

HAZARD IDENTIFICATION & RISK ASSESSMENT

Almarai Quality Assurance Forms / Attachments																
Applied At		PPPI			EIQ No		Doc Ref No		Rev No		0					
Title		HAZARD IDENTIFICATION AND RISK ASSESSMENT			Effective Date		13-Jun-22		Status		Active					
Risk Assessment (Baseline and full RA)																
Contractors:		ALTEC Co. LTD			Project Typ		PPP1 Old Plant Accommodation Electrical System Upgrading Project.		Contract No.:		9500048721					
TASK/ACTIVITY/PROCESS NAME: EXCAVATION.						DEPARTMENT/AREA:										
RA Number:						DATE:										
SEVERITY / CONSEQUENCE (Impact/Hazard Effect) (Where an event has more than one ' Loss Type ', choose the ' Consequence ' with the highest rating)																
Loss Type Additional "Loss		(1) Minor			(2) Minor			(3) Moderate		(4) Major		(5) Catastrophic				
Severity Scale		Nil, No injury or loss			Minor, Slight e.g. cuts, bruises, minor loss to business			Serious Accident/illness eg. Injuries resulting in more than		Major Accident/ Illness, major		Fatality or catastrophic business loss				
LIKELIHOOD		Examples (Consider Near-Hits as well as actual events)														
(5) ALMOST		The unwanted event has occurred frequently :														
(4) LIKELY		The unwanted event occurs less frequently but is expected														
(3) POSSIBLE		The unwanted event could happen sometime														
(2) UNLIKELY		The unwanted event has occurred at some time: it is foreseeable but very infrequent														
(1) RARE		Remote, harm will seldom occur														
RISK RATING / PROFILE																
		11 (M)			16 (H)			20 (H)		23 (Ex)		25 (Ex)				
		7 (M)			12 (M)			17 (H)		21 (Ex)		24 (Ex)				
		4 (L)			8 (M)			13 (H)		18 (H)		22 (Ex)				
		2 (L)			5 (L)			9 (M)		14 (H)		19 (H)				
		1 (L)			3 (L)			6 (M)		10 (M)		15 (H)				
RA TEAM (Names)				Designation		SIGNATURE		RISK RATING		RISK LEVEL		GUIDELINES FOR RISK MATRIX				
1				Construction Manager				21 to 25		(Ex) - Extreme		Stop operation and review controls- Eliminate, avoid risk &				
2				Supervisor / Foremen				13 to 20		(H) - High		Proactively manage & implement specific controls/action plans-				
3				Safety Manger				6 to 12		(M) - Medium		Actively manage & monitor – Additional controls is advised &				
4 -								1 to 5		(L) - Low		Risk acceptable – Monitor & manage as appropriate with frequent				
DEPARTMENT / AREA:				Primary Production				APPROVED BY / MANAGER or SUPERVISOR				DATE:				
												NEXT REVIEW DATE:				
site condition, all identified risk should provide with a plan to eliminate or control the risk.																
HAZARD IDENTIFICATION				Controls				RISK ASSESSMENT			RISK REDUCTION ACTION PLAN					
Item #	Work Activity (Process, Equipment, Materials)	Hazard	Risks Issue (Possible incident) [What can go wrong] To Whom		Existing Controls		Consequence	Likelihood	Risk Ranking / Profile	Improve existing controls / implement new controls		Consequence	Likelihood	Risk Ranking / Profile	Follow up by Whom (name) & By When (date)	Controls Implemented Yes/No
1	Obtain Permit to Work.	<ul style="list-style-type: none"> Unauthorized work to be performed within a defined location and boundary. Uncontrolled personnel entering a restricted location. Unidentified hazards with unplanned safety mitigating measures. Inadequate coordination and area control protocol. 	<ul style="list-style-type: none"> Accident resulting serious injury or death to worker. Significant property and appurtenances damage Loss of production. Significant cost due to damages. Governmental violation. Environmental complaint. 		<ul style="list-style-type: none"> Permit to Work shall be obtained as a pre-requisite to perform work. Work shall not be started until duly approved Permit to Work is available at site and that Safety Toolbox meeting was conducted. A safe work practice shall be implemented to reduce the possibilities of accident / incident. Permit Receiver and Permit Issuer shall visit together at the site to ensure that workplace hazards are adequately identified and mitigating measure shall be established. Permit to Work shall be displayed at the worksite. Permit Receiver shall not leave the area for the whole duration of work Work shall not proceed without the presence of approved Permit to Work with the Permit Receiver overseeing the activity. Permit Receiver shall account all workers under his Permit to Work before the start of work. 		3	2	6	Safe Work Procedure. AS built DWG will be obtained by supervisor and will check by underground utilities and will check by underground utilities CAT scan will be done for inspection of underground utilities. Marking of the underground utilities in dwg will be submitted to the client. Supervisor should ensure for the water lines, communication lines, electrical cables to follow the construction methodology. Supervisor to monitor their respective area. Permit Receiver shall be responsible to oversee for the safety of all workers under his Permit to Work.		3	1	3	Permit Receiver & Issuer, Site Manager, Engineer, Supervisor, Foreman & Safety Officer	Yes
