundwater. Chlorophenols are present in drinking water as a result of the chlorination of phenols, as by products of the reaction of hypochlorite with phenolic acids, as biocides or as degradation products of phenoxycarbicides. IARC has classified 2,4,6-trichlorophenol in Group 2B (possibly carcinogenic to humans). **Boron:** Essential to plant growth, but may be toxic to crops when present in excessive concentrations in irrigation water. Sensitive plants show damage when irrigation water contains more than 670 µg/L and even tolerant plants may be damaged when boron exceeds 2,000 µg/L. The recommended limit is 750 µg/L for long term irrigation on sensitive crops. **Fluoride:** To produce signs of acute fluoride intoxication, minimum oral doses of about 1 mg of fluoride per kilogram of body weight were required. Concentrations above this guideline value (1.5 mg/L) carry an increasing risk of dental fluorosis and that progressively higher concentrations lead to increasing risks of skeletal fluorosis. **Oil & Grease:** Organic toxic waste (oil and grease (O&G)) causes ecology damages for aquatic organisms, plant, animal, and equally, mutagenic and carcinogenic for human being. They discharge from different sources to form a layer on water surface that decreases dissolved oxygen.

~~~ Thank you so much for using our testing services ~~~

No-121, Conner of Shu Khin Thar Street and (7) Street, 3 Block, South Okkalapa Township, Yangon.
Telephone: +95 9407496078
Website: <http://www.ecolabmyanmar.org> Email: aclab.2022@gmail.com



ပတ်ဝန်းကျင်ရေးရာဓာတ်ခွဲခန်း Ecological Laboratory



စိမ်းလန်းအသိမြှင့်၊ ပြီးတိုးတက်ရေးအသင်း (Advancing Life and Regenerating Motherland, ALARM)
No.121, Corner of Shu Khin Thar Street & 7 Street, (3) Block, South Oakkalapa Township, Yangon.Tel: - 09-407496078

စာအမှတ်/Reference Number: EL(M)-R/1274

နေ့စွဲ / Date: 22 May, 2025

ဓာတ်ခွဲခန်းစစ်ဆေးမှု အစီအရင်ခံစာ / Laboratory Analysis Report

နမူနာရာဇဝင် / Sample Profile

| | | | | |
|---|--|---|---------------|----------|
| နမူနာအမည် / Sample Name | Sample (3) Wastewater (WW-1) | နမူနာအမှတ် / Sample ID. | 1274 | |
| နေရာ (မြို့နယ်)
Location (township) | Hlaing Thar Yar Ts | လက်တီတွဒ် Latitude | 16°54'28.06"N | |
| | | လောင်ဂျီတွဒ် Longitude | 96° 4'10.55"E | |
| နေရာ (တိုင်းပြည်နယ်)
Location (Region / state) | Yangon Region | | | |
| ပေးပို့သူအမည် / Sender Name | U Aung Kyaw Zin Latt | နမူနာကောက်ချိန် (နေ့နာရီ)
Sampling Time (Date,Time) | 5-5-2025 | 10:30 AM |
| အဖွဲ့အစည်း / Organization | Golden Lace POSCO International Co., Ltd | | | |
| ဆက်သွယ်ရန် / Contact | 09796921149 | နမူနာရောက်ရှိချိန် (နေ့နာရီ)
Arriving Time (Date,Time) | 5-5-2025 | 13:00 PM |

(This laboratory analysis report is based solely on the sample submitted by the customer)

(ဤဓာတ်ခွဲခန်းစစ်ဆေးမှုအစီအရင်ခံစာသည်ပေးပို့သူမှပို့ဆောင်ခဲ့သည့်နမူနာကိုသာအခြေခံထားပါသည်။)

Analysis Result / စမ်းသပ်ချက်အဖြေ

| စဉ်
Sr. | အရည်အသွေးညွှန်းကိန်း
Quality Parameter | ရလဒ် အဖြေ
Results | နည်းစဉ်
Method | စံသတ်မှတ်ချက်
Drinking Standard | မှတ်ချက်
Remark |
|------------|---|----------------------|-----------------------------------|------------------------------------|--------------------|
| 1 | Total Plate count (CFU /100ml) | | Total plate count method | 0 | |
| 2 | Total Coliform count (MPN/100ml)
(Presumption test) | ND | Most Probable Number method | 0 | |
| 3 | Total faecal coliform count (MPN/100ml)
(Presumption test) | | Most Probable Number method | 0 | |
| 4 | Total Coliform count (CFU/100ml)
(Confirm test) | | Eosin Methyl blue agar plate test | 0 | |
| 5 | Complete test for coliform bacteria | | Gram staining test | - | |
| 6 | Total Coliform count (CFU/ml) | | 3M Plate count method | 0 | |
| 7 | Total <i>E. coli</i> count (CFU/ml) | | 3M Plate count method | 0 | |

Note: The target sample needs to test some additional test to confirm total coliform and total faecal coliform

တိုင်းတာတွက်ချက်သူ
Tested

May Zaw

Research Assistant
ALARM

စစ်ဆေးပြီး
Check by

May Myat Nyein

Research Assistant
ALARM

တာဝန်ခံ
Approved by

Ni tar Nwe

Research Scientist
ALARM

ALARM Ecological Laboratory

Water Testing Result Report



Report Number: EL-WR-25-02351

Date: May 22, 2025

Client Information

Client Name : Golden Lace POSCO International Co., Ltd
Organization : -
Client ID : -
Registration Date & Time : 5-5-2025, 13:00 PM
Contact : U Aung Kyaw Zin Latt
E - Mail : -
Testing Purpose : IEE (Revise Report)

Sample Information

Sample ID : 10560
Sample Name : Sample 3
Sample Type / Source : Wastewater
Sampling Date & Time : 5-5-2025, 10:30 AM
Sample Location : Hlaing Thar Yar Township
Latitude : 16°54'28.06"N
Longitude : 96° 4'10.55"E

Testing Results

*This laboratory analysis report is based solely on the sample submitted by the client unless client took our sampling service.
This report shall not be reproduced except in full, without written approval of the laboratory*

| Sr. | Quality Parameters | Results | Units | Drinking Standards | Remarks |
|-----|----------------------|---------|-------|--------------------|-----------|
| 1 | Alkalinity | 200 | mg/L | 200 | Normal |
| 2 | Magnesium | 10.0 | mg/L | 30 | - |
| 3 | Sodium | 95.0 | mg/L | 200 | - |
| 4 | Potassium | ND | mg/L | - | - |
| 5 | Total Hardness | 155 | mg/L | 500 | - |
| 6 | Sulphate | 1.2 | mg/L | 400 | - |
| 7 | Chloride | 20 | mg/L | 600 | - |
| 8 | Iron ⁷ | 0.15 | mg/L | 0.5-1.5 | - |
| 9 | Dissolve Oxygen | 2.5 | mg/L | - | - |
| 10 | COD ³ | ND | mg/L | 125 | - |
| 11 | BOD ⁶ | 1.2 | mg/L | - | - |
| 12 | pH | 6.2 | - | 6.5-8.5 | - |
| 13 | Ammonia-Nitrogen | 0.5 | mg/L | 10 | - |
| 14 | Turbidity | 3 | NTU | 20 | Not Clear |
| 15 | Salinity | 0.00 | % | - | - |
| 16 | Arsenic ⁸ | 0.000 | Mg/L | 0.05 | - |
| 17 | Lead ⁷ | ND | ppb | 0.05 | - |

"ND" = Not Detected

"LOD" = Lower limit of detection

" - " = No Reference Standard

Tested by

Checked by

Approved by

Daw May Mye Thine
Lab. Technician II
Ecological Laboratory
ALARM

Daw Lin Mye Myat Aung
Lab. Technician I
Ecological Laboratory
ALARM

Dr. Aye Aye Win
Laboratory In-Charge
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ALARM Ecological Laboratory

Water Testing Result Report



| Laboratory Testing Methods | | |
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|----------------------|---|--|
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| e | At the edge of a scientifically established mixing zone which takes into account ambient water quality, receiving water use, potential receptors and assimilative capacity; when the zone is not defined, use 100 meters from the point of discharge. | |

Quality Parameters Descriptions

pH: Although pH usually has no direct impact on consumers, it is one of the most important operational water quality parameters. Water generally becomes more corrosive with decreasing pH; however, excessively alkaline water also may be corrosive. **Temperature:** will have an impact on the acceptability of a number of other inorganic constituents and chemical contaminants that may affect taste. High water temperature enhances the growth of microorganisms and may increase problems related to taste, odor, color and corrosion. **Color:** Drinking water should ideally have no visible color. Color in drinking water is usually due to the presence of colored organic matter (primarily humic and fulvic acids) associated with the humus fraction of soil. Color is also strongly influenced by the presence of iron and other metals, either as natural impurities or as corrosion products. It may also result from the contamination of the water source with industrial effluents and may be the first indication of a hazardous situation. **Turbidity:** Turbidity in water is caused by suspended particles or colloidal matter that obstructs light transmission through the water. It may be caused by inorganic or organic matter or a combination of the two. Microorganisms (bacteria, viruses and protozoa) are typically attached to particulates, and removal of turbidity by filtration will significantly reduce microbial contamination in treated water. **Total Dissolved Solid (TDS):** The total of all dissolved mineral constituents, usually expressed in milligrams per liter. The concentration of dissolved solids may affect the taste of water. Water that contains more than 1,000 mg/L is unsuitable for many industrial uses. Some dissolved mineral matter is desirable, otherwise the water would have no taste. The dissolved solids concentration commonly is called the water's salinity and is classified as follows: Fresh, 0-1,000 mg/L; slightly saline, 1,000-3,000 mg/L; moderately saline, 3,000-10,000 mg/L; very saline, 10,000-35,000 mg/L; and briny, more than 35,000 mg/L. **Total Suspended Solid (TSS):** Both organic and inorganic particles of all sizes can contribute to the suspended solids concentration. These solids include anything drifting or floating in the water, from sediment, silt and sand to plankton and algae. TSS are particles that are larger than 2 microns found in the water column. Anything smaller than 2 microns (average filter size) is considered a dissolved solid. **Total Solid:** Total solids are dissolved solids plus suspended solids in water. **Conductivity:** Conductivity is not a measure of the capability of water to pass the flow of electric current. This ability of conductance is said to be directly proportional to the concentration of the ions present in the water. **Chloride:** Large concentrations increase the corrosiveness of water and, in combination with sodium, give water a salty taste. **Hardness:** Related to the soap-consuming characteristics of water; results in formation of scum when soap is added. May cause deposition of scale in boilers, water heaters, and pipes. Hardness contributed by calcium and magnesium, bicarbonate and carbonate mineral species in water is called carbonate hardness; hardness in excess of this concentration is called noncarbonate hardness. Water that has a hardness less than 61 mg/L is considered soft; 61-120 mg/L, moderately hard; 121-180 mg/L, hard; and more than 180 mg/L, very hard. **Dissolved Oxygen:** Required by higher forms of aquatic life for survival. Depletion of dissolved oxygen in water supplies can encourage the microbial reduction of nitrate to nitrite and sulfate to sulfide.

It can also cause an increase in the concentration of ferrous iron in solution. **Biological/Chemical Oxygen Demand (BOD & COD):** BOD is similar in function to chemical oxygen demand (COD), in that both measure the amount of organic compounds in water. However, COD is less specific, since it measures everything that can be chemically oxidized, rather than just levels of biologically active organic matter. **Aluminum:** No known necessary role in human or animal diet. Nontoxic in the concentrations normally found in natural water supplies. Elevated dissolved aluminum concentrations in some low pH waters can be toxic to some types of fish. **Manganese:** Causes gray or black stains on porcelain, enamel, and fabrics. Can promote growth of certain kinds of bacteria that clog pipes and wells. **Sodium & Potassium:** Large concentrations may limit use of water for irrigation and industrial use and, in combination with chloride, give water a salty taste. Abnormally large concentrations may indicate natural brines, industrial brines, or sewage. **Zinc:** Essential and beneficial in metabolism; its deficiency in young children or animals will retard growth and may decrease general body resistance to disease. Seems to have no ill effects even in fairly large concentrations (20,000-40,000 mg/L), but can impart a metallic taste or milky appearance to water. **Zinc in drinking water** commonly is derived from galvanized coatings of piping. **Iron:** Forms rust-colored sediment; stains laundry, utensils, and fixtures reddish brown. Objectionable for food and beverage processing. Can promote growth of certain kinds of bacteria that clog pipes and well openings. **Arsenic:** is toxic. A cumulative poison that is slowly excreted. Can cause nasal ulcers; damage to the kidneys, liver, and intestinal walls; and death. Recently suspected to be a carcinogen. **Chlorine:** Chlorine is added to water supplies to kill bacteria. Short term exposure to chlorine comes primarily from bathing and other activities that use hot water rather than from drinking. Short term exposure irritates the eyes and lungs, and within 15 minutes of exposure victims experience coughing, shortness of breath and headaches. Regular exposure to chlorine in the home has been associated with asthma and other respiratory diseases. **Cyanide:** Cyanide is highly acutely toxic. It is detoxified in the liver by first-pass metabolism following oral exposure. As a consequence, exposure to a dose spread over a longer period, through a day, for example, will result in lower toxicity, or higher tolerance, than the same dose given in a single bolus dose. **Nitrite:** Commonly formed as an intermediate product in bacterially mediated nitrification and denitrification of ammonia and other organic nitrogen compounds. An acute health concern at certain levels of exposure. Nitrite typically occurs in water from fertilizers and is found in sewage and wastes from humans and farm animals. Concentrations greater than 2.0 mg/L, as nitrogen, may be injurious when used in feeding infants. **Nitrate & Nitrite-N:** Concentrations greater than local background levels may indicate pollution by feedlot runoff, sewage, or fertilizers. Concentrations greater than 10 mg/L, as nitrogen, may be injurious when used in feeding infants. **Phosphorus & ortho-phosphate:** Dense algal blooms or rapid plant growth can occur in waters rich in phosphorus. A limiting nutrient for eutrophication since it is typically in shortest supply. Sources are human and animal wastes and fertilizers. **Ammonia:** Plant nutrient that can cause unwanted algal blooms and excessive plant growth

when present at elevated levels in water bodies. Sources include decomposition of animal and plant proteins, agricultural and urban runoff, and effluent from waste-water treatment plants. **Lead:** A cumulative poison, toxic in small concentrations. Can cause lethargy, loss of appetite, constipation, anemia, abdominal pain, gradual paralysis in the muscles, and death. **Copper:** Essential to metabolism; copper deficiency in infants and young animals results in nutritional anemia. Large concentrations of copper are toxic and may cause liver damage. Moderate levels of copper (near the action level) can cause gastro-intestinal distress. **Cadmium:** A cumulative poison; very toxic. Not known to be either biologically essential or beneficial. Believed to promote renal arterial hypertension. Elevated concentrations may cause liver and kidney damage, or even anemia, retarded growth, and death. **Nickel:** Very toxic to some plants and animals. Toxicity for humans is believed to be very minimal. **Sulfide:** The "rotten egg" odor of hydrogen sulfide is particularly noticeable in some ground waters and in stagnant drinking water in the distribution system, as a result of oxygen depletion and the subsequent reduction of sulfate by bacterial activity. Sulfide is oxidized rapidly to sulfate in well aerated or chlorinated water, and hydrogen sulfide levels in oxygenated water supplies are normally very low. **Sulfate:** Sulfates of calcium and magnesium form hard scale. Large concentrations of sulfate have a laxative effect on some people and, in combination with other ions, give water a bitter taste. **Alkalinity:** A measure of the capacity of unfiltered water to neutralize acid. In almost all natural waters alkalinity is produced by the dissolved carbon dioxide species, bicarbonate and carbonate. **Phenol:** The presence of phenol in drinking water probably results from using contaminated surface water or groundwater as a source. Its presence in groundwater is probably the result of release to soil, often industrial releases or leachate from waste dumps, and the subsequent leaching of phenol through the soil to the groundwater. Chlorophenols are present in drinking water as a result of the chlorination of phenols, as by products of the reaction of hypochlorite with phenolic acids, as byproducts or as degradation products of phenoxypolychlorides. IARC has classified 2,4,6-trichlorophenol in Group 2B (possibly carcinogenic to humans). **Boron:** Essential to plant growth, but may be toxic to crops when present in excessive concentrations in irrigation water. Sensitive plants show damage when irrigation water contains more than 670 µg/L and even tolerant plants may be damaged when boron exceeds 2,000 µg/L. The recommended limit is 750 µg/L for long term irrigation on sensitive crops. **Fluoride:** To produce signs of acute fluoride intoxication, minimum oral doses of about 1 mg of fluoride per kilogram of body weight were required. Concentrations above this guideline value (1.5 mg/L) carry an increasing risk of dental fluorosis and that progressively higher concentrations lead to increasing risks of skeletal fluorosis. **Oil & Grease:** Organic toxic waste (oil and grease (O&G)) causes ecological damages for aquatic organisms, plant, animal, and equally, mutagenic and carcinogenic for human being. They discharge from different sources to form a layer on water surface that decreases dissolved oxygen.

