

Environmental Monitoring Report

2018 2nd Semestral Report
June 2019

PAK: Jamshoro Power Generation Project

Prepared by the Jamshoro Power Company Limited (JPCL), with the assistance of Mott MacDonald Limited (United Kingdom) in joint venture with MM Pakistan (Pvt) Ltd (Pakistan), for the Islamic Republic of Pakistan and the Asian Development Bank (ADB).

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Semi-annual Environment Monitoring Report

July 2018 to December 2018

January 2019

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Abbreviations

Include list of abbreviations used in the report

ADB	Asian Development Bank
EMR	Environmental Monitoring Review
GHCL	Genco Holdings Company Limited
HEI	Harbin Electric International
JPCL	Jamshoro Power Company Limited
JPGP	Jamshoro Power Generation Project
MW	Megawatt
PIU	Project Implementation Unit
PIC	Project Implementation Consultant
PMU	Project Management Unit
SAEMR	Semi - Annual Environmental Monitoring Report

1 INTRODUCTION

1.1 Preamble

1. This report represents the Semi - Annual Environmental Monitoring Report (SAEMR) for Jamshoro Power Generation Project
2. This report is the 8th EMR for the project.

1.2 Headline Information

3. The status of the six remediation lots are as follows:
 - Lot 1 - Rehabilitation of evaporation ponds is complete
 - Lot 2 - Rehabilitation of blowdown effluent channel is complete
 - Lot 3 - Municipal waste disposal site (worker's colony) underway
 - Lot 4 - Hazardous waste disposal and hazardous was facility
 - Lot 5 - Worker's colony sewage treatment plant; design finalised with commencement of construction anticipated in the next reporting period
 - Lot 6 - Remediation of contaminated land has been combined with the main project construction and plans are under early development
4. Minor preparatory works on the 1x660MW coalfired power plant has started and associated temporary construction facilities are in progress.

2 PROJECT DESCRIPTION AND CURRENT ACTIVITIES

2.1 Project Description

5. The Government of Pakistan aims to increase the share of coal-based generation from almost none in 2016 to 15% over the next few years. In support of this initiative Jamshoro Power Company Limited (JPCL) and Genco Holding Company (GENCO), supported by the Asian Development Bank (ADB), is planning a brownfield extension of the Jamshoro Power Station to improve the total plant efficiency and increase the power output. The project is known as the Jamshoro Power Generation Project (JPGP).
6. The project site is approximately 15km northwest of Hyderabad, and about 150km northeast of Karachi in the Sindh Province of Pakistan. The Indus River is about 3.5km east of the power plant site. Currently there are four fossil fuel-fired electricity generating units installed and operating at the site (Unit 1 is oil fired and Units 2 – 4 have dual-fuel capability (oil/gas)).
7. JPGP is proposed to initially comprise of 1x660MW (net) supercritical coal fired power plant with facilities to expand to 2x660MW plants. The project aims to decrease the existing power shortfall in Pakistan and address environmental concerns from the existing oil-fired power units. The new boiler(s) will be designed to utilise imported sub-bituminous coal blended at 80/20 with local lignite as its fuel. This report relates to development of phase 1 only (1x660MW)
8. As part of the feasibility study for the project and as required by the ADB an environmental audit was undertaken of the existing plant. The audit was included as part of the environmental and social impact assessment (ESIA) for the 2x660MW supercritical power plant (Environmental Impact Assessment; Jamshoro Power Generation Project; Hagler Bailly Pakistan, October 29, 2013 (the ESIA report)). Section 6 of the ESIA report (Issues Related to Existing Plant and

Corrective Actions) identified several items related to the existing plant that require remediation or rehabilitation.