		<ul style="list-style-type: none"> Exposure to extremely hot temperature. Fatigue due to extreme work 	<ul style="list-style-type: none"> Heat exhaustion Collapse of personnel Injury or ill health 		<ul style="list-style-type: none"> Heat stress procedure shall be developed and implemented. Ensure sufficient supply of drinking water and encourage workers to drink more water/liquids to replace body water lost during perspiration. Take frequent rest breaks in shade or air conditioning. 		2	3	6	Safe Work Procedure Supervisor to monitor their respective area Permit Receiver shall be trained and authorized by the Manager to receive a Permit to Work Permit Receiver shall be responsible to oversee for the safety of all workers under his Permit to Work.		2	1	2	Permit Receiver & Issuer, Site Manager, Engineer, Supervisor, Foreman & Safety Officer	Yes

HAZARD IDENTIFICATION				Controls	RISK ASSESSMENT			RISK REDUCTION ACTION PLAN					
Item #	Work Activity (Process, Equipment, Materials)	Hazard	Risks Issue (Possible incident) [What can go wrong] To Whom	Existing Controls	Consequence	Likelihood	Risk Ranking / Profile	Improve existing controls / implement new controls	Consequence	Likelihood	Risk Ranking / Profile	Follow up by Whom (name) & By When (date)	Controls Implemented Yes/No
2	Marking of the work area to be excavated	<ul style="list-style-type: none"> Awkward posture Improper body position 	<ul style="list-style-type: none"> Body pain or injury Musculoskeletal disorder 	<ul style="list-style-type: none"> Establish systems so workers are rotated away from tasks to minimize the duration of continuous exertion, repetitive motions, and awkward postures. Design a job rotation system in which employees rotate between jobs that use different muscle groups. Conduct an ergonomic study to apply controls coming from the results of the survey. 	3	5	15	<ul style="list-style-type: none"> Safe Work Procedure Supervisor to monitor their respective area Permit Receiver shall be trained and authorized by the Manager to receive a Permit to Work 	3	1	3	Permit Receiver & Issuer, Site Manager, Engineer, Supervisor, Foreman & Safety Officer	Yes
		<ul style="list-style-type: none"> Struck by moving equipment Movement of vehicle or equipment Poor visibility of personnel 	<ul style="list-style-type: none"> Accident resulting injury or ill health to worker Temporary or permanent disability 	<ul style="list-style-type: none"> Provide trained flagman equipped with green and red flags to control the movement of equipment. Flaggers and workers shall wear a high visibility vest at all times. Provide suitable protective / warning barriers and signs around the work areas. Suitable traffic management plan shall be established such as segregation of pedestrian lanes from vehicle access ways. 	5	4	20	<ul style="list-style-type: none"> Safe Work Procedure Supervisor to monitor their respective area you need to ensure no body will be available in swing area. Always avoid working in blind spot area of the veichele. reversers horn for Heavy duty vecihle should be available. Drivers are not allowed to rest below the veichles. 	5	1	5	Permit Receiver & Issuer, Site Manager, Engineer, Supervisor, Foreman & Safety Officer	Yes
3	Checking and verification of any underground utilities	<ul style="list-style-type: none"> Lack of safety awareness and knowledge for the job Working without wearing appropriate Personal Protective Equipment (PPE) Improper manual handling 	<ul style="list-style-type: none"> Physical injury and damage to property due to lack of safety awareness and incompetency. Physical / fatal injury and damage to property due to lack of safety awareness and incompetency. Hand injury Physical injury from slip / trip / fall Back injury Arm injury 	<ul style="list-style-type: none"> Ensure that all workers undergo safety induction that discuss safety policies and standards of company and Almarai standards. Conduct Tool box talk and discuss safe work procedure, RA prior to the start of work. Ensure that all workers are provided with required mandatory PPEs such as: Helmet (3M), Safety Glass, Safety Shoes, Cover all, Safety Gloves, Dust Mask Use hand gloves for hand protection Only up to 20 kg is allowable for each worker to lift. Ensure that access has no obstruction If the load is heavier, buddy system is advised 	3	3	9	<ul style="list-style-type: none"> Safe Work Procedure Supervisor to monitor their respective area Permit Receiver shall be trained and authorized by the Manager to receive a Permit to Work Permit Receiver shall be responsible to oversee for the safety of all workers under his Permit to Work. 	3	1	3	Permit Receiver & Issuer, Site Manager, Engineer, Supervisor, Foreman & Safety Officer	Yes