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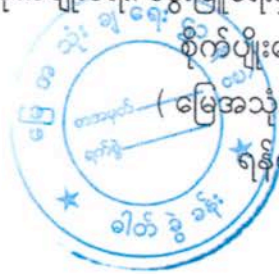
No-121, Conner of Shu Khin Thar Street and (7) Street, 3 Block, South Okkalapa Township, Yangon.

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APPENDIX M: THE LABORATORY RESULT OF SOIL QUALITY (2025)

ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်အစိုးရ
စိုက်ပျိုးရေး၊ မွေးမြူရေးနှင့် ဆည်မြောင်းဝန်ကြီးဌာန
စိုက်ပျိုးရေးဦးစီးဌာန
(မြေအသုံးချရေးဌာနခွဲ)
ရန်ကုန်မြို့



စာအမှတ်-ခခ- (၂)(၁) / ၂၀၂၅-၂၀၂၆ (၇၅)
နေ့စွဲ၊ ၂၀၂၅ ခုနှစ်၊ ဇွန်လ (၃) ရက်

အကြောင်းအရာ။ မြေနမူနာ ဓာတ်ခွဲအဖြေများပေးပို့ခြင်း
ရည် ညွှန်း ချက် ။ Environmental Compliance Consultancy Co., Ltd မှ (၅-၅-၂၀၂၅)
နေ့တွင် ပေးပို့သော နမူနာ။

အထက်အကြောင်းအရာပါ ကိစ္စနှင့်ပတ်သက်၍ ရည်ညွှန်းစာဖြင့် ပေးပို့
လာသော မြေနမူနာ (၁ - မျိုး) အား ဓာတ်ခွဲစစ်ဆေးပြီးဖြစ်၍ ဓာတ်ခွဲတွေ့ရှိချက်
အဖြေများကို ဤစာနှင့် အတူ ပူးတွဲပေးပို့ပါသည်။

(ဒေါက်တာသန္တာညီ)
ဒုတိယညွှန်ကြားရေးမှူး
ဓာတ်ခွဲခန်းတာဝန်ခံ
မြေအသုံးချရေးဌာနခွဲ



DEPARTMENT OF AGRICULTURE (LAND USE)
SOIL ANALYTICAL DATA AND SOIL INTERPRETATION OF RESULTS
Environmental Compliance Consultancy Co., Ltd (1-5-2025)

Division - Yangon Region

Sheet No. 1

Project Name- Seed Factory (IEE)

Sr N S.1/2025

Golden Lace POSCO International Co., Ltd

| Sr
No. | Sample | Soil Analytical Data | | | | Soil Interpretation of Results | | |
|-----------|--------|----------------------|---------------------------|------------------------------------|--------------|--------------------------------|-----|---------|
| | | Moisture
% | pH
Soil:Water
1:2.5 | EC
(mS/cm)
Soil:Water
1:5 | Total N
% | pH | EC | Total N |
| 1. | S-1 | 1.00 | 8.12 | 0.25 | 0.15 | Moderately
Alkaline | Low | Low |

(ဒေါက်တာသန္တာညီ)
ဒုတိယညွှန်ကြားရေးမှူး
ဓာတ်ခွဲခန်းတာဝန်ခံ
မြေအသုံးချရေးဌာနခွဲ



DEPARTMENT OF AGRICULTURE (LAND USE)
SOIL ANALYTICAL DATA AND SOIL INTERPRETATION OF RESULTS
Environmental Compliance Consultancy Co., Ltd (5-5-2025)

Division - Yangon Region

Sheet No. 1

Project Name - Seed Factory (IEE)

Sr N S.1/2025

Golden Lace POSCO International Co., Ltd

| Sr No. | Sample | Zinc (Zn)
ppm | Copper (Cu)
ppm | Iron (Fe)
ppm | Lead (Pb)
ppm | Cadmium (Cd)
ppm | Chromium (Cr)
ppm | Mercury (Hg)
ppm |
|--------|--------|------------------|--------------------|------------------|------------------|---------------------|----------------------|---------------------|
| 1. | S-1 | 0.3333 | - | 10.456 | ND | 0.001 | ND | ND |

မှတ်ချက်။ ။ မြေနမူနာခါတ်ခွဲအဖြေများအရ အန္တရာယ်ရှိ ဓာတ်ကြွင်းဖြစ်သော Cadmium (Cd) ပါဝင်မှုသည် စိုက်ပျိုးမြေတွင် ပါဝင်သင့်သည့်
MPL (Maximum permissible Limit) ထက်မကျော်လွန်ပါ။ (Ref : FAO, WHO)

(ဒေါက်တာသန္တာညီ)
ဒုတိယညွှန်ကြားရေးမှူး
ဓာတ်ခွဲခန်းတာဝန်ခံ
မြေအသုံးချရေးဌာနခွဲ

APPENDIX N: FIRE MANAGEMENT PLAN

Golden Lace POSCO Int'l Co., Ltd.

Shwe Lin Ban 322 Factory

မီးဘေး အန္တရာယ်ကြိုတင် ကာကွယ်ရေးစီမံချက်

ဆန်စက်ရုံ

လှိုင်သာယာမြို့နယ်၊ ရန်ကုန်

2022

နိဒါန်း

၁။ Golden Lace POSCO International Rice Processing & Export Company ၏ ရွှေလင်ဗန်း 322 စက်ရုံသည်ရန်ကုန် လှိုင်သာယာမြို့ နယ်၊ ရွှေလင်ဗန်းစက်မှုဇုန်ရှိ အမှတ် ၃၂၂၊ ကနောင်မင်းသားကြီးလမ်းပေါ်တွင်တည်ရှိပါသည်။ ကျွန်တော်တို့၏ ရွှေလင်ဗန်းစက်ရုံကို ဝန်ထမ်းအင်အား (၂၆)ခန့်ဖြင့် လုပ်ကိုင်လျက်ရှိပါသည်။ စက်ရုံဝန်းအတွင်း၌လည်း ရပ်ဝေးမှ လာရောက် အလုပ်လုပ်ကိုင်သော ဝန်ထမ်းများ သွားရေးလာရေးအခက်အခဲရှိပါသဖြင့် စက်ရုံအနေဖြင့် လူနေအဆောင် အဆောင် ထားရှိပါသည်။ ထို့ကြောင့် အဆောင်နေ ဝန်ထမ်းမိသားစုဝင်များသည် မိမိနေထိုင်ရာ အခန်းတွင် ချက်ပြုတ်စားသောက်ရသည်များရှိပါသည်။ သို့ပါ၍ ရုတ်တရက်ဆိုသလိုလျှပ်စစ်သုံးစွဲရာမှ လည်းကောင်း၊ ထမင်းချက်ဆောင်မှ လည်းကောင်း မီးဘေးအန္တရာယ် ကျရောက်နိုင်ပါသဖြင့် မီးဘေးအန္တရာယ် ကြိုတင်ကာကွယ်တားဆီးရေး လုပ်ငန်းများကို ဝန်ထမ်းများအနေဖြင့် စနစ်တကျဆောင်ရွက်သွားနိုင်ရေးအတွက် ဤစီမံချက်ကို ရေးဆွဲခြင်းဖြစ်ပါသည်။

ရည်ရွယ်ချက်

၂။ ကျွန်တော်များကုမ္ပဏီအနေဖြင့် အထူးသဖြင့် လှိုင်သာယာမြို့ နယ်အတွင်းရှိ ဒေသခံပြည်သူများ အလုပ်အကိုင်ရရှိပြီး စားဝတ်နေရေး အဆင်ပြေစွာ နေထိုင်နိုင်ရေးအတွက် တာဝန်ရှိသည်ဟုယူဆောင်ရွက်ရန် အကြီးအကဲ၏ လမ်းညွှန်ချက်များနှင့် အညီ စက်ရုံဝန်းအတွင်း မီးလောင်၍ပျက်စီးဆုံးရှုံးမှုများ မဖြစ်ပေါ်စေရေးနှင့် မီးဘေးအန္တရာယ်ကြုံတွေ့ပါက အချိန်တိုတိုနှင့် အလွယ်တကူ မီးငြိမ်းသတ်နိုင်စေရန် ကြိုတင်ကာကွယ် မီးငြိမ်းသတ်နိုင်စေရန် ရည်ရွယ်ပါသည်။

လုပ်နည်း

၃။ (က) အကြမ်းဖျင်းစီမံချက် - အောက်ပါအတိုင်းအပိုင်း(၃)ပိုင်းခွဲခြားဆောင်ရွက်ပါမည်။

- (၁) ကြိုတင်ကာကွယ်ခြင်း
- (၂) မီးလောင်စဉ် ဆောင်ရွက်ခြင်း
- (၃) မီးငြိမ်းသတ်ပြီးနောက်ဆောင်ရွက်ခြင်း

(ခ) အသေးစိတ်စီမံချက်

(၁) ကြိုတင်ကာကွယ်ခြင်း - မီးဘေးအန္တရာယ်ကြိုတင်ကာကွယ်ခြင်းကို ထိရောက်စွာ ဆောင်ရွက်နိုင်ပါက မီးဘေးအန္တရာယ်ကင်းပေးစေသည့် အဓိကအကြောင်းရင်းဖြစ်သည့်အတွက် အလေးထားဆောင်ရွက်သွားရန်လိုအပ်ပါသည်။

(၂) မီးလောင်မှုဖြစ်ပေါ်စေနိုင်သည့် အခြေအနေများ

(၁) ပတ်ဝန်းကျင်ရှိ မီးဘေးအန္တရာယ်ဖြစ်ပေါ်နိုင်မှုအခြေအနေများ

(ကက) မသမာသူအဖျက်အမှောက်သမားများမှ မီးရှိလာနိုင်ခြင်း။

(၅) လျှပ်စစ်ဂါယာကြိုးများ၊ မီးချောင်း၊ မီးလုံး၊ ပန်ကာမီးခလုတ်များ၊ စသည်တို့ကို ကျွမ်းကျင်လျှပ်စစ် ဝန်ထမ်းများနှင့် စစ်ဆေးပြီး ဟောင်းနွမ်းပျက် စစ်ဆေးပြီး ဟောင်းနွမ်းပျက်စီးနေမှုများကို အမြန်ဆုံးဖယ်ရှား အစားထိုးအသစ်လဲလှယ်ခြင်း။

(၆) မီးဘေးအန္တရာယ်ကြုံပါက ဦးစားပေးသယ်ယူရန်အတွက် အရေးကြီးစာရွက်စာတမ်းများထားရှိသည့် ဗီရို၊ သေတ္တာတွင် ဦးစားပေးအဆင့်သတ်မှတ်၍ စာကပ်ထားခြင်း။

(၇) မီးဘေးအန္တရာယ်ကြုံပါက အကူအညီရရှိစေရေးအတွက် ဆက်သွယ်သတင်းပို့ရမည့် မြို့နယ်မီးသတ် ဦးစီးဌာနနှင့် အထက်ဌာန ဖုန်းနံပါတ်များကို သိသာထင်ရှားအောင် ရေးသားချိတ်ဆွဲထားခြင်း။

(၈) မီးဘေးလုံခြုံရေး မီသတ်(၃)ဦးတို့အား ကွပ်ကဲရေးအဖွဲ့၊ မီးငြိမ်းသတ်ရေးအဖွဲ့၊ ပစ္စည်းသယ်ယူရေး အဖွဲ့များ စသည်ဖြင့်ဖွဲ့စည်းပြီး တာဝန်များသတ်မှတ်ပေးထားခြင်း။

(ဃ) စစ်ဆေးကြပ်မတ်ခြင်း

(၁) စက်ရုံဝန်းအတွင်း မသမာသူများဝင်ရောက်မှု မရှိစေရေးအတွက် သေချာစွာ စစ်ဆေးမေးမြန်းပြီး လူစိမ်း၊ ဧည့်သည်များအား တာဝန်ရှိသူ၏ ခွင့်ပြုချက်ရရှိမှသာ ဝင်ရောက်စေခြင်း။

(၂) တာဝန်မှူးများချထားပြီး စစ်ဆေးရေးကိတ်များ နေ့စဉ်စစ်ဆေးရေးမှတ်တမ်းစာအုပ်ထားရှိပြီး လိုက်လံစစ် ဆေးခြင်း၊ စစ်ဆေးချိန်ကို မှတ်ချက်ပြု ဆိုင်းထိုးခြင်း။

(၃) မီးဘေးကြိုတင်ကာကွယ်ရေးအတွက် ဇာတ်တိုက်သရုပ်ပြသခြင်းအား (၃ လ) တွင် တစ်ကြိမ် စုပေါင်း လေ့ကျင့်ဆောင်ရွက်ခြင်း။

(၂) မီးလောင်စဉ်ဆောင်ရွက်ခြင်း။ မီးလောင်ကျွမ်းမှုဖြစ်ပွားပါက ဖွဲ့စည်းတာဝန်ပေးထားသော အဖွဲ့များ သည်အောက်ပါအတိုင်းအသီးသီး ဆောင်ရွက်ရမည်။

(က) ကွပ်ကဲမှုအဖွဲ့။ အဖွဲ့ခေါင်းဆောင် ဦးဇော်ဝင်းမိုး ဦးစီးသည့် ဝန်ထမ်း (၃)ဦးပါဝင်သည့် ကွပ်ကဲမှုအဖွဲ့သည် အရေးပေါ်မီးသတ်၊ ဗဟိုမီးသတ်အဖွဲ့၊ မြို့နယ် မီးသတ်တပ်ဖွဲ့များသို့ သတင်းပို့ အကူအညီ တောင်းခံခြင်း၊ အရေးကြီးစာရွက်စာတမ်းများနှင့် ရုံးသုံးပစ္စည်းများအား စုစည်းထိန်းသိမ်းခြင်း၊ အခြားအဖွဲ့ များအား အမိန့်ပေးခြင်း၊ ကွပ်ကဲခြင်းများဆောင်ရွက်ရပါမည်။

(၁) ဦးဇော်ဝင်းမိုး အဖွဲ့ခေါင်းဆောင်

(၂) ဦးလွင်မြီး အဖွဲ့ဝင်

(၃) ဦးဇော်မိုးလိုိုင် အဖွဲ့ဝင်

(၅) လျှပ်စစ်ဂါယာကြိုးများ၊ မီးချောင်း၊ မီးလုံး၊ ပန်ကာမီးခလုတ်များ၊ စသည်တို့ကို ကျွမ်းကျင်လျှပ်စစ် ဝန်ထမ်းများနှင့် စစ်ဆေးပြီး ဟောင်းနွမ်းပျက် စစ်ဆေးပြီး ဟောင်းနွမ်းပျက်စီးနေမှုများကို အမြန်ဆုံးဖယ်ရှား အစားထိုးအသစ်လဲလှယ်ခြင်း။

