

4.0 HAZARD IDENTIFICATION, RISK ASSESSMENT AND DETERMINING CONTROL

4.1 HAZARD IDENTIFICATION, RISK ASSESSMENT AND DETERMINING CONTROL PROCEDURE

4.2 HAZARD IDENTIFICATION AND RISK ASSESSMENT

4.1 HAZARD IDENTIFICATION, RISK ASSESSMENT AND DETERMINING CONTROL PROCEDURE

1.0 PURPOSE

To define the principle and practice of OHS Hazard Identification and the importance of Risk Assessment and Determining Control.

2.0 SCOPE

This procedure applies to all workplaces (sites, premises, offices, premises of client/customer including personnel who are travelling or in transit) of WCT Berhad.

3.0 RESPONSIBILITIES

Safety & Health Committee (SHC) is responsible to

- ensure HIRAC activities and facilities are documented.
- consult with everyone concerned, to identify the potential hazards within the relevant workplaces.
- plan to eliminate or reduce the intolerable risk to an acceptable level.

4.0 PROCEDURES

4.1 General

Effective Risk Assessment shall consists of the following steps:

1. classify the work activities mapping out of work activities.
2. conduct hazard identification
3. determine the risk level
4. prepare risk control action plan for high risk activities
5. periodically review the adequacy and effectiveness of action plan (at least once in three (3) months).

4.2 Classify Work Activities

As preliminary to carry out risk assessment, Head of Department (HOD)/ HSSE Officer shall prepare a list of activities to identify the work activities, to group them in a rational and manageable way, and to gather necessary information about them. This shall include routine and non-routine activities. Possible ways of classifying work activities include:

- geographical areas within/ outside the workplaces.
- stages in the HIRAC activities and facilities (infrastructure, equipment, material).
- human behavior, capabilities and other human factors
- hazards originating outside the workplace
- changes or proposed changes in the company, management system, its activities, or materials
- planned and reactive work (maintenance, etc).
- emergencies (flood, electricity blackout, fire, etc).

4.3 Conduct Hazard Identification

The SHC and respective personnel shall review the overall work activities and then verify on-site. For each verified work activity, SHC shall consult with respective process owner to identify the potential hazards and then record in a Hazard Identification & Risk Assessment Form.

4.4 Determine the Risk Level

The SHC shall review the identified hazards and evaluate the severity and probability/ likelihood of risk. From the identified activities with the highest hazardous score, the SHC will expand the activities into successive steps (routine & non-routine) to investigate, analyze the effects of the potential hazards and assess the level of risk using the risk level table defined under the followings.

Guide to Determine Risk Level

The risk level is established by assessing the **severity** of the risk and its **probability/ likelihood** of occurring.

Severity

Level	Descriptor	Description
1	Negligible	First aid cases, low financial loss (\leq RM 25,000.00)
2	Minor injuries	Medical treatment required and medical leave given by medical practitioner, medium financial loss (RM 25,000.00 < x \leq RM 50,000.00)
3	Major injuries	Medical treatment required, loss of any of the parts or body or medical leave more than 1 month, high financial loss (RM 50,000.00 < x \leq RM 100,000.00)
4	Fatality	Death, huge financial loss (> RM 100,000.00)

Probability/Likelihood

Level	Descriptor	Description
1	Highly unlikely	Happen but probably never will (yearly)
2	Unlikely	Happen but only rarely (6 months once)
3	Likely	Occasionally (3 months once)
4	Very likely	Frequently (monthly)

Risk Level

Consequences	Likelihood			
	Very likely (4)	Likely	Unlikely	Highly Unlikely
Fatality (4)	High (16)	High (12)	High (8)	Medium (4)
Major Injuries (3)	High (12)	High (9)	Medium (6)	Medium (3)
Minor Injuries (2)	High (8)	Medium (6)	Medium (4)	Low (2)
Negligible (1)	Medium (4)	Medium (3)	Low (2)	Low (1)

1 – 2 = **Low risk** (no action required)

3 – 6 = **Medium risk** (additional control required)

7 – 16 = **High risk** (work should not be started until the risk has been reduced and all additional control are taken)

4.5 Prepare Control Action Plan

The SHC shall work out an action plan by using Control Action Plan (CAP) to record any recommendation control actions, programme implementation and operational procedures when the risk is identified as unacceptable/ substantial. The acceptable/ substantial risk is defined as the risk that has been reduced to a level that can be endured by the organization having regard to its legal obligations and the company's OHS policy.

When determining controls, or considering changes to existing controls, consideration shall be given to reducing risks according to the following hierarchy:

- a) elimination
- b) substitution
- c) engineering controls
- d) signage/ warnings and/ or administrative controls
- e) personal protective equipment

4.6 Review of Action Plan

The hazards identification and risk assessment processes should be carried out continuously whenever there is significant threat and there is uncertainty in the effectiveness on the existing/ planned controls. Where possible, the action plan shall be reviewed once in three month or when there is any incident happened.

5.0 DOCUMENTATION

- a) Hazard Identification & Risk Assessment form.

4.2

**HAZARD IDENTIFICATION AND RISK
ASSESSMENT**

Civil Work**HAZARD IDENTIFICATION AND RISK ASSESSMENT FORM**

Project Name: Proposed Development of New LCC Terminal and Associated Works at KL International Airport, Sepang, Selangor Darul Ehsan.
 Package EW01 – Site Preparation, Earthworks and Main Drainage.

Date : 01/12/2009

Activities/ Process/ Facilities/ Equipment	IDENTIFY				ASSESS			CONTROL			
	Hazard	Effect	Current Risk Control	Legal Requirement	Risk			Actions & Recommendations	PIC	DUE	STATUS
					SEV	PRO	RISK RATING				

PRELIMINARY WORKS**SITE POSSESSION**

- Inspection	- Open Pit / Manhole of existing Structure - Existing Services : a) Electrical b) Water pipes c) Sewerage - Traffic Accident - Animal / Insect Bites	- Injury - Fatal - Biological Hazard	- PPE including long sleeve clothing's and boots	- FMA 24	4	1	4	N/A	N/A	N/A	N/A
- Traveling from HQ to Site vice-versa & Site to HQ	- Motor vehicle accident.	- Injury - Fatal	- Crush Helmet - Observe road transport rules - Driving license - Vehicle maintenance	- Road Traffic Regulation (Highway code 46 and 51) - Road Traffic Act 26	4	1	4	N/A	N/A	N/A	N/A

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SITE POSSESSION (Cont'd)

- Workers coming in to work	- Contact disease - Hazard causes by others	- Fatal - Injury - Disease	- Supervisors to ensure and check all workers are free from the influent of drug, alcohol and disease - ERP for spread of Disease	- OSHA Sec 15	4	1	4	N/A	N/A	N/A	N/A
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SURVEY WORKS

i) Clearing site for access way ii) Establish the station iii) Establish the block. iv) Establish TBM v) Establish OGL	- Animal / Insect Bites - Fall into manhole or pit - Trip - Sharp Edge - Traffic Accident	- Injury - Fatal	- Induction - Tool box talks - PPE	- OSHA Sec 15 - FMA Sec 24 Road Traffic Act 26	4	1	4	N/A	N/A	N/A	N/A
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SITE CLEARANCE											
- Mobilization of workers	- Hysteria - Biological Hazard	- Fatal - Contact Disease	- Stress Management - Medical Check-Up	- OSHA Sec 15	4	1	4	N/A	N/A	N/A	N/A
- Mobilize Machinery	- Machine Topple	- Injury	- Induction - Toolbox talks - PPE (Safety Boots) - Competent Operator	- OSHA Sec 15 - FMA Sec 19, 24	2	1	2	N/A	N/A	N/A	N/A
- Remove trees & bushes	- Tree felling - Overhead cable / underground services - Machine collision - Noise / vibration	- Injury - Fatal - Hearing damages - Carpal Tunnel Syndrome	- Competent Operator - Supervision - Safe Operating Procedure - PPE	- OSHA Sec 15 - FMA Sec 19, 24	4	1	4	N/A	N/A	N/A	N/A
- Construct Access	- Machine Topple - Dust	- Injury - Fatal - Respiratory Disease	- Competent operator - Supervision / SOP - PPE	- OSHA Sec 15 - FMA Sec 19	4	1	4	N/A	N/A	N/A	N/A
- Delivering debris away from site	- Machine topple - Tree trunk fall on road	- Injury - Public Injury - Vehicle damages	- Competent Operator - Tool box talks - Supervision	- OSHA Sec 15 - FMA Sec 19	2	1	2	N/A	N/A	N/A	N/A