9. The items that were identified are subject to a loan condition applied by ADB that requires the identified remediation works to have a signed contract in place prior to commencement of works on the site associated with the new facility (660MW supercritical power plant).
10. The rehabilitation and remediation items were split into six lots. These lots are:
 - Lot 1 – Rehabilitation of evaporation ponds
 - Lot 2 – Rehabilitation of blowdown effluent channel
 - Lot 3 - Municipal waste disposal site (worker's colony)
 - Lot 4 - Hazardous waste disposal and hazardous was facility
 - Lot 5 - Worker's colony sewage treatment plant
 - Lot 6 - Remediation of contaminated land

2.2 Project Contracts and Management

11. Table 1 provides details of the main organisations involved in the project and relating to Environmental Safeguards.

Table 1: Main organisations

Role	Organisation	Environmental lead	Contact details
Lender	Asian Development Bank	Safia Shafiq	sshafiq.consultant@adb.org
Borrower	Jamshoro Power Station Company	A A Memon	aamemon60@yahoo.com / ceo@jpcl.com.pk
PIU	Jamshoro Power Station Company	A A Memon	aamemon60@yahoo.com / pdpiu@jpcl.com.pk
PIC	Mott MacDonald Ltd	Gordon Clamp	gordon.clamp@mottmac.com ma.shishmahal@mmpakistan.com

		Muhammed Ali Shishmahal	
Main contractors			
Rehabilitation Lot 3 (municipal waste disposal site for worker's colony)	MAJ & ICC Joint Venture	Safar Korai	msafarkorai@gmail.com / majiccjv@gmail.com
Rehabilitation Lot 4 (Hazardous waste disposal and construction of hazardous waste disposal site)	ATL – GPL Consortium	Wajahat Nadeem	Wajahatnadeem@geolinks.com.pk / atl.jpclproject@gmail.com
Rehabilitation Lot 5 (Worker's colony sewage treatment plant)	Hebei Installation Engineering	LIU GANG	913498496@qq.com / hebeiinstallation@outlook.com
Rehabilitation Lot 6 (Remediation of contaminated land)	Contract to be under the main build. Contractor to be appointed by HEI-Siemens consortium		
1x600MW coalfired plant construction and operation	HEI-Siemens consortium	Jin Gangzhu	jingagnzhu@china.hei.com / jamshoro@china-hei.com

12. Supervision is being carried out by the Project Implementation Unit (PIU) and Jamshoro Power Company Limited (JPCL) is assisted by the Project Implementation Consultant (PIC) for all the technical and commercial matters.

13. Project Management Unit (PMU) and Project Implementation Unit (PIU) will ensure that the mitigation and management measures proposed in the EIA are properly implemented. The top management of JPCL and Genco Holdings Company Limited (GHCL) will ultimately head the PIU and PMU. For this purpose, JPCL and GHCL will develop internal institutional capacity for environmental management.

2.3 Project Activities During Current Reporting Period

14. During the reporting period, July to December 2018, the status of the work packages was as follows:

- Lot 1 Rehabilitation of evaporation ponds was completed
- Lot 2 Rehabilitation of blow-down effluent channel was completed (see photographs in Annex A)
- Lot 3 Municipal waste disposal site development was on hold while lining material specification was agreed
- Lot 4 Hazardous waste removal and construction of hazardous waste facility commenced. Hazardous waste deposited across the existing thermal plant site was surveyed, characterised and quantified. Discussions on final size/capacity of the hazardous disposal facility are ongoing as the quantity of hazardous waste identified was larger than originally estimated. Excavations for the hazardous waste facility commenced (see photographs in Annex A)
- Lot 5 Domestic sewage treatment for worker's colony; final design has been submitted for review and approval. Construction is anticipated to commence during the next reporting period
- Lot 6 Remediation of contaminated land was combined with the main plant development contract. Details of the approach to the remediation are being worked up. No works have commenced and there is nothing to report with respect to Environmental Safeguards at this time
- The contractor (HEI) for the main contract (construction of 1x600MW coal fired power plant) mobilised to site toward the end of the reporting period. Minor preparatory work had commenced and there is nothing to report with respect to environmental safeguards at this time.