(၆) မီးဘေးအန္တရာယ်ကြုံပါက ဦးစားပေးသယ်ယူရန်အတွက် အရေးကြီးစာရွက်စာတမ်းများထားရှိသည့် ဗီရို၊ သေတ္တာတွင် ဦးစားပေးအဆင့်သတ်မှတ်၍ စာကပ်ထားခြင်း။

(၇) မီးဘေးအန္တရာယ်ကြုံပါက အကူအညီရရှိစေရေးအတွက် ဆက်သွယ်သတင်းပို့ရမည့် မြို့နယ်မီးသတ် ဦးစီးဌာနနှင့် အထက်ဌာန ဖုန်းနံပါတ်များကို သိသာထင်ရှားအောင် ရေးသားချိတ်ဆွဲထားခြင်း။

(၈) မီးဘေးလုံခြုံရေး မီသတ်(၃)ဦးတို့အား ကွပ်ကဲရေးအဖွဲ့၊ မီးငြိမ်းသတ်ရေးအဖွဲ့၊ ပစ္စည်းသယ်ယူရေး အဖွဲ့များ စသည်ဖြင့်ဖွဲ့စည်းပြီး တာဝန်များသတ်မှတ်ပေးထားခြင်း။

(ဃ) စစ်ဆေးကြပ်မတ်ခြင်း

(၁) စက်ရုံဝန်းအတွင်း မသမာသူများဝင်ရောက်မှု မရှိစေရေးအတွက် သေချာစွာ စစ်ဆေးမေးမြန်းပြီး လူစိမ်း၊ ဧည့်သည်များအား တာဝန်ရှိသူ၏ ခွင့်ပြုချက်ရရှိမှသာ ဝင်ရောက်စေခြင်း။

(၂) တာဝန်မှူးများချထားပြီး စစ်ဆေးရေးကိတ်များ နေ့စဉ်စစ်ဆေးရေးမှတ်တမ်းစာအုပ်ထားရှိပြီး လိုက်လံစစ် ဆေးခြင်း၊ စစ်ဆေးချိန်ကို မှတ်ချက်ပြု ဆိုင်းထိုးခြင်း။

(၃) မီးဘေးကြိုတင်ကာကွယ်ရေးအတွက် ဇာတ်တိုက်သရုပ်ပြသခြင်းအား (၃ လ) တွင် တစ်ကြိမ် စုပေါင်း လေ့ကျင့်ဆောင်ရွက်ခြင်း။

(၂) မီးလောင်စဉ်ဆောင်ရွက်ခြင်း။ မီးလောင်ကျွမ်းမှုဖြစ်ပွားပါက ဖွဲ့စည်းတာဝန်ပေးထားသော အဖွဲ့များ သည်အောက်ပါအတိုင်းအသီးသီး ဆောင်ရွက်ရမည်။

(က) ကွပ်ကဲမှုအဖွဲ့။ အဖွဲ့ခေါင်းဆောင် ဦးဇော်ဝင်းမိုး ဦးစီးသည့် ဝန်ထမ်း (၃)ဦးပါဝင်သည့် ကွပ်ကဲမှုအဖွဲ့သည် အရေးပေါ်မီးသတ်၊ ဗဟိုမီးသတ်အဖွဲ့၊ မြို့နယ် မီးသတ်တပ်ဖွဲ့များသို့ သတင်းပို့ အကူအညီ တောင်းခံခြင်း၊ အရေးကြီးစာရွက်စာတမ်းများနှင့် ရုံးသုံးပစ္စည်းများအား စုစည်းထိန်းသိမ်းခြင်း၊ အခြားအဖွဲ့ များအား အမိန့်ပေးခြင်း၊ ကွပ်ကဲခြင်းများဆောင်ရွက်ရပါမည်။

(၁) ဦးဇော်ဝင်းမိုး အဖွဲ့ခေါင်းဆောင်

(၂) ဦးလွင်မြိုး အဖွဲ့ဝင်

(၃) ဦးဇော်မိုးလှိုင် အဖွဲ့ဝင်

(ခ) မီးငြိမ်းသတ်ရေးအဖွဲ့။ အဖွဲ့ခေါင်းဆောင် ဦးမြလင်းဇော် ဦးစီးသည့် ဝန်ထမ်း (၄)ဦးပါဝင်သည့် မီးငြိမ်းသတ်ရေးအဖွဲ့သည် မီးသတ်ဆေးဗူး၊ သံပုံး၊ ရေပုံးများနှင့် မီးချိတ်၊ မီးကပ်များ သယ်ယူပြီး မီးလောင်သည် နေရာ သို့ သွားရောက်ငြိမ်းသတ်ရပါမည်။

(၁) ဦးမြလင်းဇော် အဖွဲ့ခေါင်းဆောင်

(၂) ဦးထွန်းဇော်လေး အဖွဲ့ဝင်

(၃) ဦးသန့်ဝင်းဝင်းဦး အဖွဲ့ဝင်

(၄) ဦးထွတ်အောင်ကို အဖွဲ့ဝင်

(ဂ) ပစ္စည်းသယ်ယူရေးအဖွဲ့။ အဖွဲ့ခေါင်းဆောင်ဦးကျော်ရဲနိုင် ဦးစီးသည့် ဝန်ထမ်း (၄)ဦး ပါဝင်သည့် ပစ္စည်းသယ်ယူသည့် အဖွဲ့သည် စက်ရုံအတွင်းရှိ စက်ပစ္စည်းများအား မီးလွတ်ရာသို့ ရွှေ့ပြောင်းခြင်း၊ အရေးကြီးစာရွက်စာတမ်းများထားရှိသည့် ဗီရိုသေတ္တာများအား ရွှေ့ပြောင်းသယ်ယူခြင်း၊ မီးလောင်မှု ပိုမိုဖြစ်ပေါ်စေနိုင်သည့် ဓါတ်ဆီပုံးများအား လွတ်ကင်းရာသို့ သယ်ယူခြင်းတို့ကို ဆောင်ရွက်ပါမည်။

(၁) ဦးမင်းသူ အဖွဲ့ခေါင်းဆောင်

(၂) ဦးနေမျိုးဇော် အဖွဲ့ဝင်

(၃) ဦးမြင့် အဖွဲ့ဝင်

(၄) ဦးနေလင်းထိုက် အဖွဲ့ဝင်

(ဃ) ကူညီထောက်ပံ့ရေးအဖွဲ့။ အဖွဲ့ခေါင်းဆောင် ဦးဝေယံလင်း ဦးဆောင်သော ဝန်ထမ်း(၄)ဦး အဖွဲ့သည် မီးငြိမ်းသတ်ရေးအဖွဲ့အတွက် လိုအပ်သောရေ၊ သံပုံး၊ ပစ္စည်းကိရိယာများဖြည့်ဆည်းပံ့ပိုးခြင်း၊ မီးသတ်တပ်ဖွဲ့များ၏ လိုအပ်ချက်များကို ဖြည့်ဆည်းဆောင်ရွက်ပေးခြင်း၊ အခြားနေရာများသို့ မီးမကူးအောင်ရေဖျန်းပေးခြင်းများ ဆောင်ရွက်ပါမည်။

(၁) ဦးဝေယံလင်း အဖွဲ့ခေါင်းဆောင်

(၂) ဦးထက်နိုင်လင်း အဖွဲ့ဝင်

(၃) ဦးချစ်ပိုင်ထွန်း အဖွဲ့ဝင်

(၄) ဦးထက်အာကာဟိန်း အဖွဲ့ဝင်

(၃) မီးငြိမ်းသတ်ပြီးနောက် ဆောင်ရွက်ခြင်း

- (က) ဒဏ်ရာရရှိသူများ ရှိ/မရှိ စစ်ဆေး၍ ရှိပါက ဆေးရုံသို့ ပို့ဆောင်ခြင်း။
- (ခ) မီးလောင်ကျွမ်းမှုကြောင့် ပျက်စီးဆုံးရှုံးမှုများအား စစ်ဆေးစာရင်းကောက်ယူခြင်း။
- (ဂ) မီးလောင်ကျွမ်းမှုများထဲမှ အသုံးပြုနိုင်သေးသည့် ပစ္စည်းများအား ရွေးချယ်သယ်ယူခြင်း။
- (ဃ) မီးလွတ်ရာသို့ ရွှေ့ပြောင်းခဲ့သော ပစ္စည်းများအား ပြန်လည်နေရာချထားခြင်း။
- (င) မီးကြွင်းမီးကျန်မရှိစေရေး အသေးစိတ်စစ်ဆေးခြင်း။
- (စ) လူ၊ ပစ္စည်း၊ လျော့နည်းဆုံးရှုံးပျက်စီးမှု အခြေအနေကို အထက်ဌာနများသို့ အချိန်နှင့် တပြေးညီ အစီရင်ခံတင်ပြခြင်း။

(၄) စစ်ဆေးခြင်း

စက်ရုံအတွင်း မီးဘေးကြိုတင်ကာကွယ်ရေးစီမံချက်များ ရေးဆွဲပြီး လိုက်နာဆောင်ရွက်ရမည့်အပြင် သက်ဆိုင်ရာတာဝန်ရှိသူများအနေဖြင့် အောက်ပါအတိုင်း အခါမလပ်စစ်ဆေးဆောင်ရွက်သွားရန် လိုအပ်ပါသည်။

(က) ကြီးကြပ်ကွပ်ကဲရေးအဖွဲ့မှ နေ့စဉ်စစ်ဆေးခြင်း

- (၁) စက်ရုံရှိ မီးသတ်ဝန်ထမ်းများ လက်တွေ့မီးငြိမ်းသတ်ရေး လေ့ကျင့်ခန်းများကို အရှိန်အဟုန် မပြတ် လေ့ကျင့်ဆောင်ရွက်သွားရန်။
- (၂) မီးလောင်လွယ်သည့် အမှိုက်သရိုက်၊ ချို့နယ်များကို သန့်ရှင်းရေးအဖွဲ့ဖွဲ့၍ နေ့စဉ်သန့်ရှင်းရေး ဆောင်ရွက်ရန်။
- (၃) စက်ရုံအတွင်း အချိန်ပြည့် ကင်းလှည့်စစ်ဆေးရန်။
- (၄) စက်ရုံအတွင်း ခွင့်ပြုထားသည့်နေရာမှအပ ဆေးလိပ်သောက်ခြင်းကို ကြပ်တည်းစွာ တားမြစ်ရန်။
- (၅) မီးဘေးကြိုတင်ကာကွယ်ရေး ဆောင်ရွက်ထားမှုကို စစ်ဆေးပေးရန်နှင့် အကြံဉာဏ်ကောင်း များတောင်းခံနိုင်ရေးအတွက် မြို့နယ်မီးသတ်တပ်ဖွဲ့နှင့် ဆက်သွယ်ဆောင်ရွက်ရန်။

(ခ) အထက်အဖွဲ့အစည်းအဆင့်ဆင့်မှ အခါအားလျော်စွာ စစ်ဆေးခြင်း

- (၁) အထက်အဖွဲ့အစည်းအဆင့်ဆင့်မှ အခါအားလျော်စွာစစ်ဆေးခြင်း
- (၂) ရေကန်များအား အစဉ်အမြဲရေအပြည့်ရှိစေရေး ဆောင်ရွက်ထားရှိရန်
- (၃) မီးသတ်ပွိုင့်များတွင် သံပုံးများ၊ ရေပုံးများ၊ မီးချိတ်၊ မီးကပ်များနှင့် မီးသတ်ဆေးဘူးများအား စနစ်တကျထားရှိရန်

- (၄) မီးသတ်ဆေးဘူးများအား အသင့်သုံးစွဲနိုင်ရန် မြင်သာသော နေရာများတွင် ချိတ်ဆွဲထားရန်
- (၅) စက်ရုံမီးဘေးကြိုတင်ကာကွယ်ရေး ဆောင်ရွက်ထားမှုများကို စစ်ဆေးပေးရန်နှင့် အကြံဉာဏ်များတောင်းခံနိုင်ရေးအတွက် မြို့နယ်မီးသတ်တပ်ဖွဲ့များနှင့် ဆက်သွယ်ဆောင်ရွက်ရန်
- (၆) လျှပ်စစ်ပိုင်းဆိုင်ရာ ချို့ယွင်းမှုကြောင့် မီးဘေးအန္တရာယ်မဖြစ်ပေါ်စေရန် လျှပ်စစ်ဝန်ထမ်းများအား သတိပေးပြောကြားရန်
- (၇) အရေးပေါ်ဆက်သွယ်နိုင်မည့် မီးသတ်တပ်ဖွဲ့များ၊ မြို့နယ်အုပ်ချုပ်ရေးမှူး၊ မြန်မာနိုင်ငံ ရဲတပ်ဖွဲ့ ဌာနဆိုင်ရာများ၏ ဖုန်းနံပါတ်များကို မြင်သာသောနေရာတွင် ရေးသားထားရန်
- (၈) မီးဘေးအန္တရာယ် ကင်းရှင်းစေရေး ညွှန်ကြားချက်များကို အခါမလပ်ထုတ်ပြန်ညွှန်ကြားရန်၊ လိုက်နာမှု ရှိ/မရှိ စစ်ဆေးရန်

(၅) ဆက်သွယ်ရေး

မီးလောင်မှုအားအချိန်နှင့် တပြေးညီ သံချောင်းခေါက် အချက်ပေးခြင်း၊ သက်ဆိုင်ရာမီးသတ်တပ်ဖွဲ့များသို့ အကြောင်းကြားခြင်း၊ ရုံးဖုန်းများဖြင့် အကြောင်းကြားဆက်သွယ်ခြင်းတို့ကို ဆောင်ရွက်ပါမည်။

- | | |
|-----------------------------|---|
| (က) အရေးပေါ်မီးသတ်တပ်ဖွဲ့ | ၁၉၁ |
| (ခ) ဗဟိုမီးသတ်တပ်ဖွဲ့ | ၂၅၂ ၀၁၁ / ၂၅၂ ၀၂၂ |
| (ဂ) လှိုင်သာယာမီးသတ်တပ်ဖွဲ့ | ၀၉-၇၇၇၂၃၃၈ / ၀၉-၇၇၇၂၃၃၉ |
| (ဃ) စက်ရုံတာဝန်ခံဖုန်း | ၀၉-၄၂၁၉၅၀၄၀၀ / ၀၉-၂၅၄၂၁၉၀၅၇
၀၉-၇၈၁၀၆၄၄၅၁ |

နိဂုံး

(၆) စက်ရုံအတွင်း တာဝန်ရှိသူများအားလုံးသည် မီးကို သတိရှိရှိဖြင့် မီးဘေးရှောင် မလောင်ခင်တာ၊ သင့်ကြောင့်မီးမလောင်ပါစေနှင့် ဆိုသော ဆောင်ပုဒ်များကို နှလုံးသွင်းပြီး မီးဘေးအန္တရာယ်မှ ကင်းဝေးစေရန် အတွက် အားလုံးတွင် တာဝန်ကိုယ်စီရှိကြပါသည်။

နိုင်ငံပိုင်အရင်းအနှီးများ၊ ပုဂ္ဂလိကပိုင်အရင်းအနှီးများ မီးကြောင့် ဆုံးရှုံးမှုမဖြစ်စေရန်၊ မီးဘေးလုံခြုံရေး စီမံချက်အား လိုက်နာသွားကြရန် လိုအပ်ပါသည်။

စီမံချက်ပါ အချက်အလက်များနှင့် တာဝန်များကို သက်ဆိုင်ရာ ဝန်ထမ်းများနှင့် စက်ရုံဝန်ထမ်းများအားလုံးမှ အပြည့်အဝလိုက်နာဆောင်ရွက်ပြီး မီးဘေးအန္တရာယ် ကြိုတင်ကာကွယ်ရေးလုပ်ငန်းများကို စဉ်ဆက်မပြတ် သတိပေးနှိုးဆော်ခြင်းများပြုလုပ်ပါက မီးဘေးအန္တရာယ်ကင်းမည်ဖြစ်ပါသည်။

စက်ရုံရှိ မီးဘေးကာကွယ်ရေး အထောက်အကူပြုပစ္စည်းများစာရင်း

| စဉ် | အမျိုးအမည် | ယူနစ် | အရေအတွက် | မှတ်ချက် |
|-----|------------------------|-------|----------|-----------------|
| ၁ | မီးသတ်ဆေးဘူး | လုံး | ၂၀ | |
| ၂ | မီးချိတ် | ခု | ၅ | |
| ၃ | မီးကပ် | ခု | ၅ | |
| ၄ | ရေစုပ်စက် | လုံး | ၁ | |
| ၅ | ရေပိုက် | ခွေ | ၁ | တစ်ခွေ ၅၀ ပေ |
| ၆ | ရေအောက်ပိုက် ငုပ်တိုင် | ခု | ၁ | |
| ၇ | ရေအုတ်ကန် | လုံး | ၄ | ရေဂါလံ ၆၀၀၀ ဆံ့ |
| ၈ | ရေအုတ်ကန် | လုံး | ၁ | ရေဂါလံ ၂၅၀၀ ဆံ့ |

Golden Lace POSCO Int'l Co., Ltd.