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OFFICE CONSTRUCTION											
i) Mobilization of cabin / container	- Slip, Trip and Fall - Sling Snap	- Injury - Cabin damages	- Induction - Tool box talks - Trained operator - Supervision / PPE	- OSHA Sec 15 - FMA Sec 19	2	1	2	N/A	N/A	N/A	N/A
ii) Unload and arranging container	- Crane topple - Sling Snap	- Injury - Fatal	- Crane PMA / Sling Inspection - Competent Operator - Signaller - Supervision	- FM (Notification Cert of Fitness & Inspection) Reg. 10 - OSHA Sec 15 - FMA 19	4	1	4	N/A	N/A	N/A	N/A
iii) Roof work	- Falling from height - Sharp object / edges - Heat	- Injury - Stress	- Induction - Tool box talks - Safe working platform - Drinking water - PPE (Safety Harness)	- OSHA Sec 15	2	1	2	N/A	N/A	N/A	N/A

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OFFICE CONSTRUCTION (Cont'd)											
iv)Construct Office	- Sharp object / edges - Chemical (glue/ thinner)	- Injury - Respiratory Disease	- Tool box talks - Supervision - Proper PPE (Mask)	- FMA 24	2	1	2	N/A	N/A	N/A	N/A
v)Screeding	- Cement contact	- Skin Disease	- Tool box talks - PPE (Glove)	- FMA 24	2	1	2	N/A	N/A	N/A	N/A
vi)Office utility works	- Electrocution - Sharp object / edges - Fall from height - Short circuit / fire - Flying particles	- Injury - Fatal - Eye damages	- Inspection of tools - Concealed wiring - Safe work platform - Earthing with proper DB & ELCB - Fire Extinguisher - PPE (Goggles)	- FM (BOWEC) PART XVI - FMA 24 - FM (BOWEC) 24 - FM (PIC) 19, 20 - FM (SHW) 22	2	1	2	N/A	N/A	N/A	N/A
vii)Sanitary & Sewerage works	- Sharp object / edges - Fall into pit	- Injury	- Barricade work area - Proper PPE	- FM (SHW) 8 - FMA 24	2	1	2	N/A	N/A	N/A	N/A

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OFFICE CONSTRUCTION (Cont'd)											
viii)Arrangement of office equipments and furniture	- Ergonomic	- Musculo-skeletal Disorder	- Tool box talks - Safe Work Procedure - Supervision - PPE	- OSHA Sec 15	2	1	2	N/A	N/A	N/A	N/A
ix)Site entrance / Drop gate / Swinging gate	- Sharp object / edges - Falling object - Fire (Spark cause by welding works) - Electrocution	- Injury	- Induction - Toolbox talks - Hot Work Permit - Warning Signage's - Safety barricade - Fire Extinguisher - Electrical tools inspection - Supervision - Proper PPE	- OSHA Sec 15 - FMA 24 - FM (SHW) 8	2	1	2	N/A	N/A	N/A	N/A
x)Site Leveling	- Dust - Heat	- Respiratory Disease - Stress	- Dewatering - Proper PPE - Drinking water	- FMA 24	2	1	2	N/A	N/A	N/A	N/A

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HOARDING & FENCING

i)Material delivery	- Material slip - Sharp object / edges	- Injury	- Induction - Tool box talks - PPE	- OSHA Sec 15	2	1	2	N/A	N/A	N/A	N/A
ii)Erection of pre-fabricated steel column	- Material slip - Sharp object - Skin irritation - Fire (due welding work)	- Injury	- Tool box talks - Safety barricade - Warning signage's - Hot Work Permit - Fire Extinguisher - Tools inspections - Proper PPE	- FM (SHW) 8 - OSHA Sec 15 - FMA 24 & 26 - FM (BOWEC) PART XVI	2	1	2	N/A	N/A	N/A	N/A
iii)Fastening horizontal bars / braces for column	- Material Slip - Sharp object - Electrocution	- Injury	- Tool box talks - Warning signage's - Tools inspections - Proper PPE	- FMA 24 & 26 - FM (BOWEC) PART XVI	2	1	2	N/A	N/A	N/A	N/A

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HOARDING & FENCING (Cont'd)											
iv) Installation of metal cladding to hoarding horizontal by bolting into column	- Falling object - Material Slip - Sharp object	- Injury	- Induction - Tool box talks - Proper PPE	- OSHA Sec 15 - FMA 24	2	1	2	N/A	N/A	N/A	N/A
v) Utility works	- Electrocution - Sharp object / edges - Falling from height - Short circuit / Fire - Flying particles	- Injury	- Tool box talks - Tools inspection - Safe working platform - Concealed wiring - Fire Extinguisher - Earthing with proper DB & ELCB - Proper PPE	- FM (BOWEC) PART XVI - FMA 24 - FM (BOWEC) 86 - FM (PIC) 19, 20 - FM (SHW) 21 - FMA 24	2	1	2	N/A	N/A	N/A	N/A
vi) Sanitary & Sewerage works	- Sharp object / edges - Fall into pit	- Injury	- Barricade work area - Proper PPE	- FM SHW Reg. 8 - FMA 24	2	1	2	N/A	N/A	N/A	N/A

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PESTICIDE CONTROL											
- Fogging / Larvaciding	- Contact with Chemical - Noise - Fire	- Respiratory Disease	- Induction - PPE (Mask) - Fogging machine maintenance - Proper storage - Personnel Exposure Monitoring - Fire Extinguisher	- OSHA Sec 15 - FMA 24 - FM (PIC) Reg. 19 & 20 - USECHH 2000 - CPL - Pesticide Act	2	1	2	N/A	N/A	N/A	N/A

SECURITY											
i) Vehicles checking	- Hit by vehicle - Dust	- Injury - Respiratory Disease	- Induction - PPE	- OSHA Sec 15 - FMA 24	2	1	2	N/A	N/A	N/A	N/A
ii) Patrolling	- Fall into excavation area	- Injury	- Warning Signage's - Safety Barricade	- FM (SHW) Reg. 8 - OSHA Sec 15	2	1	2	N/A	N/A	N/A	N/A

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CANTEEN & STORAGE YARD											
i)Leveling	- Dust	- Respiratory Disease	- Dewatering - Proper PPE	- OSHA Sec 15 - FMA 24	2	1	2	N/A	N/A	N/A	N/A
ii)Mobilization, setting up, Loading, Unloading, Laying & Arrangement	- Crane Topple - Caught in between - Sharp object - Heat - Ergonomic	- Injury - Fatal - Stress - Musculo-skeletal Disorder	- Induction - Tool box talks - PPE - Drinking water - Firm base for crane - PMA and lifting gears inspection - Competent Crane operator - Crane Signalman	- FMA Sec 24, 26 - FM (SHW) 7 - FM (PIC) 19, 20	4	1	4	- Use scaffold if any roof work is being carried out. - Support the purlin with scaffold	N/A	N/A	N/A
iii)Cooking & Heating	- Gas Leakage - Gas Explosion - Burn - Electrocution - Fire - Suffocation - Biological Hazard	- Injury - Fatal - Ill health	- Gas hose & tank, electrical appliances & cable in good condition - Adequate of fire extinguisher - Proper ventilation - Injection of typhoid - Provision of clean canteen operator	- OSHA Sec 15	4	1	4	N/A	N/A	N/A	N/A