4	Performing tool inspection prior to digging operation	<ul style="list-style-type: none"> Incorrect or substandard tools for the task Defective / damage / improvised tool 	<ul style="list-style-type: none"> Accident resulting injury or ill health to worker Damage to property Loss or delay to production 	<ul style="list-style-type: none"> Use only right tools for the job Use appropriate hand protection to avoid injuries Ensure all tools are inspected properly and color code shall be applied. Any defective tools found shall be removed from service, and marked with a defective tag. 	3	3	9	<ul style="list-style-type: none"> Safe Work Procedure Supervisor to monitor their respective area Supervisour should ensure during the manual excavation no body mshould be a head standing. make shift tools are forbidden for the work 	3	1	3	Permit Receiver & Issuer, Site Manager, Engineer, Supervisor, Foreman & Safety Officer	Yes
5	Mobilizing mechanical equipment(Excavator) at the area demarked for the excavation.	<ul style="list-style-type: none"> Loose soil in the area Personnel nearby the area getting struck Structures, vehicles and equipment near the area getting stuck by the excavator. Fire hazards from the equipment from poor maintenance Unauthorized personnel entering the excavator mobilizing area Lack of vision to the operator from the equipment 	<ul style="list-style-type: none"> Toppling of the equipment resulting in damage of equipment and personnel injury Personnel injury from getting struck with the equipment Personnel injury and property damages due to the fire occurring from the equipment Loss of production hours due to mechanical failures of the equipment 	<ul style="list-style-type: none"> Permit is to be issued prior to the mobilizing of the equipment Flagman is to be provided at all times during the movement and working of the equipment All equipment to be mobilized for site shall be third party certified. All equipment operators shall be holding valid third party certified license. Area to be mobilized shall be provided with barricade and signages Competency of the operator and condition of the equipment shall be inspected prior to the mobilizing at the site. All personnel in the site must be using all PPE at all times. 	4	3	12	<ul style="list-style-type: none"> Safe Work Procedure Supervisor to monitor their respective area All excavation should be carried out under the aduqaute supervision. During mechanical excavtion process ensure no body should be in pit for long time. Test Pit manually to be obatain to ensure for safe work for mechanical excavation. 	4	1	4	Permit Receiver & Issuer, Site Manager, Engineer, Supervisor, Foreman & Safety Officer	Yes
6	Excavating using the mechanical equipment	<ul style="list-style-type: none"> Excavation wall collapse Struck by adjacent structures Electrocution from nearby power lines Toxic Atmosphere High noise levels 	<ul style="list-style-type: none"> Property damages from cave in Crush injuries/Personnel injury from cave in Inhalation of fumes and dust Health risks from inhalation of fumes and high noise levels 	<ul style="list-style-type: none"> Construct diversion ditches to prevent surface water from entering excavation Provide good drainage of area adjacent to the excavation Store excavated spoil atleast not more than 1 meter height. Provide sufficient stairs over 4 feet in depth Place ladders no more than 25 feet apart Confine space permit shall be taken once the depth is more than 5 feet deep Continuous monitoring of the atmospheric gases Emergency rescue plan shall be place. All personnel must wear Hi Viz vest at all times Isolate equipment swing areas Ensure 360 degree view is available for the operator Use ear muffs if noise levels are above 85dB Dampen soil with water spray to avoid the dust being airborne. 	4	3	12	<ul style="list-style-type: none"> Safe Work Procedure Supervisor to monitor their respective area Sloping to be provied on the all edges of excavation 1 meter ratio. Safe access egress to be provided for the excavation. Dewatering pump should be available. Emergency termination joint kits for low voltage cables to be available on site. Ensure the Driver should not talk while driving. if any insect bite happen, inform immedeatly saftey officer. 	4	1	4	Permit Receiver & Issuer, Site Manager, Engineer, Supervisor, Foreman & Safety Officer	Yes

HAZARD IDENTIFICATION				Controls	RISK ASSESSMENT			RISK REDUCTION ACTION PLAN					
Item #	Work Activity (Process, Equipment, Materials)	Hazard	Risks Issue (Possible incident) [What can go wrong] To Whom	Existing Controls	Consequence	Likelihood	Risk Ranking / Profile	Improve existing controls / implement new controls	Consequence	Likelihood	Risk Ranking / Profile	Follow up by Whom (name) & By When (date)	Controls Implemented Yes/No