Shwe Lin Ban 322 Factory

APPENDIX O: SOCIOECONOMIC QUESTIONNAIRE

**Socio-Economic, Health and Environment
Key Formant Data Baseline and Attitude Survey
IEE for Rice Mill Project
in Hlaing Thar Yar Township, Yangon Region of Myanmar
(Key Information Interview)**

Introduction

The purpose of this questionnaire is to collect general socio-economic information and to obtain your perception and understanding for Social Impact Assessment for Electronic Components Manufacturing Project in this area.

Golden Lace POSCO International Co., Ltd is planning to conduct Social Impact Assessment survey to update the existing EMP report by the Internal review team meeting's comments.

The survey will be focus on gaining Key information on the population statics, Identification of key local community and stakeholder rights, Community history, indigenous communities, culture and key events that have shaped economic and social development, Community and institutional structures and resources, Local business and industry content, Local land use patterns, Health and community wellbeing, Livelihoods, Access to physical and social infrastructure, Interests of vulnerable groups (tribal/ethnic minority groups, women headed households, economically vulnerable households, etc.) and Gender and equity issues.

I. KEY INFORMATION IDENTIFICATION

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------|---|--------------------------|----|---|--|---|--|---|--|---|--|---|--|---|--|---|--|---|--|----|--|----|--|----|--|----|--|----|--|--|
| 1 | Hlaing Thar Yar Township | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Ward | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 5%; text-align: center;">1</td><td style="width: 95%;">15</td></tr> <tr><td style="text-align: center;">2</td><td></td></tr> <tr><td style="text-align: center;">3</td><td></td></tr> <tr><td style="text-align: center;">4</td><td></td></tr> <tr><td style="text-align: center;">5</td><td></td></tr> <tr><td style="text-align: center;">6</td><td></td></tr> <tr><td style="text-align: center;">7</td><td></td></tr> <tr><td style="text-align: center;">8</td><td></td></tr> <tr><td style="text-align: center;">9</td><td></td></tr> <tr><td style="text-align: center;">10</td><td></td></tr> <tr><td style="text-align: center;">11</td><td></td></tr> <tr><td style="text-align: center;">12</td><td></td></tr> <tr><td style="text-align: center;">13</td><td></td></tr> <tr><td style="text-align: center;">14</td><td></td></tr> </table> | 1 | 15 | 2 | | 3 | | 4 | | 5 | | 6 | | 7 | | 8 | | 9 | | 10 | | 11 | | 12 | | 13 | | 14 | | <input type="checkbox"/>
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<input type="checkbox"/>
<input type="checkbox"/> |
| 1 | 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | GPS Coordinate ----- | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | Key Information Sample Number ----- | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Name of Key Informant ----- | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Name of Respondent ----- | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | |
|--------------------------|--------------------------|
| Date of Visits: | 15/5/ 25 |
| Enumerator: ----- | Supervisor: ----- |

Enumerator' Remark: -----

Supervisor's Remark: -----

Section A: Information of the respondent

| | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------|---|--|----------------|---|---------------------------|---|-----|---|------------------------|---|----------------------|---|---------------------|---|---------------------|---|----------|---|------------------------|---|---|---|
| A-1 | Name of Representative of Key Information | | | | | | | | | | | | | | | | | | | | | |
| A-2 | Telephone No | | | | | | | | | | | | | | | | | | | | | |
| A-3 | Titles of Key Informant
(Multiple answers allowed) | <table border="1"> <tr><td>Village leader</td><td>1</td></tr> <tr><td>Member of village council</td><td>2</td></tr> <tr><td>CSO</td><td>3</td></tr> <tr><td>Village school teacher</td><td>4</td></tr> <tr><td>Village health staff</td><td>5</td></tr> <tr><td>Village women group</td><td>6</td></tr> <tr><td>Village youth group</td><td>7</td></tr> <tr><td>Villager</td><td>8</td></tr> <tr><td>Other (Specified).....</td><td>9</td></tr> </table> | Village leader | 1 | Member of village council | 2 | CSO | 3 | Village school teacher | 4 | Village health staff | 5 | Village women group | 6 | Village youth group | 7 | Villager | 8 | Other (Specified)..... | 9 | 1 | □ |
| Village leader | 1 | | | | | | | | | | | | | | | | | | | | | |
| Member of village council | 2 | | | | | | | | | | | | | | | | | | | | | |
| CSO | 3 | | | | | | | | | | | | | | | | | | | | | |
| Village school teacher | 4 | | | | | | | | | | | | | | | | | | | | | |
| Village health staff | 5 | | | | | | | | | | | | | | | | | | | | | |
| Village women group | 6 | | | | | | | | | | | | | | | | | | | | | |
| Village youth group | 7 | | | | | | | | | | | | | | | | | | | | | |
| Villager | 8 | | | | | | | | | | | | | | | | | | | | | |
| Other (Specified)..... | 9 | | | | | | | | | | | | | | | | | | | | | |
| | | | 2 | | | | | | | | | | | | | | | | | | | |
| | | | 3 | | | | | | | | | | | | | | | | | | | |
| | | | 4 | | | | | | | | | | | | | | | | | | | |
| | | | 5 | | | | | | | | | | | | | | | | | | | |
| | | | 6 | | | | | | | | | | | | | | | | | | | |
| | | | 7 | | | | | | | | | | | | | | | | | | | |
| | | | 8 | | | | | | | | | | | | | | | | | | | |
| | | | 9 | | | | | | | | | | | | | | | | | | | |

Section B: Population Statics

| | | | | | | | | | | | | | | | | | | | | | | |
|------------------------|--------------------|--|------------|------|------------------|----------|----------|---|---------|---|------------------------|---|---------|---|-----|-----|------------------------|---|--|--|-----|--|
| B-1 | Population (Total) | Male | Female | B-2 | No. of Household | | | | | | | | | | | | | | | | | |
| | Question | Majority | Population | Skip | Response | | | | | | | | | | | | | | | | | |
| B-3 | Ethnicity | <table border="1"> <tr><td>Bamar</td><td>1</td></tr> <tr><td>Kayin</td><td>2</td></tr> <tr><td>Kachin</td><td>3</td></tr> <tr><td>Kayar</td><td>4</td></tr> <tr><td>Chin</td><td>5</td></tr> <tr><td>Rakhine</td><td>6</td></tr> <tr><td>Mon</td><td>7</td></tr> <tr><td>Other (Specified).....</td><td>8</td></tr> </table> | Bamar | 1 | Kayin | 2 | Kachin | 3 | Kayar | 4 | Chin | 5 | Rakhine | 6 | Mon | 7 | Other (Specified)..... | 8 | | | □□□ | |
| Bamar | 1 | | | | | | | | | | | | | | | | | | | | | |
| Kayin | 2 | | | | | | | | | | | | | | | | | | | | | |
| Kachin | 3 | | | | | | | | | | | | | | | | | | | | | |
| Kayar | 4 | | | | | | | | | | | | | | | | | | | | | |
| Chin | 5 | | | | | | | | | | | | | | | | | | | | | |
| Rakhine | 6 | | | | | | | | | | | | | | | | | | | | | |
| Mon | 7 | | | | | | | | | | | | | | | | | | | | | |
| Other (Specified)..... | 8 | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | Majority | Population | HH | Skip | Response | | | | | | | | | | | | | | | | |
| B-4 | Religion | <table border="1"> <tr><td>Buddhism</td><td>1</td></tr> <tr><td>Christian</td><td>2</td></tr> <tr><td>Hinduism</td><td>3</td></tr> <tr><td>Animism</td><td>4</td></tr> <tr><td>Other (Specified).....</td><td>5</td></tr> </table> | Buddhism | 1 | Christian | 2 | Hinduism | 3 | Animism | 4 | Other (Specified)..... | 5 | | | | □□□ | | | | | | |
| Buddhism | 1 | | | | | | | | | | | | | | | | | | | | | |
| Christian | 2 | | | | | | | | | | | | | | | | | | | | | |
| Hinduism | 3 | | | | | | | | | | | | | | | | | | | | | |
| Animism | 4 | | | | | | | | | | | | | | | | | | | | | |
| Other (Specified)..... | 5 | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |

Section C: Identification of key local community and stakeholder rights

| Question | Response categories | Skip | Response | | | | | | | | | | | |
|------------------------|--------------------------------------|--|----------------|---|------------------|---|--------------|---|--------------------|---|------------------------|---|--|---|
| C-1 | Who make decisions in the community? | <table border="1"> <tr><td>Village leader</td><td>1</td></tr> <tr><td>Religious Leader</td><td>2</td></tr> <tr><td>Elder People</td><td>3</td></tr> <tr><td>Small group leader</td><td>4</td></tr> <tr><td>Others (Specify)</td><td>5</td></tr> </table> | Village leader | 1 | Religious Leader | 2 | Elder People | 3 | Small group leader | 4 | Others (Specify) | 5 | | □ |
| Village leader | 1 | | | | | | | | | | | | | |
| Religious Leader | 2 | | | | | | | | | | | | | |
| Elder People | 3 | | | | | | | | | | | | | |
| Small group leader | 4 | | | | | | | | | | | | | |
| Others (Specify) | 5 | | | | | | | | | | | | | |

Section D. Community history

| Question | Majority | Response | Skip | Response | | | | | | | | | | | |
|------------------|---|--|---------------|----------|------------------|---|------------------------|---|------|---|-------|---|-------------------------|--|---|
| D-1 | Year of village founded | | | | | | | | | | | | | | |
| D-2 | Natural Water Resources in village habitation | <table border="1"> <tr><td>River</td><td>1</td></tr> <tr><td>Creek</td><td>2</td></tr> <tr><td>Stream</td><td>3</td></tr> <tr><td>Pond</td><td>4</td></tr> <tr><td>Lake</td><td>5</td></tr> </table> | River | 1 | Creek | 2 | Stream | 3 | Pond | 4 | Lake | 5 | Describe the name | | □ |
| River | 1 | | | | | | | | | | | | | | |
| Creek | 2 | | | | | | | | | | | | | | |
| Stream | 3 | | | | | | | | | | | | | | |
| Pond | 4 | | | | | | | | | | | | | | |
| Lake | 5 | | | | | | | | | | | | | | |
| D-3 | Distance from village (mile) | <table border="1"> <tr><td>River</td><td>1</td></tr> <tr><td>Stream</td><td>2</td></tr> <tr><td>Dam</td><td>3</td></tr> <tr><td>Pond</td><td>4</td></tr> </table> | River | 1 | Stream | 2 | Dam | 3 | Pond | 4 | | | □ | | |
| River | 1 | | | | | | | | | | | | | | |
| Stream | 2 | | | | | | | | | | | | | | |
| Dam | 3 | | | | | | | | | | | | | | |
| Pond | 4 | | | | | | | | | | | | | | |
| D-4 | Protect Area designated by government | <table border="1"> <tr><td>National Park</td><td>1</td></tr> <tr><td>National Reserve</td><td>2</td></tr> </table> | National Park | 1 | National Reserve | 2 | Describe the name..... | | □ | | | | | | |
| National Park | 1 | | | | | | | | | | | | | | |
| National Reserve | 2 | | | | | | | | | | | | | | |

** INDICATE THE QUESTION HAS SKIP (=>)

| | Question | Majority | | Response | Skip | Response |
|------|---|---|---|--|-----------------|---|
| | | <i>Historical Building/ Temple</i>
<i>Cultural heritage</i> | 3
4 | Describe the name
Describe the name | If no
=> D-7 | |
| D-5 | Are those historical site and cultural heritage adequately protected? | Yes
No | 1
2 | | | <input type="checkbox"/> |
| D-6 | Instance of Disaster in village, please mention year and how it affected the community | Yes
No | 1
2 | If yes, please describe
.....
..... | | <input type="checkbox"/> |
| D-7 | Are there any areas that you think are very important for wild plants (Flora)? | Yes
No | 1
2 | If yes, please describe
.....
..... | | <input type="checkbox"/> |
| D-8 | Are there any areas nearby that you think are very important for wild animal (Fauna)? | Yes
No | 1
2 | If yes, please describe
.....
..... | | <input type="checkbox"/> |
| D-9 | Is conservation of wildlife habitat important for you? | No
A little
Moderate
High important
Very important | 1
2
3
4
5 | | | <input type="checkbox"/> |
| D-10 | Have you notice any changes to air quality as long as you have been in the community? | Improved
Declined
No change | 1
2
3 | | 2=>D-11 | <input type="checkbox"/> |
| D-11 | Cause of change in air quality? | Industry
Livestock-industry
Brush-burning
Forest Fire
Others (Specify) | 1
2
3
4
5 | | | <input type="checkbox"/> |
| D-12 | Have you notice any changes to water quality as long as you have been in the community? | Improved
Declined
No change | 1
2
3 | | 2=>D-13 | <input type="checkbox"/> |
| D-13 | Cause of change in water quality? | Industry
Livestock-industry
Brush-burning
Forest Fire
Others (Specify) | 1
2
3
4
5 | | | <input type="checkbox"/> |
| D-14 | Has the climate changed since you have been living in the area? | Warmer
Cooler
Unchanged | 1
2
3 | | 2/3
=>D-13 | <input type="checkbox"/> |
| D-15 | Is the local climate changed to be? | Wetter
Drier | 1
2 | | | <input type="checkbox"/> |
| D-16 | What other projects did you experience before? | No experience
Road/Railway
Bridge
Dam
Industrial projects
Oil and Gas
Hydro power
Windfarm
Solar farm
Others (Specify) | 1
2
3
4
5
6
7
8
9
10 | | If no
=> E | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| D-17 | How did affect your community? | No affect
Positive
Negative | 1
2
3 | | | <input type="checkbox"/> |
| D-18 | Have you received compensation from any | Yes
No | 1
2 | | | <input type="checkbox"/> |

** INDICATE THE QUESTION HAS SKIP (=>)

| | Question | Majority | | Response | Skip | Response |
|------|---|--|-------------|----------|------------------|--------------------------|
| | previous development project? | | | | | |
| D-19 | Were you satisfied with the compensation? | Yes
No | 1
2 | | If no
=> D-20 | <input type="checkbox"/> |
| D-20 | Why you did not satisfy on compensation? | Communication
Price
Grievance Mechanism System | 1
2
3 | | | <input type="checkbox"/> |

Section E. Indigenous communities

| Question | Response categories | Skip | Response |
|----------|--|-------------|--------------------------|
| E-1 | Indigenous Group (HH)
Yes
No | 1
2 | <input type="checkbox"/> |
| E-2 | If yes, describe the name and HH | / | |
| E-3 | Language of communication
Owned language
Burmese
Others (Specify) | 1
2
3 | <input type="checkbox"/> |

Section F. Culture and key events that have shaped economic and social development

| Question | Response categories | Skip | Response |
|----------|--|----------------------------|---|
| F-1 | What are the most important cultural traditions in your community?
Language/ Literature
Custom
Taboo
Festival
Temples/ archaeological sites
Others (Specify) | 1
2
3
4
5
6 | <input type="checkbox"/> |
| F-2 | Percentage of adult can speak Myanmar language | | |
| F-3 | Percentage of adult can read documents in Myanmar language | | |
| F-4 | Percentage of literacy in the village | | |
| F-5 | Education level (%)
Technical or college/ University
Finish High School
Finish Middle School
Finish Primary School
Primary (Part)
No Schooling | 1
2
3
4
5
6 |
.....
.....
.....