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CANTEEN & STORAGE YARD (Cont'd)											
iv) Storage platform timber or steel raised platform material stacking storage access	- Material collapse - Slip, Trip & Fall - Penetration of sharp object	- Injury	- Proper stacking of material - Control stacking height - Drum to be in upright position - Proper drainage - Keep storage yard / floor dry & oil free. - Warning signage - Housekeeping	- FMA 24, 26	3	1	3	N/A	N/A	N/A	N/A
v) Storage of Chemical	- Spillage - Fire - Fumes	- Injury - Respiratory - Disease - Skin Disease	- PPE - Proper stacking of material - Adequate ventilation - Segregate storage - Classification - Packaging - Labeling - Warning signage - Fire Extinguisher - CHRA, CSDS, MSDS - Housekeeping	- FMA 24 - CPL 1997 - USECHH 2000	3	1	3	N/A	N/A	N/A	N/A

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FABRICATION YARDS											
i)Leveling	- Dust	- Respiratory Disease	- Dewatering - Proper PPE	- OSHA Sec 15 - FMA 24	2	1	2	N/A	N/A	N/A	N/A
ii)Construct Timber Hut	- Sharp object - Falling object - Fall from height	- Injury	- Tool box Talks - Proper PPE	- OSHA Sec 15 - FMA 24	2	1	2	N/A	N/A	N/A	N/A
iii)Prefabrication of rebar / formwork	- Sharp object - Flying particles	- Injury - Eye damages	- Tool box talks - Proper PPE - Safety Guard for expose area	- OSHA Sec 15 - FMA 24 & 26 - FM (FM&S) 1970 Reg. 4	2	1	2	N/A	N/A	N/A	N/A

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GENERATOR SET											
- Loading/ unloading and placement of the generator set	- Sling Snap	- Injury - Fatal	- Toolbox talks - Sling / Crane inspection - Competent crane operator - PPE	- OSHA Sec 15 - FMA 24 & 26 - FM (Notificati- on Cert of Fitness & Inspection) 1970 Reg.10	4	1	4	N/A	N/A	N/A	N/A
- Use of generator set	- Smoke emission - Sharp object - Oil spillage - Electrocution - Suffocation - Noise	- Injury - Respiratory Disease - Hearing damages	- Oil Tray - Earthing - Adequate ventilation - Warning signage's - Inspection and Maintenance - Fire Extinguisher - PPE	- OSHA Sec 15 - FMA 24 - FM (BOWEC) 16 - FM (SHW) 22 - FM (PIC) 19, 20	2	1	2	N/A	N/A	N/A	N/A

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AIR COMPRESSOR											
- Loading/ unloading and placement of the air compressor	- Sling Snap - Tripped in between	- Injury - Fatal	- Induction - Tool box talks - Sling / Crane inspection - Competent crane operator - PPE	- OSHA Sec 15 - FMA 24 & 26 - FM (Notificati- on Cert of Fitness & Inspection) 1970 Reg.10 - FMA 19	4	1	4	N/A	N/A	N/A	N/A
- Use of air compressor	- Oil spillage - Suffocation - Noise - Hose & Coupling failure - Hose & Clamp failure	- Injury - Hearing damages	- Drip Tray - Inspection and maintenance - Valid PMT - PPE	- OSHA Sec 15 - FMA 24 - FM (BOWEC) 16 - FM (SHW) Reg. 22 - FM (PIC) 19, 20	2	1	2	N/A	N/A	N/A	N/A

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HEAVY EARTHWORK MACHINERIES											
- Delivery to site	- Traffic accident	- Injury	- Competent operator	- FMA 19	2	1	2	N/A	N/A	N/A	N/A
- Operation at site	- Overload - High Speed - Hydraulic failure - Collision	- Injury	- Induction - Tool box talks - Regular inspection and maintenance - Trained operator - Supervision - Preventive maintenance	- OSHA Sec 15 - FM (PIC) 19, 20	2	1	2	N/A	N/A	N/A	N/A

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TEMPORARY WORKS											
- Edge Protection (Installing & Maintenance)	- Falling object - Fall from height - Sharp edges / object	- Fatal	- Induction - Tool box talks - Housekeeping - Warning Signage's - Inspection & maintenance - Proper PPE	- OSHA Sec 15 - FMA 24 & 26 - FM (SHW) 23 - FM (BOWEC) 55	4	1	4	N/A	N/A	N/A	N/A
- Lighting (Installing & Maintenance)	- Falling object - Fall from height - Electrocuted - Ergonomic	- Injury - Fatal - Musculo- skeletal Disorder	- Induction - Tool box talks - Inspection & maintenance - Ladder	- OSHA Sec 15 - FMA 24 & 26 - FM (BOWEC) PART IX	4	1	4	N/A	N/A	N/A	N/A

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TEMPORARY WORKS (Cont'd)											
- Temporary Signage's (Installation & Maintenance)	- Falling object - Fall from height - Sharp edges / object - Slip, Trip	- Injury	- Induction - Tool box talks - Inspection & maintenance - Proper PPE	- OSHA Sec 15 - FMA 26	2	1	2	N/A	N/A	N/A	N/A
- Housekeeping	- Slip & Trip - Fall from height - Fire - Sharp edges/object - Falling object - Dust	- Injury - Respiratory Disease	- Induction - Tool box talks - PPE (Mask) - Warning Signage's - Railing / Barricade - Fire Extinguisher - Personnel Exposure Monitoring	- OSHA Sec 15 - FMA 24 & 26 - FM (SHW) 8 & 22	2	1	2	N/A	N/A	N/A	N/A

Civil Work**HAZARD IDENTIFICATION AND RISK ASSESSMENT FORM**

Project Name: Proposed Development of New LCC Terminal and Associated Works at KL International Airport, Sepang, Selangor Darul Ehsan.
 Package EW01 – Site Preparation, Earthworks and Main Drainage.

Date : 01/12/2009

Activities/ Process/ Facilities/ Equipment	Hazard	IDENTIFY			ASSESS			CONTROL			
		Effect	Current Risk Control	Legal Requirement	Risk			Actions & Recommendations	PIC	DUE	STATUS
					SEV	PRO	RISK RATING				

TEMPORARY WORKS (Cont'd)											
- Diesel Skid i) Leveling & compaction of Skid Tank base, side formwork, Reinforcement of Skid Tank base, Brickwork / plastering	- Penetration by sharp object / edges - Chemical Hazard - Ergonomic - Heat	- Injury - Skin Disease - Musculo-skeletal Disorder - Stress	- Induction - Tool box talks - Compactor operated by skilled personnel - PPE - Drinking water - Supervision - CSDS	- FMA 24, 26	2	1	2	N/A	N/A	N/A	N/A
ii) Plinth (Concrete block) installation, lifting, placing	- Falling Object - Crane topple - Slings & Shackle failure	- Injury - Fatal	- Induction - Tool box talks - Compactor operated by skilled personnel - PPE - Inspection of lifting appliances - Valid PMA & competent operator	- FMA 24, 26 - FM (SHW) 7 - FM (PIC) 19, 20	4	1	4	N/A	N/A	N/A	N/A