7	Soil backfilling using dump truck and skid load	<ul style="list-style-type: none"> Equipment (skid loader, wheel loader) 	<ul style="list-style-type: none"> Failure of equipment may lead to accident or injuries Collision by sudden operation of equipment may cause serious injury or damage to property Struck-by or hit moving vehicle 	<ul style="list-style-type: none"> Operator and driver shall carry out daily equipment inspection prior to work Operator must be ensuring the equipment are suitable for the task Ensure the competency of the operator and driver Safe use of equipment must be discussed during daily toolbox meeting by the foreman or supervisor Provide trained flagman with reflective vest along with Red and Green flags. Complete barricade must be provided, and the flagman shall position outside the barricade. Reverse audible alarm must be working properly Periodical maintenance program for all equipment and vehicle. Fastened of seat belt 	3	2	6	<ul style="list-style-type: none"> Safe Work Procedure Supervisor to monitor their respective area Driver should not leave the key inside while swithced off. Always ensure to park in designated area 	3	1	3	Permit Receiver & Issuer, Site Manager, Engineer, Supervisor, Foreman & Safety Officer	Yes
		<ul style="list-style-type: none"> Replacement of equipment or operator by surprise without coordination and certification Positioning of equipment near to the edge of the excavation Defective, damaged and improvised hand tools 	<ul style="list-style-type: none"> Major accident, serious injuries, fatality, property damage for unauthorized operation Equipment toppled and damage to property while moving Injuries to the operator or driver Injuries to other personnel involved to the activity Personal injury (laceration, etc.) due to contact with sharp edge, tools and materials 	<ul style="list-style-type: none"> Instruct all new personnel to report to the safety department or administration department. Close coordination between the management itself. Report all unfamiliar worker / personnel at site Authority to stop the work if found without valid license / certificate Issuance of disciplinary action Orientation to the operator and driver regarding the site condition Provide trained flagman with reflective vest along with Red and Green flags. Remind the operator and driver to follow the signal of the flagman Access must be properly compacted and even Workers are advised / instruct to move away from the equipment. Equipment shall position more than 1.5m from the edge of excavation Fastened of seat belt Compliance with the work permit system and requirement stated therein Workers shall use appropriate and good condition hand tools Defective hand tool shall not be use and must be taken out of the project Use appropriate hand gloves Avoid damaged tools and machine Supervisor and foreman must ensure the tools and materials are free from damage No modification of tools and machine. 	4	2	8	<ul style="list-style-type: none"> Safe Work Procedure Supervisor to monitor their respective area 	4	1	4	Permit Receiver & Issuer, Site Manager, Engineer, Supervisor, Foreman & Safety Officer	Yes
		<ul style="list-style-type: none"> Insufficient lights / poorly illuminated Slip, trip and fall Struck with nearby structure or personnel Access and egress (uneven, loose, blocked by materials, etc.) Exposure to dust and other airborne particles through inhalation and skin absorption 	<ul style="list-style-type: none"> Accident to personnel Damage to property Personal injury cause by other worker / equipment as the vision impairment Personal injury due to slips and trip hazards from the materials and surface area Foot strain and sprain Eyes, Skin and Respiratory irritation Ill health to personnel Accident resulting injury to personnel Visual impairment 	<ul style="list-style-type: none"> Good planning and position of lighting system. Initiate in conducting lighting survey Issuance of clear safety glass Provide sufficient illumination to the work place by installing HV lamp on the area Lighting shall be installed on all locations that could provide adequate illumination to the activity All workers shall wear clear safety glass at all times There shall be no activity allowed beyond 6:00 in the evening that hinders the visual capability of the workers Personnel and equipment access shall be free from any obstruction Materials should be stored in the designated area Materials and tools should be store away from exposed edge Ensure that access is leveled and compacted All workers shall be provided and wear safety glass at all times NIOSH approved dust mask shall be provided to all personnel exposed to dust Spray water to control the dust All operator and workers shall be provided with dust mask and wear it properly Gradually backfill the soil to minimize airborne dust. 	3	3	9	<ul style="list-style-type: none"> Safe Work Procedure Supervisor to monitor their respective area Permit Receiver shall be trained and authorized by the Manager to receive a Permit to Work Permit Receiver shall be responsible to oversee for the safety of all workers under his Permit to Work 	3	1	3	Permit Receiver & Issuer, Site Manager, Engineer, Supervisor, Foreman & Safety Officer	Yes