..... |
| F-6 | Credit facilities
Family
Friends/ neighbor
Licensed creditor
Bank
Saving group
Others (Specify) | 1
2
3
4
5
6 | <input type="checkbox"/> |
| F-7 | Interest rate (%)
.....% per (year/month)
No Interest | 1
2 | <input type="checkbox"/> |

Section G. Community and institutional structures and resources

| Question | Response categories | Skip | Response |
|----------|---|----------------------------|--------------------------|
| G-1 | Community assistance: Are there any projects concerning on the community development project by Domestic and/ or International Organization in the village
Name of the project
Name of the organization
Type of Project | 1
2
3 |
..... |
| G-2 | Social group support
Youth group
Fishing Farm Group
Farming Group
Hunter group
Community group
Religious group | 1
2
3
4
5
6 | <input type="checkbox"/> |

** INDICATE THE QUESTION HAS SKIP (=>)

| Question | | Response categories | Skip | Response |
|----------|--|---|---------------------------------|----------|
| | | Low interest Micro Credit
Others (Specify) | 7
8 | |
| G-3 | Community Grievance Mechanism:
Information disclosure system in the village? | Radio
Television
Public address system
Newspaper
Notice
Meeting in the community
Others (Specify) | 1
2
3
4
5
6
7 | □□□□ |
| G-4 | What kind of grievance situation arises for the community? | Compensation
Communication
Community grievance settlement
Others (Specify) | 1
2
3
4 | □□ |
| G-5 | How are these grievance settled? | Inform to the Client
Inform to the related department
Inform to the village leader
Inform to the CSO
Inform to the Religious leader
Others (Specify) | 1
2
3
4
5
6 | □□ |
| G-6 | What is the role of village level institution/ organization in addressing these grievance? | Village leader
Related Department
CSO
Religious leader
Others (Specify) | 1
2
3
4
5 | □□ |
| G-7 | Who are considered as vulnerability in the village? | Poor
Disable
Old people (>70 years)
Widow
Woman headed
Others (Specify) | 1
2
3
4
5
6 | □□ |
| G-8 | What are the support system (if any) to help these people | | | |

Section H. Local business and industry content

| Question | | Response categories | Skip | Response |
|----------|--|---|---|--|
| H-1 | What are the key industries in this village? Please indicate up to three of them from the one with the biggest % of involvement by the community member? | Agriculture (Small Scale)
Peasant farming
Fishing
Livestock rearing Retail
Manufacturing with handcraft
Public service
Not particular industry. Most people work in nearby town
Others (Specify) | 1
2
3
4
5
6
7
8 | 1 st
□

2 nd
□

3 rd
□ |
| H-2 | Production (Yield per acre) | Lowland Rice
Upland Rice
Peas and beans
Peanut
Sesame
Battle Nut
Rubber
Eucalyptus
Teak
Cashew Nut
Oil Palm
Others (Specify) | 1
2
3
4
5
6
7
8
9
10
11
12 |
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
..... |
| H-3 | Type of Livestock (Number) | Buffalo
Cow
Goat | 1
2
3 | |

** INDICATE THE QUESTION HAS SKIP (=>)

| Question | | Response categories | | Skip | Response |
|----------|---|---|--|--------------|--------------------------|
| | | <i>Pig</i>
<i>Poultry</i>
<i>Horse</i>
<i>Others (Specify)</i> | <i>4</i>
<i>5</i>
<i>6</i>
<i>7</i> | | <input type="checkbox"/> |
| H-4 | Type of Non Timber Forest Product (NTPF) | <i>Bamboo</i>
<i>Wood</i>
<i>Bamboo Shoot</i>
<i>Others (Specify)</i> | <i>1</i>
<i>2</i>
<i>3</i>
<i>4</i> | If no
=>I | <input type="checkbox"/> |
| H-5 | Estimate Amount of NTFP collected by a HH (Viss per year) | | | | |
| H-6 | How often NTFP are collected? | <i>Regular Basic (at least 2 days per week)</i>
<i>Sometime</i>
<i>Seasonal basic</i>
<i>Others (Specify)</i> | <i>1</i>
<i>2</i>
<i>3</i>
<i>4</i> | | <input type="checkbox"/> |

Section I. Local land use patterns

| Question | | Response categories | Skip | Response |
|----------|--|-----------------------------|------|----------|
| I-1 | Village Total Land Area (acre) |  |  | ..... |
| I-2 | Allocated Land Area (acre) | Residential | 1 | ..... |
| | | Public Building | 2 | ..... |
| | | Religious Building | 3 | ..... |
| | | Agriculture | 4 | ..... |
| | | Forest | 5 | ..... |
| | | Others (Specify) | 6 | |
| I-3 | Average Agriculture land per household acre/HH | | | |
| I-4 | Household own | Agricultural Land | 1 | ..... |
| | | Garden Land | 2 | ..... |
| | | Forest | 3 | ..... |
| | | No Land | 4 | ..... |
| I-5 | Agricultural land use certificate | Issued Certificate (%) | 1 | ..... |
| | | In Process of certified (%) | 2 | ..... |
| | | No Certificate (%) | 3 | ..... |
| | | Type of Certificate | 4 | ..... |
| I-6 | Major Cultivated Crops (Food Crops) | Lowland Rice | 1 | □□□ |
| | | Upland Rice | 2 | |
| | | Oil seed | 3 | |
| | | Vegetable | 4 | |
| | | Peas and beans | 5 | |
| | | Pulses | 6 | |
| | | Maize | 7 | |
| | | Wheat | 8 | |
| | | Betal nut/ leave | 9 | |
| | | Peanut | 10 | |
| | | Fruits | 11 | |
| | | Toddy | 12 | |
| | | Other(Specified) | 13 | |
| I-7 | Plantation (Acre) | Rubber | 1 | ..... |
| | | Eucalyptus | 2 | ..... |
| | | Teak | 3 | ..... |
| | | Cashew Nut | 4 | ..... |
| | | Oil Palm | 5 | |
| | | Other(Specified) | 6 | |
| I-8 | Garden land (Acre) | Flowers | 1 | |
| I-9 | Agricultural/farming production (%) | Self consumption | 1 | ..... |
| | | Selling in the market | 2 | ..... |
| I-10 | Distance of land from home (mile) | | | |

** INDICATE THE QUESTION HAS SKIP (=>)

Section J. Health and community wellbeing

| Question | Response categories | Skip | Response |
|----------|--|--|--------------------------|
| J-1 | What health services are available to the village | <div> <div>Hospital</div> <div>Clinic</div> <div>Health center</div> <div>Village Nurse</div> <div>Midwife</div> <div>Other (Specified)</div> </div> <div>1</div> <div>2</div> <div>3</div> <div>4</div> <div>5</div> <div>6</div> | <input type="checkbox"/> |
| J-2 | Distance of Village (mile) | <div> <div>Hospital</div> <div>Clinic</div> <div>Health center</div> <div>Village Nurse</div> <div>Midwife</div> <div>Other (Specified)</div> </div> <div>1</div> <div>2</div> <div>3</div> <div>4</div> <div>5</div> <div>6</div> | <input type="checkbox"/> |
| J-3 | Identify the diseases which is main challenges | <div> <div>Diarrhea</div> <div>Malaria</div> <div>Respiratory tract infection (Cold/ Cough)</div> <div>Cholera</div> <div>Tuberculosis</div> <div>HIV/AIDS</div> <div>Guinea Worm</div> <div>Sexually transmitted Infection</div> <div>High blood Pressure</div> <div>Skin rash/itched</div> <div>Other (Specified)</div> </div> <div>1</div> <div>2</div> <div>3</div> <div>4</div> <div>5</div> <div>6</div> <div>7</div> <div>8</div> <div>9</div> <div>10</div> <div>11</div> | <input type="checkbox"/> |
| J-4 | Serious diseases are out-braked in the past year | <div> <div>Diarrhea</div> <div>Malaria</div> <div>Respiratory tract infection (Cold/ Cough)</div> <div>Cholera</div> <div>Tuberculosis</div> <div>Guinea Worm</div> <div>Sexually transmitted Infection</div> <div>High blood Pressure</div> <div>Skin rash/itched</div> <div>HIV/AIDS</div> <div>Syphilis</div> <div>Hepatitis</div> <div>Other (Specified)</div> </div> <div>1</div> <div>2</div> <div>3</div> <div>4</div> <div>5</div> <div>6</div> <div>7</div> <div>8</div> <div>9</div> <div>10</div> <div>11</div> <div>12</div> <div>13</div> | <input type="checkbox"/> |
| J-5 | Knowledge sharing for sexual health transferred to youth/Women | <div> <div>Yes</div> <div>No</div> </div> <div>1</div> <div>2</div> | <input type="checkbox"/> |
| J-6 | Providing of family planning services for women | <div> <div>Yes</div> <div>No</div> </div> <div>1</div> <div>2</div> | <input type="checkbox"/> |
| J-7 | Way of birth delivery | <div> <div>Home based through traditional nurse</div> <div>Midwife</div> <div>Institutional delivery in the hospital</div> <div>Other (Specified)</div> </div> <div>1</div> <div>2</div> <div>3</div> <div>4</div> | <input type="checkbox"/> |

Section K. Livelihoods

| Question | Response categories | Skip | Response |
|----------|-----------------------|---|--------------------------|
| K-1 | Source of main income | <div> <div>Agriculture (Lowland rice cultivation)</div> <div>Agriculture (Upland rice cultivation)</div> <div>Agriculture (Vegetation)</div> <div>Garden</div> <div>Plantation</div> <div>NTFP(Non-Timber Forest Product)</div> <div>Small scale trading (Shops, stalls)</div> <div>Transportation</div> <div>Government service</div> <div>Factory work</div> <div>Casual Labor/ Temporary</div> </div> <div>1</div> <div>2</div> <div>3</div> <div>4</div> <div>5</div> <div>6</div> <div>7</div> <div>8</div> <div>9</div> <div>10</div> <div>11</div> | <input type="checkbox"/> |

** INDICATE THE QUESTION HAS SKIP (=>)

| Question | | Response categories | Skip | Response |
|----------|---|---|--|----------------------------------|
| | | Collecting NTFP
Industry
Handicraft
Livestock rearing
Private Company
Fishing
Hunting
Other(Specified) | 12
13
14
15
16
17
18
19 | |
| K-2 | Average income per year (MMK) | Total village income
Income per capita
Income per capita of vulnerable people
Income of wealthiest people | 1
2
3
4 |
.....
.....
..... |
| K-3 | % of HH with regular income | | | |
| K-4 | Is there a definition of economically better off, medium, sufficient and poor by village? | Yes
No | 1
2 | <input type="checkbox"/> |
| K-5 | List of definition? | Economically better off
Medium
Sufficient and poor | 1
2
3 | <input type="checkbox"/> |

Section L. Access to physical and social infrastructure

| Question | | Response categories | Skip | Response |
|----------|--|---|---------------------------------|---|
| L-1 | Education Infrastructure (Number) | Nursery
Primary School
Middle School
High School
Technical or college/ University
Vocational
Other(Specified) | 1
2
3
4
5
6
7 |
.....
.....
.....
.....
.....
..... |
| L-2 | Health Infrastructure | Hospital
Clinic
Rural Health Center
Local Midwife
Other(Specified) | 1
2
3
4
5 |
.....
.....
.....
..... |
| L-3 | Access to Road Facilities | No road (reaching all the way to the village)
Rough Track (Bullock Cart or walking only)
Accessible by trawllargee but not car/trucks
Accessible by car/trucks in dry season only
Accessible by car/ truck in all seasons
Other(Specified) | 1
2
3
4
5
6 | □□□□ |
| L-4 | What is the distance from the village road to the main road to central district | | | |
| L-5 | Is the National Grid-line Electricity available in this village? | Yes
No | 1
2 | 2=>L-6
<input type="checkbox"/> |
| L-6 | Are there any alternative? | Private Generator
Community Generator
Alternative Energy (Specified)
Other(Specified) | 1
2
3
4 | 1=>L-7
2=>L-7
3=>L-7 |
| L-7 | Is the alternative electricity in this village enough for multi-purpose (e.g- pump or engine for well) | Yes
No | 1
2 | <input type="checkbox"/> |
| L-8 | Electrification (%) | National Grid
Private Generator
Community Generator
Renewable Energy (Specified)
Other (Specified) | 1
2
3
4
5 |
.....
.....
.....
..... |
| L-9 | Water supply (%) | Public Tap water
Tube Well | 1
2 |
..... |

** INDICATE THE QUESTION HAS SKIP (=>)

| Question | | Response categories | Skip | Response |
|----------|--|---|---------------------------------------|--|
| | | <i>Mountain Water</i>
<i>River or stream</i>
<i>Rain water collection</i>
<i>Dam/pond</i>
<i>Private water supply</i>
<i>Independent pipe shame</i>
<i>No source</i>
<i>Other(Specified)</i> | 3
4
5
6
7
8
9
10 |
.....
.....
.....
.....
...
..... |
| L-10 | Quality of water of main source | <i>Bad</i>
<i>Good</i> | 1
2 | <input type="checkbox"/> |
| L-11 | Does your village have water management committee? | <i>Yes</i>
<i>No</i> | 1
2 | 1=>L-11
2=>L-12
<input type="checkbox"/> |
| L-12 | Name of the water management committee and established year |  |  | ..... ..... |
..... |
| L-13 | What is the reason that your village does not have water management committee? | | | |
| L-14 | Source of energy for cooking (%) | <i>Electricity</i>
<i>Wood</i>
<i>Charcoal</i>
<i>Gas</i>
<i>Other (Specified)</i> | 1
2
3
4
5 |
.....
.....
.....
..... |
| L-15 | Market price of land and assets (MMK) | <i>Agricultural land/ acre</i>
<i>Residential land / (40x60 feet)</i>
<i>Other (Specified)</i> | 1
2
3 |
..... |
| L-16 | Price of tree | <i>Teak</i>
<i>Rubber</i>
<i>Oil Palm</i>
<i>Banana</i>
<i>Coconut</i>
<i>Other (Specified)</i> | 1
2
3
4
5
6 |
.....
.....
.....
..... |
| L-17 | Other Facility | <i>Seed Bank</i>
<i>Cyclone shelter</i>
<i>Grocery Shop</i>
<i>Pharmacy</i>
<i>Post office</i>
<i>Bank</i>
<i>Information center</i>
<i>Other (Specified)</i> | 1
2
3
4
5
6
7
8 | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| L-18 | Market | <i>Everyday market</i>
<i>Weekly market(for basic provision)</i>
<i>Monthly market (for trad)</i>
<i>Occasional market</i>
<i>Other (Specified)</i> | 1
2
3
4
5 | <input type="checkbox"/> |

Section M. Interests of vulnerable groups (tribal/ethnic minority groups, women headed households, economically vulnerable households, etc.)

| Question | | Response categories | Skip | Response |
|----------|---|--|----------------------------|---|
| M-1 | Vulnerable Group HH | <i>Tribal/ Ethnic minority group</i>
<i>Economically vulnerable</i>
<i>Women headed</i>
<i>Disabled</i>
<i>Elderly (>70 yrs)</i>
<i>Other(Specified)</i> | 1
2
3
4
5
6 |
.....
.....
.....
..... |
| M-2 | Is there a definition of vulnerable household by community?
(definition : less income than regular income, Not having enough | <i>Yes</i>
<i>No</i> | 1
2 | |

** INDICATE THE QUESTION HAS SKIP (=>)

| Question | Response categories | Skip | Response |
|--|---------------------|------|--------------------------|
| food, Living in Temporary house, landless, Lack of adequate clothing, not capable of meeting educational expenses and health care) | | | <input type="checkbox"/> |

Section N. Gender and equity issues

| Question | Response categories | Skip | Response |
|--|--|----------------------------|--|
| N-1 Do you think men and women are equal opportunities? | Yes
No
Not known | 1
2
3 | <input type="checkbox"/> |
| N-2 Population (Number) | Total
Women Voter
Widow
Marriage
Single | 1
2
3
4
5 |
.....
.....
.....
..... |
| N-3 Woman headed HH | | | |
| N-4 What role do women play in the community? | Local Leadership
Political member
Parliament member
Community leadership
Other(Specified) | 1
2
3
4
5 | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| N-5 How many women are? | Local Leadership
Political member
Parliament member
Community leadership
Women Associations/ group
Other(Specified) | 1
2
3
4
5
6 |
.....
.....
.....
.....
..... |
| N-6 Average hours of daily schedule? | Domestic chore
Agriculture task
Going to market
Community development
Religion task
Other(Specified) | 1
2
3
4
5
6 |
.....
.....
.....
.....