Civil Work**HAZARD IDENTIFICATION AND RISK ASSESSMENT FORM**

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TEMPORARY WORKS (Cont'd)

iii) Roofing and Shade	<ul style="list-style-type: none"> - Fall from height - Falling object - Penetration of sharp object / edges - Heat 	<ul style="list-style-type: none"> - Injury - Fatal - Stress 	<ul style="list-style-type: none"> - Induction - Tool box talks - PPE - Drinking water - Proper hand tools - Proper access 	<ul style="list-style-type: none"> - FMA 24, 26 - FM (SHW) 7 - FM (PIC) 19, 20 	4	1	4	N/A	N/A	N/A	N/A
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Civil Work**HAZARD IDENTIFICATION AND RISK ASSESSMENT FORM**

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SILT TRAP & SEDIMENT BASIN											
- Excavation, leveling & compacting of base	- Existing Services : (a) Electrical (b) Water pipes (c) Sewerage - Struck by machinery - Vibration	- Injury - Carpal Tunnel Syndrome	- Induction - Tool box Talks - PPE/ SOP - Competent Machine Operator - Keep away from swing area - Supervision	- FMA 24, 26 - FM (SHW) 7	2	1	2	N/A	N/A	N/A	N/A
- Forming earth bund & perimeter earth drain	- Struck by machinery	- Injury	- Induction - Tool box Talks - PPE - Competent Machine Operator	- FMA 24, 26 - FM (SHW) 7	2	1	2	N/A	N/A	N/A	N/A
- Maintenance of Sediment pond / Silt Trap	- Struck by machinery	- Injury	- Skilled machine operator - Supervision	- FMA 24, 26 - FM (SHW) 7	2	1	2	N/A	N/A	N/A	N/A

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MACHINERY WORKSHOP & MAINTENANCE AREA											
- Spare part storage	- Falling object - Sharp edges / object	- Injury	- Induction - Tool box talks - PPE - Supervision	- OSHA Sec 15 - FMA 24 & 26	2	1	2	N/A	N/A	N/A	N/A
- Welding and Cutting	- Heat - Fire - Glare - Fumes - Ergonomic	- Injury - Eye damages - Musculo-skeletal Disorder	- Induction - Tool box talks - Hot Work Permit - Fire Extinguisher - Warning Signage's - Drinking water - Proper PPE	- OSHA Sec 15 - FMA 24 & 26 - FM (SHW) 8 - FM (SHW) 22	2	1	2	N/A	N/A	N/A	N/A
- Maintenance Works • Tyre changing services	- Air pressure - Ergonomic	- Injury - Musculo-skeletal Disorder - Back Injury	- Proper material stacking - Administrative control	- OSHA Sec 15 - FMA 24 & 26	2	1	2	N/A	N/A	N/A	N/A

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MACHINERY WORKSHOP & MAINTENANCE AREA (Cont'd)

- Maintenance Works • Engine	- Heat - Fire spark - Caught in between	- Injury	- Proper material stacking - Supervision - PPE - Fire Extinguisher	- OSHA Sec 15 - FMA 24 & 26 - FM (BOWEC) 119 - FM (BOWEC) 148 - FM (SHW) 22	2	1	2	N/A	N/A	N/A	N/A
- Maintenance works • Change of chains, roller, buckets, etc	- Heat - Fire spark - Caught in between	- Injury	- Proper material stacking - Supervision - PPE - Fire Extinguisher	- OSHA Sec 15 - FMA 24 & 26 - FM (BOWEC) 119 - FM (BOWEC) 148 - FM (SHW) 22	2	1	2	N/A	N/A	N/A	N/A

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MOBILE MACHINERY WORKSHOP & MAINTENANCE AREA

- Mobile maintenance	- Vehicle overturned - Chemical	- Injury - Respiratory Disease - Skin Disease	- Induction - Tool box talks - PPE / MSDS / CSDS - Supervision - Proper material stacking / hand tools - Fire Extinguisher	- OSHA Sec 15 - FMA 24 & 26 - FM (BOWEC) 119 - FM (BOWEC) 148 - FM (SHW) 22	2	1	2	N/A	N/A	N/A	N/A
- Diesel • Unloading from external transporters (E.g. Petronas)	- Spillage - Fire - Fumes - Chemical	- Injury - Respiratory Disease - Skin Irritant	- Induction - Tool box talks - PPE / MSDS / CSDS - Supervision - Fire Extinguisher	- OSHA Sec 15 - FMA 24 & 26 - FM (SHW) 22	2	1	2	N/A	N/A	N/A	N/A

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MOBILE MACHINERY WORKSHOP & MAINTENANCE AREA (Cont'd)

- Diesel • Unloading to vehicles	- Spillage - Fire - Fumes - Chemical	- Injury - Respiratory - Disease - Skin Irritant	- Induction - Tool box talks - PPE / MSDS / CSDS - Supervision - Fire Extinguisher	- OSHA Sec 15 - FMA 24 & 26 - FM (SHW) 22	2	1	2	N/A	N/A	N/A	N/A
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TRANSPORTING MACHINERY (Backhoe, Excavator, Dump Truck, Lorry, Back pusher, Bulldozer, Roller, Crane, Motor Grader)

- Delivery to site	- Machine topple	- Injury	- Induction - Toolbox talks - PPE - Supervision	- OSHA Sec 15 - FMA 24 & 26 - FM (BOWEC) 119 - FM (BOWEC) 148 - FM (SHW) 22	2	1	2	N/A	N/A	N/A	N/A
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TRANSPORTING MACHINERY (Backhoe, Excavator, Dump Truck, Lorry, Back pusher, Bulldozer, Roller, Crane, Motor Grader) (Cont'd)

- Unloading heavy machine.	- Machine topple	- Injury	- Induction - Tool box talks - PPE - Supervision	- OSHA Sec 15 - FMA 24 & 26 - FM (BOWEC) 119 - FM (BOWEC) 148 - FM (SHW) 22	2	1	2	N/A	N/A	N/A	N/A
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LABORATORY ACTIVITY											
- Field Test	- Animal / Insect bites - Hit by vehicle - Hit by tools - Chemical - Heat	- Injury - Respiratory - Disease - Skin Disease - Stress	- Induction - MSDS / CSDS - Tool box talks - Proper PPE - Supervision - Drinking water	- OSHA Sec 15 - FMA 24 & 26 - FM (BOWEC) 148	2	1	2	N/A	N/A	N/A	N/A
- Laboratory Test	- Cube crushing - Wrong tools - Fire (Oven)	- Injury - Equipment damages	- Induction - Tool box talks - PPE / SOP - Supervision - Proper material stacking - Proper hand tools - Fire Extinguisher	- OSHA Sec 15 - FMA 24 & 26 - FM (BOWEC) 119 - FM (BOWEC) 148 - FM (SHW) 22	2	1	2	N/A	N/A	N/A	N/A

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RIVER DIVERSION

- Diversion & clearing of river excavation	- Drowning - Soil collapse - Existing underground services - Excavator mechanical failure	- Fatal	- Induction - Tool box talks - Supervision - Proper PPE - Warning signage's - Inspection & maintenance	- OSHA Sec 15 - FMA 24 & 26 - FMA 19 - FM (PIC) 19, 20	4	1	4	N/A	N/A	N/A	N/A
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ROCK BLASTING