..... |
| N-7 Decision making of women rather than man | Marriage
Children
Other family issue
Other (Specified) | 1
2
3
4 | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| N-8 How to solve dispute between man and wife? | Relative
Village leader
Religion leader
Other (Specified) | 1
2
3
4 | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| N-9 Main problem faced by women | Living standard/infrastructure
Economic issue
Health issue
Gender issue
Education issue
Other (Specified) | 1
2
3
4
5
6 | <input type="checkbox"/> |
| N-10 Are there any difference of access of formal education between man and woman? | No different
More chance for man
More chance for woman
No chance for woman | 1
2
3
4 | <input type="checkbox"/> |
| N-11 Quality of life | Good
Average
Bad | 1
2
3 | <input type="checkbox"/> |
| N-12 Main health problem | Man rather than woman
Woman rather than man | 1
2 | <input type="checkbox"/> |

** INDICATE THE QUESTION HAS SKIP (=>)

| Question | | Response categories | Skip | Response |
|----------|--|---|---|-----------------|
| N-13 | Main health problem faced by woman | <i>Abortion</i>
<i>Diarrhea</i>
<i>Malaria</i>
<i>Respiratory tract infection (Cold/ Cough)</i>
<i>Cholera</i>
<i>Tuberculosis</i>
<i>Guinea Worm</i>
<i>Sexually transmitted Infection</i>
<i>High blood Pressure</i>
<i>Skin rash/itched</i>
<i>HIV/AIDS</i>
<i>Syphilis</i>
<i>Hepatitis</i>
<i>Other (Specified)</i> | 1
2
3
4
5
6
7
8
9
10
11
12
13
14 | □□□ |
| N-14 | Smoking | <i>Man rather than woman</i>
<i>Woman rather than man</i> | 1
2 | □ |
| N-15 | Drinking Alcohol | <i>Man rather than woman</i>
<i>Woman rather than man</i> | 1
2 | □ |
| N-16 | Main problem of Health care available | <i>Distance</i>
<i>Long queues</i>
<i>Opening hour</i>
<i>Condition of hospital/clinic</i>
<i>Medical supply</i>
<i>Cost</i>
<i>Other (Specified)</i> | 1
2
3
4
5
6
7 | □□□ |
| N-17 | Role of woman in traditional agriculture's activities | <i>Engaged as paid farm worker</i>
<i>Land preparation</i>
<i>Buying of seed and fertilizer</i>
<i>Sowing</i>
<i>Weeding</i>
<i>Harvesting</i>
<i>Winnowing and packaging</i>
<i>Taking to the market for sale</i>
<i>Managing finance</i>
<i>Other (Specified)</i> | 1
2
3
4
5
6
7
8
9
10 | □□□□□ |
| N-18 | Equal chance of ownership over land and properties between man and woman | <i>Yes</i>
<i>No</i> | 1
2 | □ |
| N-19 | Equal wages between male and female workers | <i>Yes</i>
<i>No</i> | 1
2 | If no => 0
□ |
| N-20 | Wages for Man and women for agricultural activities | <i>Man</i>
<i>Woman</i> | 1
2 |
..... |

Section O. Project Information

| Question | | Response categories | Skip | Response |
|----------|---|---|---------------------------------|----------|
| O-1 | What is the most positive impact of the project that you anticipate? | <i>Unaware</i>
<i>Increase employment</i>
<i>Increase annual income</i>
<i>Improve living condition</i>
<i>Improve transportation/ infrastructure</i>
<i>Improve environment</i>
<i>Compensation for land use</i> | 1
2
3
4
5
6
7 | □□□□ |
| O-2 | Do you agree with the project development? | <i>Yes</i>
<i>No</i>
<i>Not sure</i> | 1
2
3 | □□ |
| O-3 | What are the most negative impacts of the project that you are concern about? | <i>Unaware</i>
<i>Transport and infrastructure</i>
<i>Negative social environment</i> | 1
2
3 | |

** INDICATE THE QUESTION HAS SKIP (=>)

| Question | Response categories | Skip | Response |
|----------|---|---|----------|
| | <i>House damaged</i>
<i>Increased cost</i>
<i>Environmental pollution</i>
<i>Safety</i>
<i>Damaged environment</i>
<i>Employment/income disruption</i>
<i>Crime</i>
<i>Other (Specified)</i> | 4
5
6
7
8
9
10
11 | □□□□ |
| O-4 | Are you concern about outside people coming to your community to work in the project? | 1
2
3 | □ |
| O-5 | What is the priority development initiative for your community? | 1
2
3
4
5
6
7
8
9 | □□□□ |
| O-6 | Idea for mitigation measure for impacts | | |

Section P. Perception on Impact of the project

| | | Very negative | Negative | Slightly negative | No effect | Slightly positive | Positive | Very positive |
|-----|----------------------------------|---------------|----------|-------------------|-----------|-------------------|----------|---------------|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| P-1 | The effect on physical Resources | | | | | | | |
| 1 | Soil quality | | | | | | | |
| 2 | Surface water quality | | | | | | | |
| 3 | Ground water quality | | | | | | | |
| 4 | Air quality | | | | | | | |
| 5 | Noise | | | | | | | |
| P-2 | Effect on biological Resources | | | | | | | |
| 6 | Forestry and conservation area | | | | | | | |
| 7 | Agriculture/ Farming area | | | | | | | |
| 8 | Fauna | | | | | | | |
| 9 | Flora | | | | | | | |
| 10 | Pasture | | | | | | | |
| P-3 | Human Effect | | | | | | | |
| 11 | Local fishery | | | | | | | |
| 12 | Local livestock | | | | | | | |
| 13 | Local vegetation | | | | | | | |
| 14 | Local industry | | | | | | | |
| 15 | Local transportation | | | | | | | |
| 16 | Local price | | | | | | | |
| 17 | Recreation | | | | | | | |
| 18 | Increase of food price | | | | | | | |
| 19 | Market in the area | | | | | | | |
| 20 | Local economy | | | | | | | |
| P-4 | Effect on quality of life | | | | | | | |
| 21 | Housing | | | | | | | |
| 22 | Health | | | | | | | |
| 23 | Education | | | | | | | |
| 24 | Spiritual | | | | | | | |

** INDICATE THE QUESTION HAS SKIP (=>)

| | | Very negative | Negative | Slightly negative | No effect | Slightly positive | Positive | Very positive |
|-----|--|---------------|----------|-------------------|-----------|-------------------|----------|---------------|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 25 | Safety | | | | | | | |
| 26 | Increase of Crime | | | | | | | |
| 27 | Family structure | | | | | | | |
| 28 | Job opportunities | | | | | | | |
| 29 | Income | | | | | | | |
| 30 | Scenery | | | | | | | |
| 31 | Local culture | | | | | | | |
| 32 | Increased influx of the people in the area | | | | | | | |
| P-5 | Effect on Cultural Heritage | | | | | | | |
| 33 | Religious building | | | | | | | |
| 34 | Cemetery | | | | | | | |
| 35 | Historical building/site | | | | | | | |

Section Q. Any special observation from the village

** INDICATE THE QUESTION HAS SKIP (=>)

APPENDIX P: PRESENTATION MATERIALS

Golden Lace POSCO INTERNATIONAL Co., Ltd



Environmental Compliance Consultancy Co., Ltd. (EnvCC)

ဆန်စက်လုပ်ငန်း(ရွှေလင်းဗန်း) ဆိုင်ရာ
ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်း(IEE)

အများပြည်သူနှင့်တိုင်ပင်ဆွေးနွေးခြင်း

ဆွေးနွေးတင်ပြမည့် အကြောင်းအရာများ

- ❖ ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်း (IEE) ပြုလုပ်ခြင်း၏ ရည်ရွယ်ချက်။
- ❖ စီမံကိန်းနှင့် အဓိကသက်ဆိုင်သော ဥပဒေမူဘောင်များ တင်ပြခြင်း။
- ❖ စီမံကိန်းဆိုင်ရာအကြောင်းအရာများကို တင်ပြခြင်း။
- ❖ ပတ်ဝန်းကျင်ဆိုင်ရာ အချက်အလက်များကို လေ့လာခြင်းနှင့် တွေ့ရှိချက်များကို တင်ပြခြင်း။
- ❖ စီမံကိန်းကြောင့် ပတ်ဝန်းကျင်အပေါ် အကျိုးသက်ရောက်မှုများအား အကဲဖြတ် ဆန်းစစ်ခြင်းနှင့် သက်ရောက်မှု လျှော့ချခြင်း အစီအစဉ်များကို တင်ပြခြင်း။
- ❖ နိဂုံးချုပ် ခြုံငုံသုံးသပ်ချက်။

ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်း ပြုလုပ်ရခြင်း၏ရည်ရွယ်ချက်

- ❖ အဆိုပြုစီမံကိန်းကြောင့် ဖြစ်ပေါ်နိုင်သော ပတ်ဝန်းကျင် နှင့် လူမှုရေးဆိုင်ရာ သက်ရောက်ထိခိုက်မှုများကို ခန့်မှန်းအကဲဖြတ်၍ ဆိုးကျိုးသက်ရောက်မှုလျှော့ချရေး အစီအစဉ်များ ရေးဆွဲနိုင်ရန်။
- ❖ စီမံကိန်းဧရိယာနှင့် စီမံကိန်းအနီးဝန်းကျင်တွင် ပတ်ဝန်းကျင်ဆိုင်ရာအရည်အသွေးတိုင်းတာမှုများ ပြုလုပ်ပြီး ရရှိလာသည့် ရလဒ်များကို အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု)လမ်းညွှန်ချက်များ (၂၀၁၅) ဖြင့် နှိုင်းယှဉ်၍ လိုအပ်သော ပတ်ဝန်းကျင်ထိခိုက်မှု လျော့ပါးရေး အစီအစဉ်များ စီမံဆောင်ရွက်နိုင်ရန်။
- ❖ အများပြည်သူနှင့် တိုင်ပင်ဆွေးနွေးခြင်းများ ပြုလုပ်ပြီး အကြံပြုချက်သဘောထားများကို ရယူနိုင်ရန်။

၄

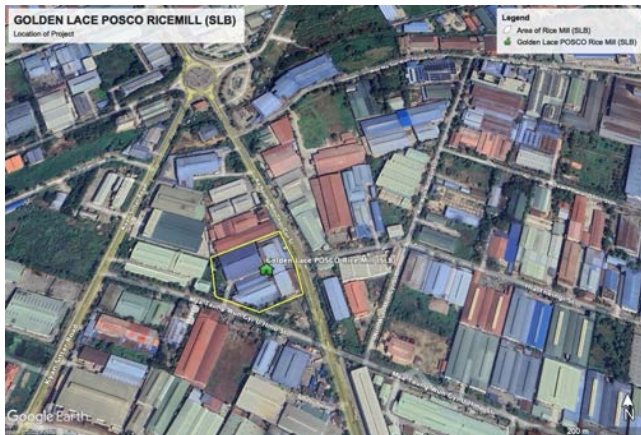
စီမံကိန်းနှင့် အဓိကသက်ဆိုင်သော
ဥပဒေ မူဘောင်များ

စီမံကိန်းနှင့်အဓိကသက်ဆိုင်သောဥပဒေ မူဘောင်များ