- Delivery of explosive material	- Vehicle collision - Explosion	- Fatal	- Induction - Tool box talks - Designated person - Proper PPE - Warning signage's	- OSHA Sec 15 - FM (BOWEC) 135 - FMA 26	4	1	4	N/A	N/A	N/A	N/A
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ROCK BLASTING (Cont'd)											
- Storage	- Explosion	- Fatal	- Induction - Tool box talks - Designated person & storage area - Proper PPE - Warning signage's	- OSHA Sec 15 - FM (BOWEC) 135 - FMA 26	4	1	4	N/A	N/A	N/A	N/A
- Drilling works	- Dust - Noise - Silica - Vibration - Heat	- Respiratory Disease - Hearing damages - Carpal Tunnel Syndrome - Stress	- Induction - Tool box talks - Safety barricade - Proper PPE - Warning signage's - Supervision	- OSHA Sec 15 - FMA 24 & 26 - FM (SHW) 8	2	1	2	N/A	N/A	N/A	N/A
- Setting of explosive	- Explosion	- Fatal	- Induction - Tool box talks - Proper PPE - Warning signage's - Supervision	- OSHA Sec 15 - FMA 26 - FM (BOWEC) 135	4	1	4	N/A	N/A	N/A	N/A

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EARTHWORK											
- Top soil removal	- Existing underground services - Soil collapse - Excavator mechanical failure - Dust	- Injury - Respiratory Disease	- Induction - Tool box talks - Supervision - PPE (Mask) - Warning signage's - Safety barricade - Shoring / safe slope gradient / approved shoring design. - Inspection & maintenance - Dewatering	- OSHA Sec 15 - FMA 24 & 26 - FM (SHW) 8 - FM (BOWEC) 112 - FMA 19 - FM (PIC) 19, 20	2	1	2	N/A	N/A	N/A	N/A
- Excavation	- Soil collapse - Machine topple - Fall into pit - Mechanical failure - Dust - Noise - Heat	- Injury - Hearing damages - Respiratory Disease - Stress	- Tool box talks - Supervision - Proper PPE - Warning signage's - Safety barricade - Excavation Permit - Competent operator - Inspection & maintenance - Dewatering - Drinking water	- OSHA Sec 15 - FMA 24 & 26 - FM (SHW) 8 - FMA 19 - FM (PIC) 19, 20	2	1	2	N/A	N/A	N/A	N/A

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EARTHWORK (Cont'd)											
- Material transportation & unloading	- Vehicle collision - Vehicle overturn - Dust - Soil spillage - Ergonomic	- Fatal - Respiratory Disease - Musculo-skeletal Disorder	- Tool box talks - Proper PPE - Slope & stability - Competent operator - Vehicle inspection & maintenance	- OSHA Sec 15 - FMA 19 & 24 - FM (PIC) 19, 20	4	1	4	N/A	N/A	N/A	N/A
- Earth leveling (Motor Grader)	- Vehicle collision - Dust - Vibration - Heat	- Injury - Respiratory Disease - Carpal Tunnel Syndrome - Stress	- Induction - Tool box talks - Proper PPE - Supervision - Competent operator - Vehicle maintenance & inspection - Drinking water	- OSHA Sec 15 - FMA 19, 24 & 26 - FM (PIC) 19, 20	2	1	2	N/A	N/A	N/A	N/A
- Earth compaction	- Noise - Vibration - Dust - Heat	- Hearing damages - Carpal Tunnel Syndrome - Respiratory Disease - Stress	- Tool box talks - Proper PPE - Competent operator - Supervision - Vehicle inspection & maintenance - Drinking water	- OSHA Sec 15 - FMA 19, 24 & 26 - FM (PIC) 19, 20	2	1	2	N/A	N/A	N/A	N/A

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		Effect	Current Risk Control	Legal Requirement	Risk			Actions & Recommendations	PIC	DUE	STATUS
					SEV	PRO	RISK RATING				

ROCK BLASTING (Cont'd)

- Blasting	- Falling object - Flying rock - Dust - Noise - Vibration	- Fatal - Respiratory Disease - Hearing damages - Carpal Tunnel Syndrome	- Induction - Tool box talks - Proper PPE - Designated person (short firer licensed) - Warning signage's - Supervision - SOP - Safety barricade - Evacuation	- OSHA Sec 15 - FM (BOWEC) PART XV - FMA 24 & 26 - FM (SHW) 8	4	1	4	N/A	N/A	N/A	N/A
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DRAINAGE WORKS (Pre – Cast) – Box culvert, U-drain, RCP											
- Establish the station & point	- Trip - Sharp edges	- Injury	- Induction - Tool box talks - Proper PPE - Supervision	- OSHA Sec 15 - FMA 24	2	1	2	N/A	N/A	N/A	N/A
- Trench Excavation	- Existing underground services - Soil collapse - Excavator mechanical failure - Dust	- Fatal - Respiratory Disease - Eye damages	- Induction - Tool box talks - Warning signage's - Safety barricade - Shoring/Safe slope gradient/Approved shoring design - Excavation permit - Competent operator - Inspection & maintenance - Proper PPE	- OSHA Sec 15 - FMA 24 & 26 - FM (SHW) 8 - FM (BOWEC) 112 - FMA 19 - FM (PIC) 19, 20	4	1	4	N/A	N/A	N/A	N/A

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					SEV	PRO	RISK RATING				

DRAINAGE WORKS (Pre – Cast) – Box culvert, U-drain, RCP (Cont'd)											
- Storage for Pre Cast	- Material collapse	- Injury	- Induction - Tool box talks - Safety barricade - Proper stacking method - Supervision - PPE	- OSHA Sec 15 - FMA 24 & 26 - FM (SHW) 8 - FM (SHW) 20	2	1	2	N/A	N/A	N/A	N/A
- Lifting	- Sling snap - Crane topple - Overload - Hit by object - Material lifted fall	- Fatal	- Induction - Toolbox talks - Supervision - Competent crane operator - Valid PMA - Sling / lifting appliances inspection - Warning signage's - PPE	- OSHA Sec 15 - FMA 24 & 26 - FM (Notification Cert of Fitness & Insp. 1970 Reg. 10	4	1	4	N/A	N/A	N/A	N/A

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					SEV	PRO	RISK RATING				

DRAINAGE WORKS (Pre – Cast) – Box culvert, U-drain, RCP (Cont'd)											
- Installation	- Sharp object / edges - Sling snap - Heat	- Injury - Stress	- Crane inspection - Valid PMA & Competent operator - Signalman - Supervision - PPE - Drinking water	- FMA 19 & 26 - FM (Notificati- on Cert of Fitness & Insp. 1970 Reg. 10 - FM (PIC) 19, 20	2	1	2	N/A	N/A	N/A	N/A
- Backfilling	- Soil collapse - Dust	- Injury - Respiratory Disease - Eye damages	- Supervision - Competent operator - Signalman - Inspection & maintenance - PPE	- FMA 19 & 26 - FM (PIC) 19, 20	2	1	2	N/A	N/A	N/A	N/A

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					SEV	PRO	RISK RATING				

DRAINAGE WORKS (Cast Insitu) – Berm Drain, Cascade Drain, Toe Drain, Road Side Drain, Box Culvert											
- Establish the station & point	- Trip - Sharp edges	- Injury	- Induction - Tool box talks - Proper PPE - Supervision	- OSHA Sec 15 - FMA 24	2	1	2	N/A	N/A	N/A	N/A
- Trench Excavation	- Existing underground services - Soil collapse - Excavator mechanical failure - Dust	- Fatal - Respiratory Disease - Eye damages	- Induction - Tool box talks - Warning signage's - Safety barricade - Shoring/Safe slope gradient/Approved shoring design - Excavation permit - Competent operator - Inspection & maintenance - Proper PPE	- OSHA Sec 15 - FMA 24 & 26 - FM (SHW) 8 - FM (BOWEC) 112 - FMA 19 - FM (PIC) 19, 20	4	1	4	N/A	N/A	N/A	N/A

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					SEV	PRO	RISK RATING										

DRAINAGE WORKS (Cast Insitu) – Berm Drain, Cascade Drain, Toe Drain, Road Side Drain, Box Culvert (Cont'd)											
- Material delivery	- Falling object - Material slip - Sharp object	- Injury	- Induction - Tool box talks - Proper PPE	- OSHA Sec 15 - FMA 24	2	1	2	N/A	N/A	N/A	N/A
- Lifting	- Sling snap - Crane topple - Overload - Hit by object - Material lifted fall	- Fatal	- Induction - Tool box talks - Supervision - Competent crane operator - Valid PMA - Sling / lifting appliances inspection - Warning signage's - PPE	- OSHA Sec 15 - FMA 24 & 26 - FM (Notification Cert of Fitness & Insp. 1970 Reg. 10	4	1	4	N/A	N/A	N/A	N/A

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Activities/ Process/ Facilities/ Equipment	Hazard	Effect	Current Risk Control	Legal Requirement	Risk			Actions & Recommendations	PIC	DUE	STATUS
					SEV	PRO	RISK RATING				

DRAINAGE WORKS (Cast Insitu) – Berm Drain, Cascade Drain, Toe Drain, Road Side Drain, Box Culvert (Cont'd)

- Lean concrete	- Chemical - Collision - Sling snap - Struck by concrete bucket - Awkward postures	- Injury - Fatal - Musculo-skeletal Disorder - Back injury	- Induction - Tool box talks - Supervision - Warning signage's - Crane PMA & competent operator - Proper PPE	- OSHA Sec 15 - FMA 24 - FM (Notification Cert of Fitness & Insp: 1970 Reg. 10 - FM (PIC) 19, 20	4	1	4	N/A	N/A	N/A	N/A
- Bar cutting / bending (installation of rebar)	- Sharp object - Slip, Trip & fall - Flying particles - Heat - Noise - Ergonomic	- Injury - Eye / Hearing damages - Stress - Musculo-skeletal Disorder	- Induction - Tool box talks - Suitable working table / platform - Drinking water - PPE	- OSHA Sec 15 - FMA 24 - FM (SHW) 23	2	1	2	N/A	N/A	N/A	N/A

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Date : 01/12/2009

IDENTIFY					ASSESS			CONTROL			
Activities/ Process/ Facilities/ Equipment	Hazard	Effect	Current Risk Control	Legal Requirement	Risk			Actions & Recommendations	PIC	DUE	STATUS
					SEV	PRO	RISK RATING				
DRAINAGE WORKS (Cast Insitn) – Berm Drain, Cascade Drain, Toe Drain, Road Side Drain, Box Culvert (Cont'd)											
- Install formwork	- Sharp object - Work platform collapse - Fall from height - Falling object	- Injury	- Induction - Tool box talks - Supervision - Housekeeping - Safe access way - PPE	- OSHA Sec 15 - FMA 24 - FM (SHW) 7	2	1	2	N/A	N/A	N/A	N/A
- Concreting	- Chemical - Dust	- Skin Disease - Respiratory Disease	- Induction - Tool box talks - Personnel exposure monitoring - Housekeeping - Safe access way - PPE	- OSHA Sec 15 - FMA 24 - FM (SHW) 7 - FM (SHW) 23	2	1	2	N/A	N/A	N/A	N/A
- Strike formwork	- Sharp object - Falling object - Work platform collapse - Cement dust - Ergonomic - Noise	- Injury - Hearing damages - Respiratory Disease - Musculo-skeletal disorder - Stress	- Induction - Tool box talks - Supervision - PPE - Housekeeping - Safe work platform - Safe access way - Personnel exposure monitoring - CHRA	- OSHA Sec 15 - FMA 24 - FM (SHW) 23 - FM (BOWEC) 86 - FM (SHW) 7	2	1	2	N/A	N/A	N/A	N/A

Civil Work**HAZARD IDENTIFICATION AND RISK ASSESSMENT FORM**

Project Name: Proposed Development of New LCC Terminal and Associated Works at KL International Airport, Sepang, Selangor Darul Ehsan.

Package EW01 – Site Preparation, Earthworks and Main Drainage.

Date : 01/12/2009

IDENTIFY					ASSESS			CONTROL			
Activities/ Process/ Facilities/ Equipment	Hazard	Effect	Current Risk Control	Legal Requirement	Risk			Actions & Recommendations	PIC	DUE	STATUS
					SEV	PRO	RISK RATING				

SEWERAGE WORKS											
- Establish the station & point	- Trip - Sharp edges	- Injury	- Induction - Tool box talks - Proper PPE - Supervision	- OSHA Sec 15 - FMA 24	2	1	2	N/A	N/A	N/A	N/A
- Excavation	- Existing underground services - Soil collapse - Excavator machine failure - Dust	- Fatal - Respiratory Disease - Eye damages	- Induction - Tool box talks - Warning signage's - Safety barricade - Shoring/Safe slope gradient/Approved shoring design - Excavation permit - Competent operator - Inspection & maintenance - Proper PPE	- OSHA Sec 15 - FMA 24 & 26 - FM (SHW) 8 - FM (BOWEC) 112 - FMA 19 - FM (PIC) 19, 20	4	1	4	N/A	N/A	N/A	N/A
- Material delivery	- Traffic accident - Dust	- Injury - Fatal - Respiratory Disease	- Induction - Tool box talks - Proper PPE	- OSHA Sec 15 - FMA 24	2	1	2	N/A	N/A	N/A	N/A

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Date : 01/12/2009

Activities/ Process/ Facilities/ Equipment	IDENTIFY				ASSESS			CONTROL			
	Hazard	Effect	Current Risk Control	Legal Requirement	Risk			Actions & Recommendations	PIC	DUE	STATUS
					SEV	PRO	RISK RATING				

SEWERAGE WORKS (Cont'd)											
- Material stockpile	- Falling object - Material rolled over - Caught in between	- Injury	- Supervision - Proper PPE - Housekeeping - Proper stacked	- OSHA Sec 15 - FMA 24 - FM (SHW) 20 & 23	2	1	2	N/A	N/A	N/A	N/A
- Pipe laying	- Sling snap - Falling object - Ergonomic - Heat	- Injury - Musculo-skeletal Disorder - Stress	- Supervision - Tool box talks - Proper stacked - SOP - Drinking water - Proper PPE	- OSHA Sec 15 - FMA 24 - FM (SHW) 20 & 23	2	1	2	N/A	N/A	N/A	N/A
- Install formwork	- Sharp object - Work platform collapse - Fall from height - Falling object	- Injury	- Induction - Tool box talks - Supervision - Housekeeping - Safe access way - PPE	- OSHA Sec 15 - FMA 24 - FM (SHW) 7	2	1	2	N/A	N/A	N/A	N/A

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Date : 01/12/2009

Activities/ Process/ Facilities/ Equipment	IDENTIFY				ASSESS			CONTROL			
	Hazard	Effect	Current Risk Control	Legal Requirement	Risk			Actions & Recommendations	PIC	DUE	STATUS
					SEV	PRO	RISK RATING				

SEWERAGE WORKS (Cont'd)											
- Concreting	- Chemical - Dust	- Skin Disease - Respiratory Disease	- Induction - Toolbox talks - Personnel exposure monitoring - Housekeeping - Safe access way - PPE	- OSHA Sec 15 - FMA 24 - FM (SHW) 7 - FM (SHW) 23	2	1	2	N/A	N/A	N/A	N/A
- Strike formwork	- Sharp object - Falling object - Work platform collapse - Cement dust - Ergonomic - Noise	- Injury - Hearing damages - Respiratory Disease - Musculo-skeletal Disorder - Stress	- Induction - Tool box talks - Supervision - PPE - Housekeeping - Safe work platform - Safe access way - Personnel exposure monitoring - CHRA	- OSHA Sec 15 - FMA 24 - FM (SHW) 23 - FM (BOWEC) 86 - FM (SHW) 7	2	1	2	N/A	N/A	N/A	N/A