- ❖ မြန်မာနိုင်ငံ အမျိုးသားပတ်ဝန်းကျင်ရေးရာ မူဝါဒ (၅ ရက်၊ ဇွန်လ၊ ၂၀၁၉ ခုနှစ်)
- ❖ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဥပဒေ (၃၀ ရက်၊ မတ်လ၊ ၂၀၁၂ ခုနှစ်)
- ❖ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး နည်းဥပဒေများ (၅ ရက်၊ ဇွန်လ၊ ၂၀၁၄ ခုနှစ်)
- ❖ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း (၂၉ ရက်၊ ဒီဇင်ဘာလ၊ ၂၀၁၅ ခုနှစ်)
- ❖ အမျိုးသားသောက်သုံးရေ အရည်အသွေးစံချိန်စံညွှန်း (၂၀၁၉-မူကြမ်း)
- ❖ အမျိုးသား ပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များ (၂၉ ရက်၊ ဒီဇင်ဘာလ၊ ၂၀၁၅ ခုနှစ်)

စီမံကိန်းအကြောင်းအရာများ

စီမံကိန်းတည်နေရာ



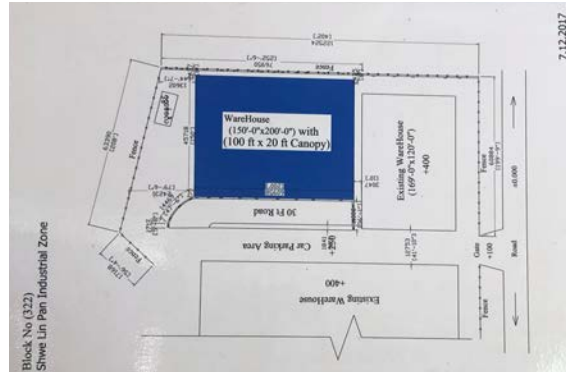
- ရန်ကုန်တိုင်းဒေသကြီး၊ လှိုင်သာယာမြို့နယ်၊ ရွှေလင်ဗန်းစက်မှုဇုန်အတွင်း တည်ရှိပါသည်။
- မြောက်လတ္တီတွဒ် ၁၆° ၅၄' ၂၈"၊ အရှေ့လောင်ဂျီတွဒ် ၉၆° ၀၄' ၁၄" ကြားတွင် တည်ရှိပါသည်။
- စုစုပေါင်းမြေဧရိယာမှာ (၃.၃၈၈) ဧက ဖြစ်ပါသည်။

စီမံကိန်းတည်နေရာ

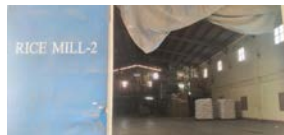
စီမံကိန်း အကြောင်းအရာ အကျဉ်းချုပ်

| | |
|----------------------|--|
| စီမံကိန်းအမည် | Golden Lace POSCO INTERNATIONAL Company Limited ၏ ဆန်စက်လုပ်ငန်း |
| ထုတ်လုပ်မှု | တစ်ရက်လျှင် တန် (၁၆၀) ကျပ်ဖြင့် တစ်နှစ်လျှင် (၅၈,၄၀၀) တန် |
| လုပ်ငန်းအမျိုးအစား | ဆန်စက်လုပ်ငန်း |
| ဆက်သွယ်ရန် | ဒေါ်ထားတင်ဖုန်း |
| ဖုန်းနံပါတ် | ၀၉-၂၅၀၆၈၄၉၅၉ |
| ကုန်ကြမ်း | Brown Rice |
| ထုတ်ကုန် | ဆန်ဖြူ၊ အဆင့်မြင့် ပေါင်းဆန် |
| ဝန်ထမ်းဦးရေ | (၄၀) ဦး |
| ရင်းနှီးမြှုပ်နှံမှု | အမေရိကန်ဒေါ်လာ ၄,၃၈၇.၅၀၀ |
| စီမံကိန်းလုပ်ငန်း | <ul style="list-style-type: none"> ဆောက်လုပ်ရေးလုပ်ငန်း ကြိတ်ခွဲရေးလုပ်ငန်းစဉ်များ |

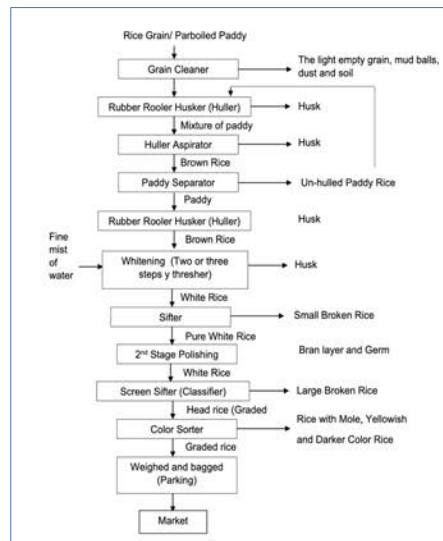
ဆန်စက်၏ တည်ဆောက်မှု အစီအစဉ်



ဆန်စက်အဆောက်အဦများ



ကုန်ထုတ်လုပ်ပုံ အဆင့်ဆင့်



ရေအသုံးပြုမှု

- ❖ တစ်ရက်လျှင် ဂါလံ (၄၀၀) ခန့်သုံးစွဲပါသည်။
- ❖ ရေကို ပြန်လည်အသုံးပြုသည့်စနစ်အား ဆောင်ရွက်ခြင်းဖြင့် ရေကို ခြွေတာသုံးစွဲလျှက်ရှိပါသည်။



လျှပ်စစ်စွမ်းအင် အသုံးပြုမှုများ

- ❖ လုပ်ငန်းလည်ပတ်ရန်အတွက် လျှပ်စစ်ဓါတ်အားကို လျှပ်စစ်ဓါတ်အား လိုင်းမှ ၁၀၀၀ ကေစီအေ ထရန်စဖော်မာ ၁ လုံးဖြင့် ချိတ်ဆက်ကာ လုပ်ငန်းလည်ပတ်သည့် နေရာများတွင် သုံးစွဲပါသည်။
- ❖ ၅၀၀ ကေစီအေ (၁)လုံး၊ ၂၅၀ နှင့် ၉ ကေစီအေ စုစုပေါင်း မီးစက် ၃ လုံးကို အရေးပေါ် အခြေအနေနှင့် လျှပ်စစ်ဓါတ်အား ပြတ်တောက်ချိန်တွင် အသုံးပြုရန် အရန်ထားရှိပါသည်။



လောင်စာအသုံးပြုမှု

- အသုံးပြုသည့် လောင်စာမှာ ပရီမီယံဒီဇယ်ကိုသာ အသုံးပြုပါသည်။
- လုပ်ငန်းလိုအပ်ချက်အရ ဒီဇယ်ကို မီးစက်တွင် အသုံးပြုရန်အတွက် စုစုပေါင်း ၁၁၀၀ ဂါလန်သည့် ၁၀'x၉'x၈'အရွယ်အစားရှိ Stainless Steel အခြေခံ ဆောက်လုပ်ထား သည့် သိုလှောင်ရုံတွင် စနစ်တကျ ထားရှိပါ သည်။
- အသုံးပြုမှု ပမာဏမှာ တစ်လလျှင် ပျမ်းမျှအားဖြင့် ၁၁၀ ဂါလန် သုံးစွဲလျက်ရှိပြီး ထိုပမာဏမှာ လျှပ်စစ်ဓါတ်အား ရရှိမှုအပေါ် မူတည်၍ ပြောင်းလဲမှု ရှိပါသည်။



စွန့်ပစ်ရေထွက်ရှိခြင်းနှင့် စီမံခန့်ခွဲမှု

ဝန်ထမ်းသုံးစွန့်ပစ်ရေများ

- ❖ ဝန်ထမ်းများမှ သန့်ရှင်းရေးအတွက် အသုံးပြုရာမှ စွန့်ပစ်ရေ နှင့် သန့်စင်ခန်းများမှ မိလ္လာရေဆိုးများ ထွက်ရှိသည်ကို တွေ့ရပါသည်။
- ❖ မိုးရေ၊ လက်ဆေးရေနှင့် အထွေထွေစွန့်ပစ်ရေများအား စီမံကိန်း အတွင်း သွယ်တန်းထားသော ရေနုတ်မြောင်း မှတစ်ဆင့် စည်ပင်ရေကူမြောင်းအတွင်းသို့ စွန့်ထုတ်ပါသည်။
- ❖ သန့်စင်ခန်းများမှ ထွက်ရှိလာသော စွန့်ပစ်ရေဆိုးများအား မိလ္လာကန် များဖြင့် သန့်စင်၍ အနည်အနှစ်များအား ခြောက်လ တစ်ကြိမ် စည်ပင်နှင့် ချိတ်ဆက်၍ စွန့်ပစ်ပါသည်။

စွန့်ပစ်အမှိုက်ထွက်ရှိခြင်းနှင့် စီမံခန့်ခွဲမှု

- အိမ်တွင်းစွန့်ပစ်ပစ္စည်း (အစားအစာစွန့်ပစ်ပစ္စည်းနှင့် စသည်တို့) အမှိုက်ပုံးဖြင့်ခွဲခြား၍ စနစ်တကျ ထုပ်ပိုးပြီး အမှိုက်အိတ်များကို စုဆောင်းပြီး စက်ရုံအပြင်ဘက်တွင် YCDC (ရန်ကုန်မြို့တော် စည်ပင် သာယာရေး ကော်မတီ) မှ ထားရှိသည့် အမှိုက်ပုံးတွင် စွန့်ပစ်ပါသည်။
- အန္တရာယ်ဖြစ်စေသည့် ဓာတုအမှိုက်များနှင့် ရေဆိုးများ ထွက်ရှိခြင်းမရှိပါ။
- စွန့်ပစ်ဆီများအား စတိုးပုံးတွင် သိုလှောင်ထားရှိ၍ ဒေသခံများထံရောင်းချပါသည်။

ပတ်ဝန်းကျင်ဆိုင်ရာ အခြေခံ အချက်အလက်များ တင်ပြခြင်း

ပတ်ဝန်းကျင်အရည်အသွေးတိုင်းတာသည့်နေရာများ

- ❖ မြေအရည်အသွေးတိုင်းတာခြင်း
- ❖ လေထုအရည်အသွေး တိုင်းတာခြင်း
- ❖ ရေထုအရည်အသွေး တိုင်းတာခြင်း
- ❖ ဆူညံသံ တိုင်းတာခြင်း



လေထုအရည်အသွေးတိုင်းတာခြင်း



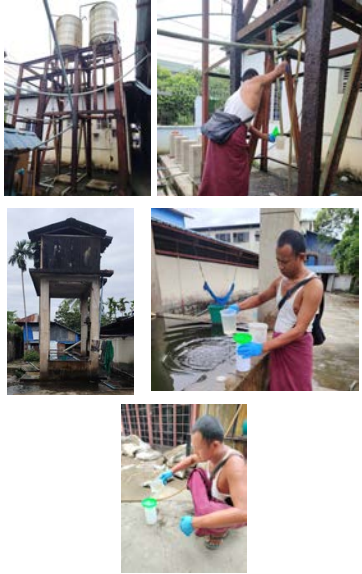
- ❖ လေထုအရည်အသွေးတိုင်းတာခြင်းကို စီမံကိန်းဧရိယာ အတွင်း မြောက်လတ္တီတွဒ် ၁၆° ၅၄' ၂၇.၄၇" ၊ အရှေ့ လောင်ဂျီတွဒ် ၉၆° ၄' ၁၃.၆၀" တွင် မေလ၊ ၂၀၂၅ ခုနှစ်၌ ၂၄ နာရီကြာ တိုင်းတာရရှိသည့် လေအရည်အသွေး ရလဒ်များကို အမျိုးသား ပတ်ဝန်းကျင် ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များ (၂၀၁၅) နှင့် နှိုင်းယှဉ်ရာတွင် ဆာလ်ဖာဒိုင် အောက်ဆိုဒ်မှ လွဲ၍ သတ်မှတ်ချက်အတွင်း ရှိသည်ကို တွေ့ရပါ သည်။
- ❖ ထိုသို့ ဖြစ်ပွားရခြင်းမှာ ဆာလ်ဖာဒိုင်အောက်ဆိုဒ်သည် လောင်စာ လောင်ကျွမ်းမှု အတွင်း ဖြစ်ပေါ်တတ်သည်ဖြစ်ရာ စက်ရုံ၏တည်နေရာသည် စက်မှုဇုန်အတွင်း တည်ရှိသဖြင့် သွားလာရေး ယာဉ်များ၏ လောင်စာလောင်ကျွမ်းခြင်းမှ ထွက်ရှိလာခြင်း ဖြစ်နိုင်သည်ကို လေ့လာဆန်းစစ်ရပါသည်။

ဆူညံသံတိုင်းတာခြင်း



- ❖ အသံဆူညံမှုကို စီမံကိန်းဧရိယာအတွင်း မြောက်လတ္တီတွဒ် ၁၆° ၅၄' ၂၇.၄၇" ၊ အရှေ့ လောင်ဂျီတွဒ် ၉၆° ၄' ၁၃.၆၀" တွင် မေလ၊ ၂၀၂၅ ခုနှစ်၌ နေ့အချိန်နှင့် ညအချိန် ဟူ၍ (၂) ချိန်ခွဲ၍ တိုင်းတာခဲ့ပါသည်။
- ❖ စီမံကိန်းလုပ်ဆောင်ချက်များကြောင့် ပတ်ဝန်းကျင်သို့ ထိခိုက်ညစ်ညမ်းစေသော ဆူညံသံမှ သက်ရောက်မှု ရှိ/ မရှိ သိရှိစေရန် စက်ရုံအတွင်းရှိ ဆူညံသံများကို Digital Sound Level Meter ဖြင့် တိုင်းတာ ချက်များအရ အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး ထုတ်လွှတ်မှု လမ်းညွှန်ချက်များ (NEQG) ရှိ သတ်မှတ်ချက်များမှ နေ့အချိန်တွင် ကျော်လွန်မှု မရှိသည်ကို တွေ့ရှိရသော်လည်း ညအချိန်တွင်မူ သတ်မှတ်ချက် ထက် ၅ dBA ကျော်လွန်သည်ကိုတွေ့ရှိရပါသည်။
- ❖ ထိုသို့ဖြစ်ပွားရခြင်းမှာ စက်ရုံသည် ညအချိန်တွင် လည်ပတ်ခြင်းမရှိသော်လည်း ပတ်ဝန်းကျင်တွင် သွားလာလျှက်ရှိသည် မော်တော်ယာဉ်များ၊ ဆိုင်ကယ်များ ကြောင့်လည်းကောင်း ဖြစ်နိုင်သည်ကို လေ့လာတွေ့ရှိရပါသည်။

ရေအရည်အသွေး တိုင်းတာခြင်း



| စဉ် | အမျိုးအစား | တည်နေရာ | |
|-----|----------------|-----------------|-------------------|
| | | မြောက်လတ္တီတွဒ် | အရှေ့လောင်ဂျီတွဒ် |
| ၁။ | ရေဆိုး | ၁၆° ၅၄' ၂၈.၀၆" | ၉၆° ၄' ၁၀.၅၅" |
| ၂။ | မြေအောက်ရေ (၁) | ၁၆° ၅၄' ၂၉.၀၁" | ၉၆° ၄' ၁၄.၃၆" |
| ၃။ | မြေအောက်ရေ (၂) | ၁၆° ၅၄' ၂၉.၈၃" | ၉၆° ၄' ၁၄.၀၈" |

- ❖ တိုင်းတာရရှိခဲ့သော ရေဆိုးနှင့် မြေအောက်ရေ အရည်အသွေး ရလဒ်များအရ (WHO Drinking Water Guideline Geneva 1993) စံချိန်စံညွှန်း အတွင်း ရှိသည်ကို တွေ့ရှိရပါသည်။

စီမံကိန်းကြောင့် ပတ်ဝန်းကျင် ထိခိုက်မှု
အကဲဖြတ်ဆန်းစစ်ခြင်း

စီမံကိန်းလည်ပတ်စဉ်ကာလ ကောင်းကျိုး/ဆိုးကျိုးသက်ရောက်နိုင်ချေများ



စီမံကိန်းကြောင့် ပတ်ဝန်းကျင် ထိခိုက်မှုကို
လျော့ချရမည့်အစီအစဉ်များ

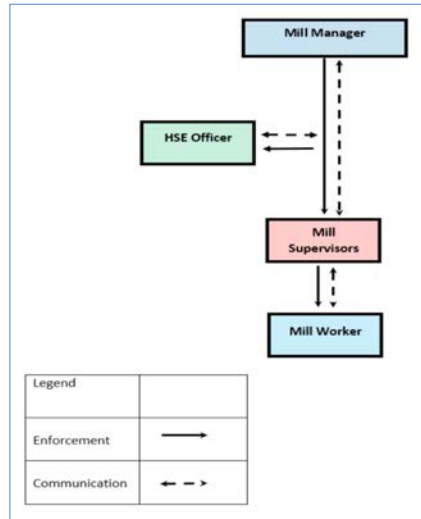
ပတ်ဝန်းကျင်နှင့် လုပ်ငန်းခွင်ဆိုင်ရာ သက်ရောက်မှုကို လျှော့ချရမည့်အစီအစဉ်များ (လည်ပတ်ခြင်းကာလ)

- စက်ရုံလုပ်ငန်းခွင်အတွင်း အမှုန်အမွှားများ ထွက်ရှိမှုအား ထိန်းချုပ်နိုင်ရန် အမှုန်စုပ်စက် (Dust Collector)၊ လေမှုတ်ထုတ်သည့်စက် (Exhaust Fan) နှင့် လေသန့်စင်သည့်စက် (Roof Ventilator) များ တပ်ဆင်ခြင်း၊
- စက်ပစ္စည်းများအား ရေရှည်အသုံးပြုနိုင်ရန် ပြုပြင်ထိန်းသိမ်းခြင်း၊
- ဖုန်မှုန်များထွက်ရှိသောနေရာအား ရေဖြန်းခြင်း၊
- ဝန်ထမ်းများအား တစ်ကိုယ်ရည် ကာကွယ်ရေးသုံးကိရိယာများ တပ်ဆင်လုပ်ကိုင်စေခြင်း၊
- မိလ္လာစနစ်နှင့်ရေမြောင်းများကို ပုံမှန်သန့်ရှင်းရေးပြုလုပ်ခြင်းနှင့် ပုံမှန်စစ်ဆေးခြင်း၊
- ကွန်ကရစ်တံခွန်နှင့် လုပ်ငန်းသုံးယာဉ်များမှ ဆီများ ဖိတ်စင်မှု မရှိစေရန် ပုံမှန် စစ်ဆေးမှုများ ပြုလုပ်ခြင်း၊
- ဘေးပတ်ဝန်းကျင်သို့ ဆူညံသံနှင့် တုန်ခါမှုများ မဖြစ်ပေါ်စေရန် အဆိုပါ ဆူညံသံ ထွက်ရှိရာ နေရာများအား လုံခြုံစွာ ကာကွယ်ခြင်း၊
- ဆူညံသံများသော နေရာများတွင် လုပ်ကိုင်သော လုပ်သားများကို အလှည့်ကျ လုပ်ကိုင်စေခြင်း၊
- စက်ရုံအတွင်း သစ်ပင်၊ ပန်းပင်များ စိုက်ပျိုးထိန်းသိမ်းခြင်း၊
- မီးသတိပေးစနစ်၊ မီးသတ်စနစ်၊ မီးသတ်ဆေးဘူးများ၊ အရေးပေါ်တံခါးပေါက်၊ လေ့ကျင့် နှင့် အရေးပေါ် စုရပ်များအား ထားရှိပေးခြင်း၊
- မီးသတ်ဌာနနှင့်ဆက်သွယ်၍ စီမံကိန်းရှိဝန်ထမ်းများအား မီးဘေးအန္တရာယ်နှင့် မီးသတ်ခြင်းဆိုင်ရာ လုပ်ငန်းများအား လေ့ကျင့်ပေးခြင်း၊
- လုပ်သားများအား ပုံမှန်ကျန်းမာရေးစစ်ဆေးပေးခြင်း၊ ကျန်းမာရေး စောင့်ရှောက်မှုပေးခြင်း၊
- ဝန်ထမ်းများအား လုပ်ငန်းခွင်ဘေးအန္တရာယ်ကင်းရှင်းရေးဆိုင်ရာ သင်တန်းများအား စေလွှတ်၍ စက်ရုံတွင် ဆင့်ပွားသင်တန်းများပြုလုပ်ပေးခြင်း၊
- စက်ရုံတွင် စွန့်ပစ်ပစ္စည်းများအား ပြန်လည်အသုံးပြုနိုင်သောပစ္စည်း၊ စွန့်ပစ်ရန်ပစ္စည်းများနှင့် ဘေးအန္တရာယ်ရှိသော စွန့်ပစ်ပစ္စည်းများဟူ၍ ခွဲခြား စွန့်ပစ်ခြင်း၊
- YCDC သန့်ရှင်းရေးဌာနအား နေ့စဉ်အကြောင်းကြားပြီး သိမ်းဆည်းစေခြင်း၊

ပတ်ဝန်းကျင်နှင့် လုပ်ငန်းခွင်ဆိုင်ရာ သက်ရောက်မှုကို လျှော့ချရမည့်အစီအစဉ်များ (ဖျက်သိမ်းခြင်းကာလ)

- ဖျက်သိမ်းရေး လုပ်ငန်းသုံးစက်များကို အသုံးမပြုစဉ်ကာလတွင် စက်ပိတ်ထား၍ ပတ်ဝန်းကျင်သို့ အခိုးအငွေ့ ထွက်ရှိမှုအား နည်းနိုင်သမျှနည်းအောင် ထိန်းချုပ် ဆောင်ရွက်ခြင်း၊