Civil Work**HAZARD IDENTIFICATION AND RISK ASSESSMENT FORM**

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	Hazard	Effect	Current Risk Control	Legal Requirement	Risk			Actions & Recommendations	PIC	DUE	STATUS
					SEV	PRO	RISK RATING				

SEWERAGE WORKS (Cont'd)											
- Brick works	- Sling snap - Backhoe - mechanical failure - Falling object - Sharp edges / object - Cement chemical - Dust - Ergonomic	- Injury - Dermatitis - Musculo-skeletal Disorder - Eye damages - Respiratory Disease	- Induction - Tool box talks - Supervision - Safe access way / work platform - Housekeeping - Proper PPE - CSDS / CHRA	- OSHA Sec 15 - FMA 24 - FM (SHW) 23 - FM (BOWEC) 86 - FM (SHW) 7	2	1	2	N/A	N/A	N/A	N/A

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IDENTIFY					ASSESS			CONTROL			
Activities/ Process/ Facilities/ Equipment	Hazard	Effect	Current Risk Control	Legal Requirement	Risk			Actions & Recommendations	PIC	DUE	STATUS
					SEV	PRO	RISK RATING				

WATER RETICULATION											
- Establish the station & point	- Trip - Sharp edges	- Injury	- Induction - Tool box talks - Proper PPE - Supervision	- OSHA Sec 15 - FMA 24	2	1	2	N/A	N/A	N/A	N/A
- Trench Excavation	- Existing underground services - Soil collapse - Excavator mechanical failure - Dust	- Fatal - Respiratory Disease - Eye damages	- Induction - Tool box talks - Warning signage's - Safety barricade - Shoring/Safe slope gradient/Approved shoring design - Excavation permit - Competent operator - Inspection & maintenance - Proper PPE	- OSHA Sec 15 - FMA 24 & 26 - FM (SHW) 8 - FM (BOWEC) 112 - FMA 19 - FM (PIC) 19, 20	4	1	4	N/A	N/A	N/A	N/A

Civil Work**HAZARD IDENTIFICATION AND RISK ASSESSMENT FORM**

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Activities/ Process/ Facilities/ Equipment	Hazard	Effect	Current Risk Control	Legal Requirement	Risk			Actions & Recommendations	PIC	DUE	STATUS
					SEV	PRO	RISK RATING				
WATER RETICULATION (Cont'd)											
- Pipe laying	- Sling snap - Falling object - Ergonomic - Heat	- Injury - Musculo-skeletal Disorder - Stress	- Supervision - Tool box talks - Proper stacked - SOP - Drinking water - Proper PPE	- OSHA Sec 15 - FMA 24 - FM (SHW) 20 & 23	2	1	2	N/A	N/A	N/A	N/A
- Pipe connection	- Fume - Heat - Gas cylinder explode - Metal fumes - Ergonomic	- Injury - Fatal - Eye damages - Musculo-skeletal Disorder	- Induction - Toolbox talks - Warning signage's - Safe barricade - Drinking water - Hot Work Permit - Fire extinguisher - Proper PPE	- OSHA Sec 15 - FM (SHW) 8 & 23 - FMA 24	4	1	4	N/A	N/A	N/A	N/A
- Install formwork	- Sharp object - Work platform collapse - Fall from height - Falling object	- Injury	- Induction - Tool box talks - Supervision - Housekeeping - Safe access way - PPE	- OSHA Sec 15 - FMA 24 - FM (SHW) 7	2	1	2	N/A	N/A	N/A	N/A

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Activities/ Process/ Facilities/ Equipment	Hazard	Effect	Current Risk Control	Legal Requirement	Risk			Actions & Recommendations	PIC	DUE	STATUS
					SEV	PRO	RISK RATING				

WATER RETICULATION (Cont'd)											
- Concreting	- Chemical - Dust	- Skin Disease - Respiratory Disease	- Induction - Tool box talks - Personnel exposure monitoring - Housekeeping - Safe access way - PPE	- OSHA Sec 15 - FMA 24 - FM (SHW) 7 - FM (SHW) 23	2	1	2	N/A	N/A	N/A	N/A
- Strike formwork	- Sharp object - Falling object - Work platform collapse - Cement dust - Ergonomic - Noise	- Injury - Hearing damages - Respiratory Disease - Musculo-skeletal disorder - Stress	- Induction - Tool box talks - Supervision - PPE - Housekeeping - Safe work platform - Safe access way - Personnel exposure monitoring - CHRA	- OSHA Sec 15 - FMA 24 - FM (SHW) 23 - FM (BOWEC) 86 - FM (SHW) 7	2	1	2	N/A	N/A	N/A	N/A
- Backfilling	- Soil collapse - Dust	- Injury - Respiratory Disease - Eye damages	- Supervision - Competent operator - Signalman - Inspection & maintenance - PPE	- FMA 19 & 26 - FM (PIC) 19, 20	2	1	2	N/A	N/A	N/A	N/A

Civil Work**HAZARD IDENTIFICATION AND RISK ASSESSMENT FORM**

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 Package EW01 – Site Preparation, Earthworks and Main Drainage.

Date : 01/12/2009

Activities/ Process/ Facilities/ Equipment	IDENTIFY				ASSESS			CONTROL			
	Hazard	Effect	Current Risk Control	Legal Requirement	Risk			Actions & Recommendations	PIC	DUE	STATUS
					SEV	PRO	RISK RATING				

SERVICES RELOCATION – (Water pipe, Telecommunication, Fibre Optic Cable, Gas Pipe, Electrical Cable etc)											
- Establish the station & point	- Trip - Sharp edges	- Injury	- Induction - Tool box talks - Proper PPE - Supervision	- OSHA Sec 15 - FMA 24	2	1	2	N/A	N/A	N/A	N/A
- Piloting Works (Trail Pit)	- Life cables - Sharp edges / object - Heat - Ergonomic	- Fatal - Stress - Musculo-skeletal disorder	- Induction - Drinking water - Tool box talks - SOP - Proper PPE - Supervision	- OSHA Sec 15 - FMA 24 & 26	4	1	4	N/A	N/A	N/A	N/A
- Material delivery to site	- Falling object - Material rolled over - Caught in between	- Injury	- Induction - Tool box talks - Proper stacking - Proper PPE - Supervision	- OSHA Sec 15 - FMA 24 - FM (SHW) 20 & 23	2	1	2	N/A	N/A	N/A	N/A
- Material stockpile	- Falling object - Material rolled over - Caught in between	- Injury	- Supervision - Proper PPE - Housekeeping - Proper stacked	- OSHA Sec 15 - FMA 24 - FM (SHW) 20 & 23	2	1	2	N/A	N/A	N/A	N/A

Civil Work**HAZARD IDENTIFICATION AND RISK ASSESSMENT FORM**

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IDENTIFY					ASSESS			CONTROL			
Activities/ Process/ Facilities/ Equipment	Hazard	Effect	Current Risk Control	Legal Requirement	Risk			Actions & Recommendations	PIC	DUE	STATUS
					SEV	PRO	RISK RATING				

SERVICES RELOCATION – (Water pipe, Telecommunication, Fibre Optic Cable, Gas Pipe, Electrical Cable etc) (Cont'd)											
- Excavation	- Existing underground services - Soil collapse - Excavator machine failure - Dust	- Fatal - Respiratory Disease - Eye damages	- Induction - Tool box talks - Warning signage's - Safety barricade - Shoring/Safe slope gradient/Approved shoring design - Excavation permit - Competent operator - Inspection & maintenance - Excavation Permit - Proper PPE	- OSHA Sec 15 - FMA 24 & 26 - FM (SHW) 8 - FM (BOWEC) 112 - FMA 19 - FM (PIC) 19, 20	4	1	4	N/A	N/A	N/A	N/A
- Installing new utilities	- Sling snap - Falling object - Ergonomic	- Injury - Musculo-skeletal disorder	- Tool box talks - Housekeeping - Proper stacking - Proper pulling mechanism	- OSHA Sec 15 - FMA 24 - FM (SHW) 20 & 23	2	1	2	N/A	N/A	N/A	N/A

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IDENTIFY					ASSESS			CONTROL			
Activities/ Process/ Facilities/ Equipment	Hazard	Effect	Current Risk Control	Legal Requirement	Risk			Actions & Recommendations	PIC	DUE	STATUS
					SEV	PRO	RISK RATING				

SERVICES RELOCATION – (Water pipe, Telecommunication, Fibre Optic Cable, Gas Pipe, Electrical Cable etc) (Cont'd)											
- New utilities connection	- Fume - Heat - Gas cylinder explode - Ergonomic	- Injury - Eye damages - Stress - Respiratory Disease - Musculo-skeletal disorder	- Tool box talks - Warning signage's - Hot Work Permit - Fire extinguisher - Safety barricade - Supervision - Proper PPE	- OSHA Sec 15 - FMA 24 - FM (SHW) 8 & 23	2	1	2	N/A	N/A	N/A	N/A
- Removal old services	- Dust - Sharp object / edges - Electrocution - Ergonomic	- Fatal - Musculo-skeletal disorder - Respiratory Disease	- Supervision - Proper pulling mechanism - Proper PPE - Electric isolation permit	- OSHA Sec 15 - FMA 24 - FM (SHW) 23	4	1	4	N/A	N/A	N/A	N/A
- Backfilling	- Soil collapse - Dust	- Injury - Respiratory Disease - Eye damages	- Supervision - Competent operator - Signaller - Inspection & maintenance - PPE	- FMA 19 & 26 - FM (PIC) 19, 20	2	1	2	N/A	N/A	N/A	N/A

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Activities/ Process/ Facilities/ Equipment	Hazard	Effect	Current Risk Control	Legal Requirement	Risk			Actions & Recommendations	PIC	DUE	STATUS
					SEV	PRO	RISK RATING				
ROAD CROSSING (Existing Road)											
- Erection of road barrier	- Hit by vehicle	- Fatal	- Induction - Tool box talks - Warning signage's - Proper PPE (reflective vest) - Proper traffic management (Flagman + baton) - Supervision	- OSHA Sec 15 - FMA 24 & 26 - FM (SHW) 8 & 29	4	1	4	N/A	N/A	N/A	N/A
- Construction vehicle crossing	- Vehicle collision - Accident	- Fatal	- Induction - Tool box talks - Warning signage's - Proper PPE (reflective vest) - Proper traffic management (Flagman + baton) - Supervision	- OSHA Sec 15 - FMA 24 & 26 - FM (SHW) 8 & 29	4	1	4	N/A	N/A	N/A	N/A

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Activities/ Process/ Facilities/ Equipment	Hazard	Effect	Current Risk Control	Legal Requirement	Risk			Actions & Recommendations	PIC	DUE	STATUS
					SEV	PRO	RISK RATING				
ROAD CROSSING (Existing Road) (Cont'd)											
- Road cleaning / Dust control / Watering	- Vehicle collision - Dust - Heat	- Fatal - Respiratory Disease - Stress	- Tool box talks - Warning signage's - Proper PPE (reflective vest) / Drinking water - Proper traffic management (Flagman + baton) - Supervision - Personnel exposure monitoring	- OSHA Sec 15 - FMA 24 & 26 - FM (SHW) 29	4	1	4	N/A	N/A	N/A	N/A
- Filling water (New Jersey Barrier)	- Hit by vehicle	- Fatal	- Induction - Tool box talks - Warning signage's - Proper PPE (reflective vest) - Proper traffic management (Flagman + baton) - Supervision	- OSHA Sec 15 - FMA 24 & 26 - FM (SHW) 8 & 29	4	1	4	N/A	N/A	N/A	N/A

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Activities/ Process/ Facilities/ Equipment	Hazard	Effect	Current Risk Control	Legal Requirement	Risk			Actions & Recommendations	PIC	DUE	STATUS
					SEV	PRO	RISK RATING				
Lifting and Hoisting (Mobile Crane)											
- Entering to construction site (initial)	- Overturned - Accident - Hit by other vehicles	- Injury - Fatal	- Tool box talks - Safe Work Procedure - Proper PPE - Supervision	- OSHA Sec 15 - FMA 24 & 26	4	1	4	N/A	N/A	N/A	N/A
- Parking Basement (Work Area)	- Overturned	- Injury - Fatal	- Tool box talks - Safe Work Procedure - Proper PPE - Supervision	- OSHA Sec 15 - FMA 24 & 26	4	1	4	N/A	N/A	N/A	N/A
- Extend Outrigger	- Crane Topple	- Injury - Fatal	- Proper padding - Competent operator - Valid PMA - Supervision	- OSHA Sec 15 - FMA 24 & 26	4	1	4	N/A	N/A	N/A	N/A

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Activities/ Process/ Facilities/ Equipment	Hazard	Effect	Current Risk Control	Legal Requirement	Risk			Actions & Recommendations	PIC	DUE	STATUS							
					SEV	PRO	RISK RATING											
Lifting and Hoisting (Mobile Crane) (Cont'd)																		
- Hooking	- Slip wire - Hand nip - Hoist block strike head	- Injury - Fatal	- Inspection on safety latch - Crane inspection - Supervision - Proper PPE	- OSHA Sec 15 - FMA 24 & 26	4	1	4	N/A	N/A	N/A	N/A							
- Strapping wire rope load	- Hand nip - Wire rope damage - Unbalance load	- Injury - Fatal	- Trained rigger - Padding wire rope - Very low trial lift - Crane inspection - Supervision - Proper PPE	- OSHA Sec 15 - FMA 24 & 26	4	1	4	N/A	N/A	N/A	N/A							
- Lifting the load	- Load dropped - Swaying truck - Shackle failure - Sling broken	- Injury - Fatal	- Trained rigger - Shackle balance - Very low trial lift - Crane inspection - Supervision - Proper PPE	- OSHA Sec 15 - FMA 24 & 26	4	1	4	N/A	N/A	N/A	N/A							

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	Hazard	Effect	Current Risk Control	Legal Requirement	Risk			Actions & Recommendations	PIC	DUE	STATUS
					SEV	PRO	RISK RATING				

Lifting and Hoisting (Mobile Crane) (Cont'd)											
- Swing load	- Striking to the nearest object	- Injury - Fatal	- Competence Operator	- OSHA Sec 15 - FMA 24 & 26	4	1	4	N/A	N/A	N/A	N/A
- Lowering the load	- Swaying - Load turning - Injury	- Injury - Fatal	- Barricade the work area - Supervision - PPE	- OSHA Sec 15 - FMA 24 & 26	4	1	4	N/A	N/A	N/A	N/A
- Release the load	- Sling wire struck	- Injury	- Supervision - PPE	- OSHA Sec 15 - FMA 24 & 26	2	1	2	N/A	N/A	N/A	N/A