- လုပ်ငန်းသုံးယာဉ်များနှင့် စက်ပစ္စည်းများအား ပုံမှန်စောင့်ကြပ်ကြည့်ရှုခြင်းနှင့် ပြုပြင်ထိန်းသိမ်းခြင်း၊
- အမှုန်အမွှားများထွက်ရှိမှုနည်းပါးစေရန် စီမံကိန်းအတွင်း ရေဖြန်းခြင်း၊
- စွန့်ပစ်ပစ္စည်းများအား မီးရှို့ခြင်း မပြုလုပ်ခြင်း၊
- ဖျက်သိမ်းခြင်းကာလ၌ သွယ်ယူထားသော ဂိုက်လုံးများကို စနစ်တကျ ပြန်လည်ဖြုတ်ယူခြင်းနှင့် ပြန်လည်အသုံးပြုစေခြင်း၊
- ဆူညံသံထွက်သောစက်၊ ပစ္စည်းကိရိယာများကို အသုံးမပြုချိန် ကြားကာလတွင် ပိတ်ထားရန်နှင့် ဆူညံမှုပြင်းထန်သည့်စက်၊ ကိရိယာများကို ယှဉ်ပြိုင်အသုံးပြုခြင်းတို့မှ အတတ်နိုင်ဆုံး ရှောင်ကြဉ် ဆောင်ရွက်ခြင်း၊
- မီးသတ်ဘူးများ၊ မီးသတ်ရေသိုလှောင်ကန်များ ထားရှိခြင်းနှင့် မီးဘေးအန္တရာယ် နှင့်ပတ်သက်သည့် ဆိုင်းဘုတ်များတပ်ဆင်ခြင်း၊
- လျှပ်စစ်ဝါယာကြိုးများအား ဂရုတစိုက်ဖြုတ်၍ သိမ်းဆည်းခြင်း၊
- သတိပေးဆိုင်းဘုတ်များ တပ်ဆင်ပေးခြင်းနှင့် တစ်ကိုယ်ရည်ကာကွယ်ရေး အသုံးအဆောင်ပစ္စည်းများ အသုံးပြုစေခြင်း၊
- အမှိုက်ပုံများထားရှိပေးခြင်းနှင့် သတ်မှတ်ထားသော ဧရိယာတွင်စွန့်ပစ်ခြင်း၊
- လုပ်ငန်းခွင်အတွင်း ယာယီယင်လုံအိမ်သာများ စနစ်တကျ တည်ဆောက်၍ လုံလောက်စွာ ထားရှိပေးခြင်း၊
- အရေးပေါ်သုံးဆေးဝါးများနှင့် ဆေးသေတ္တာများအား လက်လှမ်းမှီရာတွင် ထားရှိခြင်း၊
- ဝန်ထမ်းများအတွက် သောက်သုံးရေကို လုံလောက်စွာ ထားရှိပေးခြင်း၊
- ဖျက်သိမ်းရေး လုပ်ငန်းခွင်ရှိရိုးများ၊ လုပ်သားမိသားစုများမှ စွန့်ပစ်သော အမှိုက်များနှင့် မီးဖိုချောင် သုံးစွန့်ပစ်ပစ္စည်းများကို သင့်တော်သောနေရာတွင် စနစ်တကျစုစုပုံစံစုစည်းခြင်း၊ ဖုံးအုပ်ထားခြင်းနှင့် အန္တရာယ်ရှိသော စက်မှု လုပ်ငန်းဆိုင်ရာ စွန့်ပစ်ပစ္စည်းများကို လုံခြုံစွာ ထုတ်ပို့၍ သတ်မှတ်ထားသော နေရာများသို့ စနစ်တကျစွန့်ပစ်ခြင်း၊

ပတ်ဝန်းကျင်၊ ဘေးအန္တရာယ်ကင်းရှင်းရေးအဖွဲ့နှင့် ကျန်းမာရေးဆိုင်ရာ တာဝန်ယူမည့် အဖွဲ့အစည်း



လူမှုအကျိုးတူပူးပေါင်းပါဝင်မှု (CSR) အစီအစဉ်များ



| Year | AhNhaing Mae | flood victims in Bago |
|-------|--------------|-----------------------|
| 2022 | 1,845,700 | 2,000,000 |
| 2023 | 2,168,869 | |
| 2024 | 2,311,748 | |
| Total | 6,326,317 | 2,000,000 |



မြန်မာ့ရင်းနှီးမြှုပ်နှံမှု ကော်မတီ၏ ချမှတ်ထားသော နည်းလမ်းများအတိုင်း အမြတ်ငွေမှ ၂ % ကို (CSR) အတွက် အသုံးပြုခြင်း။



ပတ်ဝန်းကျင် စောင့်ကြပ်ကြည့်ရှုရေးလုပ်ငန်းများ

| တိုင်းတာမည့် နယ်ပယ် | တိုင်းတာမည့် အရည်အသွေးများ | တိုင်းတာမည့် နေရာ | တိုင်းတာမည့် အကြိမ်အရေအတွက် | နှစ်စဉ်ခန့်မှန်း အသုံးစရိတ် (ကျပ်) |
|--|--|--|-------------------------------------|------------------------------------|
| လေအရည်အသွေး | NOx, SO2, PM2.5, PM10 and O2 | (A 1) 16°54'28"N, 96° 0.4'14"E | ခြောက်လတစ်ကြိမ် (ECD သို့ တင်ပြရန်) | ၂,၀၀၀,၀၀၀ |
| ဆူညံသံ | ဆူညံသံအဆင့် (dB (A) scale) | (N 1) 16°54'28"N, 96° 0.4'14"E | ခြောက်လတစ်ကြိမ် (ECD သို့ တင်ပြရန်) | ၁၀၀,၀၀၀ |
| ရေထုအရည်အသွေး | Alkalinity (Alk), Magnesium (Mg ++), Sodium (Na+), Potassium (K+), Total Hardness (TH), Sulfate (SO4-), Chloride (Cl-), Iron (Fe), Dissolve Oxygen (DO), Chemical Oxygen Demand (COD), Biochemical Oxygen Demand (BOD), pH, Ammonia-Nitrogen (NH3-N), Turbidity, Salinity, Arsenic (As), Lead (Pb) | Groundwater (GW-1)
16°54'29.01"N, 96° 4'14.36"E
Groundwater (GW-2)
16°54'29.83"N, 96° 4'14.08"E
Effluent
16°54'28.06"N, 96° 4'10.55"E | ခြောက်လတစ်ကြိမ် (ECD သို့ တင်ပြရန်) | ၂,၄၀၀,၀၀၀ |
| မြေအရည်အသွေး | pH, Salinity Electrical Conductivity, Cation Exchangeable Capacity, Potassium (Potash) | 16°54'26.78"N, 96° 4'10.69"E | ခြောက်လတစ်ကြိမ် (ECD သို့ တင်ပြရန်) | ၅၀၀,၀၀၀ |
| ဘေးအန္တရာယ်ကင်းရှင်းရေးနှင့် ကျန်းမာရေး ဆိုင်ရာ ထိခိုက်မှု | လျှပ်စစ်နှင့် မီးအန္တရာယ်
မတော်တဆထိခိုက်မှု မှတ်တမ်းများ | စီမံကိန်းဧရိယာအတွင်းရှိ မီးကြိုးများ ငှင်းတို့ ၏ ဆက်စပ်ပစ္စည်းများနှင့် မီးလောင်လွယ်သည့် ပစ္စည်းများ
စီမံကိန်းဧရိယာအတွင်းရှိ လုပ်ငန်းခွင်နေရာ | လစဉ်
လစဉ် | ၁,၀၀၀,၀၀၀ |

နိဂုံးချုပ် ခြုံငုံသုံးသပ်ချက်

- ❖ ပတ်ဝန်းကျင် ထိခိုက်မှုကို လျော့ချရမည့်အစီအစဉ်များကို စနစ်တကျလိုက်နာခြင်းဖြင့် ဖြစ်ပေါ်နိုင်သော ဆိုးကျိုး သက်ရောက်မှုများကို လျော့ချ၍ လူမှုစီးပွားအပေါ်ကောင်းကျိုးသက်ရောက်နိုင်မှု ဖြစ်ထွန်းစေရန် ဆောင်ရွက်နိုင်ခြင်း။
- ❖ ဒေသခံများနှင့် အနီးဝန်းကျင် အတွက် အလုပ်အကိုင် အခွင့်အလမ်းများ ရရှိစေခြင်း။
- ❖ ထို့ကြောင့် ပတ်ဝန်းကျင် ပြည်သူလူထုအတွက် ဒေသအတွင်း လူမှုစီးပွား အခြေအနေများ တိုးတက်လာနိုင်ခြင်း။
- ❖ စီမံကိန်းလုပ်ငန်းမှ နိုင်ငံတော်သို့ ပုံမှန်အခွန်ပေးဆောင်ခြင်းဖြင့် နိုင်ငံဝင်ငွေ တိုးတက် စေနိုင်ခြင်း။
- ❖ ခေတ်မီစက်ပစ္စည်းများကို ကျွမ်းကျင်စွာအသုံးပြုနိုင်သော အရည်အချင်းရှိသော ဝန်ထမ်းများ ထွက်ပေါ်လာခြင်း။
- ❖ လူမှုအကျိုးတူ ပူးပေါင်းပါဝင်မှု (CSR) အစီအစဉ်များ ပြုလုပ်ခြင်းဖြင့် လူမှုဝန်းကျင်အပေါ် ကောင်းကျိုးများ ရရှိစေခြင်း။







APPENDIX Q: RECORD OF PARTICIPANTS AT PCM

Rice Mill Project (SLB) နှင့် ပက်သက်၍ စီမံကိန်းနှင့် သက်ဆိုင်သူများနှင့် တွေ့ဆုံဆွေးနွေးခြင်း

STAKEHOLDER CONSULTATION FOR Rice Mill Project (SLB)

Date/ ရက်စွဲ ၁၅.၁၀.၁၉




Place /နေရာ ကနဦးကလေးပ

| အမျိုးအစား/Type | အမည်
Name | ရာထူး
Position | ဌာန/အဖွဲ့အစည်းအမည်
Department/ Organization | နေရပ်လိပ်စာ
Address | ဆက်သွယ်ရန်ဖုန်း
Phone | လက်မှတ်
Sign |
|---|---------------|-------------------|--|------------------------|--------------------------|---|
| <ul style="list-style-type: none"> Government အစိုးရအဖွဲ့ Public ပြည်သူ Media မီဒီယာ NGO အစိုးရမဟုတ်သောအဖွဲ့အစည်း | ၁. မောင်ကျော် | ဆရာ | | ၁၉.၇၀၇၇
ကျေးလေး | ၀၇၆၆၇၇၇
၁၈၈ |  |
| | ၂. ကောင်ကျော် | စတုတ္ထဆရာ | | ၁၉.၇၀၇၇
ကျေးလေး | ၀၇၆၆၇၇၇
၃၁၈ |  |
| | ၃. မောင်ကျော် | စတုတ္ထဆရာ | | ၃၂၂ | ၀၇၆၆၇၇၇
၃၁၈ |  |
| | ၄. မောင်ကျော် | စတုတ္ထဆရာ | | ၁၉.၇၀၇၇
ကျေးလေး | ၀၇ - |  |
| | ၅. မောင်ကျော် | စတုတ္ထဆရာ | | ၁၉.၇၀၇၇
ကျေးလေး | ၀၇ ၆၇၇၇၇
၃၁၈ |  |
| | ၆. မောင်ကျော် | စတုတ္ထဆရာ | | ၃၂၂ | ၀၇ ၆၇၇၇
၇၈၇၇ |  |

Rice Mill (SLB) နှင့် ပက်သက်၍ စီမံကိန်းနှင့် သက်ဆိုင်သူများနှင့် တွေ့ဆုံဆွေးနွေးခြင်း (2)

STAKEHOLDER CONSULTATION FOR Rice Mill (SLB)

Date/ ရက်စွဲ ၁၅.၅.၂၀၂၄
Place /နေရာ မသုဉ်းကလေးမိုးမ

| အမျိုးအစား/Type
• Government အစိုးရအဖွဲ့
• Public ပြည်သူ
• Media မီဒီယာ
• NGO အစိုးရမဟုတ်သောအဖွဲ့အစည်း | အမည်
Name | ရာထူး
Position | ဌာန/အဖွဲ့အစည်းအမည်
Department/ Organization | နေရပ်လိပ်စာ
Address | ဆက်သွယ်ရန်ဖုန်း
Phone | လက်မှတ်
Sign |
|--|----------------|-------------------|--|------------------------|--------------------------|---|
| ၇. | ကျော်စိုးဝင်း | စက်မှုရေးရာ | | ၇၃၆
မိုးလမ်း | ၀၉၂၅၄၈၆၃
၈၄၄ |  ✓ |
| ၈. | အောင်ကျော်စိုး | စက်မှုရေးရာ | | ၁၂၇၈၈၈
ကျောက်တန်း | ၀၇၆၈
၀၉၄၄၈၆၀၀
၈၈၂ |  |
| ၉. | ကျော်စိုးဝင်း | စက်မှုရေးရာ | | ၁၂၇၈၈၈
ကျောက်တန်း | ၀၉၆၆၇၇၇၇
၃၂၆ |  |
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Rice Mill Project (SLB)နှင့် ပက်သက်၍ စီမံကိန်းနှင့် သက်ဆိုင်သူများနှင့် တွေ့ဆုံဆွေးနွေးခြင်း

STAKEHOLDER CONSULTATION FOR Rice Mill Project (SLB)

Date/ ရက်စွဲ ၁၅.၅.၂၀၁၅

Place /နေရာ ကလေးကလေးလမ်းမ

Golden Lase POSCO International Co., Ltd

| အမျိုးအစား/Type | အမည်
Name | ရာထူး
Position | ဌာန/အဖွဲ့အစည်းအမည်
Department/ Organization | နေရပ်လိပ်စာ
Address | ဆက်သွယ်ရန်ဖုန်း
Phone | လက်မှတ်
Sign |
|---|---------------------------|------------------------------|--|------------------------|--------------------------|---|
| • Government အစိုးရအဖွဲ့
• Public ပြည်သူ
• Media မီဒီယာ
• NGO အစိုးရမဟုတ်သောအဖွဲ့အစည်း | ၁ Mr. Park Kyong
HO | Managing
Director | Management | | |  |
| | ၂ U Khin Maung
Lwin | Factory Manager | Management | | |  |
| | ၃ U Thit Lwin | Operation - in-
charge | " | | * |  |
| | ၄ Daw Htar Tin
Phone | HR Manager | Admin & HR Dept. | | |  |
| | ၅ Daw Nu Nay
Yee Yoone | Manager ,
Marketing Dept. | Marketing Dept. | | |  |
| | | | | | | |

Rice Mill Project (SLB)နှင့် ပက်သက်၍ စီမံကိန်းနှင့် သက်ဆိုင်သူများနှင့် တွေ့ဆုံဆွေးနွေးခြင်း

STAKEHOLDER CONSULTATION FOR Rice Mill Project (SLB) ④

Date/ ရက်စွဲ ၁၅.၅.၂၀၁၅

Place /နေရာ ကျေးကလေးအုပ်စု

Third-Party Organization.

| အမျိုးအစား/Type | အမည်
Name | ရာထူး
Position | ဌာန/အဖွဲ့အစည်းအမည်
Department/ Organization | နေရပ်လိပ်စာ
Address | ဆက်သွယ်ရန်ဖုန်း
Phone | လက်မှတ်
Sign |
|---|----------------|----------------------|--|------------------------|--------------------------|-----------------|
| • Government အစိုးရအဖွဲ့
• Public ပြည်သူ
• Media မီဒီယာ
• NGO အစိုးရမဟုတ်သောအဖွဲ့အစည်း | ၁. ဒေါ်ဖြူဖြူ | Principle Consultant | Environmental Compliance Consultancy | Yangon | ၀၉၄၂၀၁၁၁၄၀ | |
| | ၂. ဦးကျော်လင်း | Manager | " | " | ၀၉၄၂၈၀၃၃၀၈ | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |



Environmental Compliance Consultancy Co., Ltd

Email: info@envccmyanmar.com

www.envccmyanmar.com

Keep our planet green.

ကျွန်ုပ်တို့ကမ္ဘာမြေကို စိမ်းလန်းပါစေ။