15. The approximate locations of the activities reported above are shown in Figure 1.

16. The maximum numbers of workers on site for the rehabilitation lots during the reporting period are shown in Table 2.

Table 2: Worker numbers (maximum) during reporting period

S.No	Site Remediation Lots	Present No. of workers
1.	Lot 1 - Rehabilitation of evaporation ponds	5
2.	Lot 2 – Rehabilitation of blowdown effluent channel	5
3.	Lot 3 - Municipal waste disposal site (worker's colony)	5
4.	Lot 4 - Hazardous waste disposal and hazardous was facility	11
5.	Lot 5 - Worker's colony sewage treatment plant	25

17. It should be noted that the numbers of workers on site is low which reflects the relatively small scale of the construction activities associated with the remediation lots (lots 1 to 6).

2.4 Description of Any Changes to Project Design

18. The final capacity of the hazardous waste facility (lot 4) is under discussion but it is not anticipated that amending the capacity of the facility will constitute a significant change with respect to the environmental safeguards.

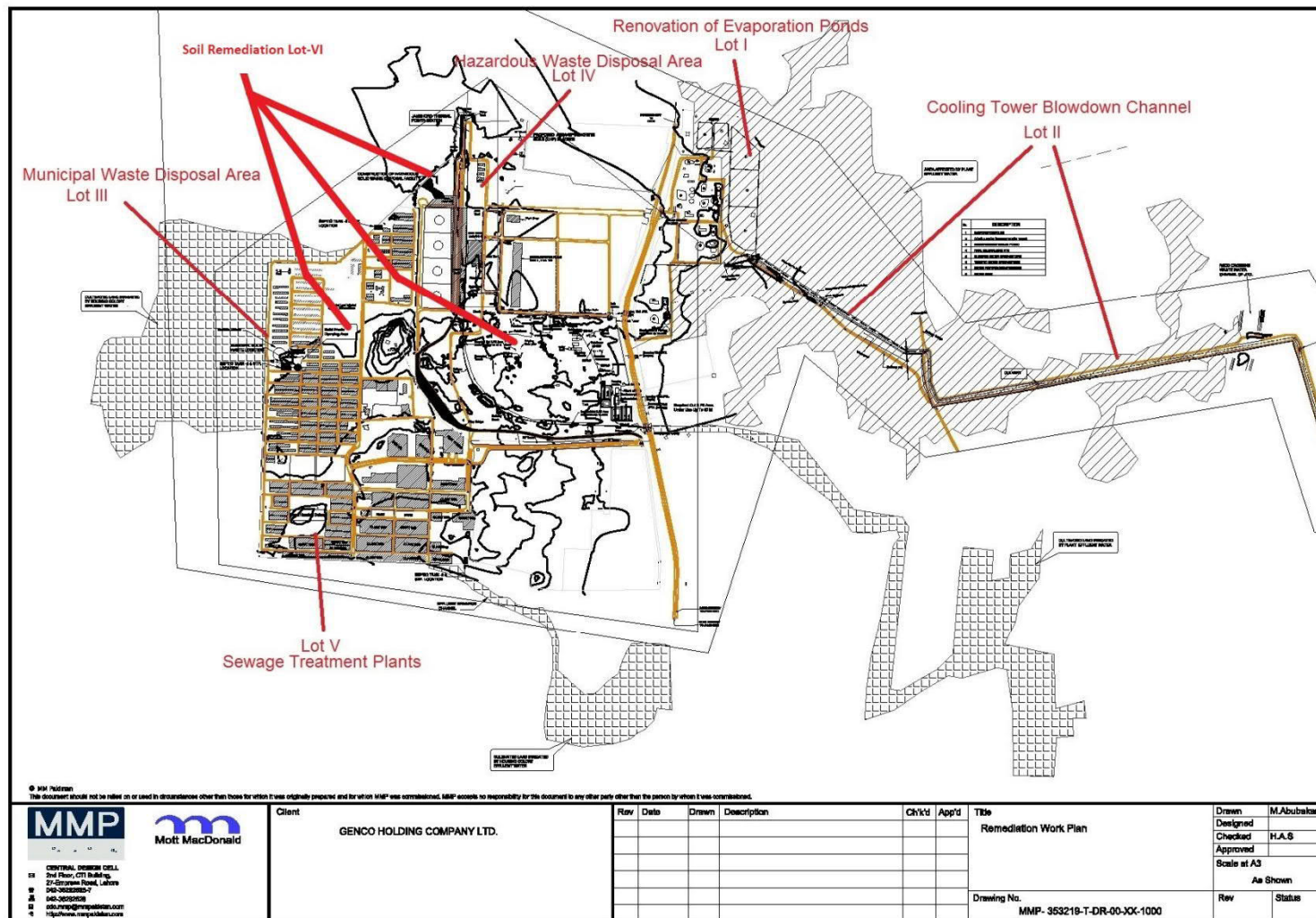
19. No changes to the design of the 1x600MW coalfired power plant have been confirmed. Some design items are under discussion including:

- Reduction in stack flue gas temperature by not using gas to gas heating. A tube bundle de-dust and de-mist device and wet stack operation is proposed which is claimed to perform better than the proposed wet ESP and consumes less electricity and water and has lower maintenance costs. The proposed change is being evaluated by PIC.
- Change in the rail car dumper configuration and relocation of rail car dumper. The proposed change would reduce the buffer zone between the railway line and the residential colony.

2.5 Description of Any Changes to Agreed Construction methods

20. No changes to construction methods for the 1x600MW coalfired power plant have been confirmed. It is understood that limited blasting will be proposed for some foundation works; more details will be provided in the next SAEMR.

Figure 1: Rehabilitation/remediation Lots 1 to 6



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3 ENVIRONMENTAL SAFEGUARD ACTIVITIES

3.1 General Description of Environmental Safeguard Activities

21. The contractor for each rehabilitation/remediation lot has responsibility for ensuring compliance with the requirements of the construction environmental management plan for their work area.
22. PIC has undertaken audits on active lots.

3.2 Site Audits

23. Environmental safeguard audits were undertaken by the PIC during the reporting period. Details are provided in Table 3.

Table 3: Environmental safeguard audits

Work package (lot number)	Audit date	Auditor/auditing body	Findings	Report reference
Lot 3 - Municipal waste disposal site	18 July 2018	M A Shishmahal/ PIC	Advisory actions related to: <ul style="list-style-type: none"> Grievance mechanism reporting Installation of groundwater monitoring wells Correct installation of wells Tree plantation plan to be submitted. Explanation of coliform test result of 08 CFU (in breach of 00 CFU WHO standard Reported occurrence of high-grade fever as work related illness 	Annex B
Lot 4 - Hazardous waste disposal and hazardous was facility	31 July 2018	M A Shishmahal/ PIC	<ul style="list-style-type: none"> MSDS for hazardous material should be available. Impervious flooring or drip trays underneath hazardous material Spill kits required Proof of dust suppression activities needed 	Annex C

			<ul style="list-style-type: none">• Waste storage drums colour coded for different waste streams.• Grievance redress register should be available	
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3.3 Issues Tracking (Based on Non-Conformance Notices)

24. No non-conformance notices issued during this reporting period.

3.4 Trends

25. No non-conformance notices issued during this reporting period. No trends to report

3.5 Unanticipated Environmental Impacts or Risks

26. No unanticipated environmental impacts or risks occurred during the reporting period.

4 RESULTS OF ENVIRONMENTAL MONITORING

4.1 Overview of Monitoring Conducted during Current Period

27. During the reporting period (July to December 2018) the following work packages were in progress:

- Lot 3 - Municipal solid waste disposal facility
- Lot 4 - Construction of hazardous solid waste facilities

28. Lot 3 was awarded to a consortium of Main Abdul Jabbar & Co and Indus Construction Co (MAJ ICC). A CEMP has been developed for Lot 3. Monitoring of environmental parameters for Lot 3 are summarised in this report. The monitoring report for Lot 3 prepared by MAJ ICC is attached as Annex B.

29. Lot 4 was awarded to ATL-GPL consortium and the contract signed. Work has commenced on site and a CEMP has been prepared by the contractor. The monitoring report for Lot 4 prepared by ATL-GPL is attached as Annex C.

4.1.1 Lot 3 – Municipal solid waste disposal facility

30. Information reported here is extracted from the contractor's (MAJ-IIC) Semi-Annual Environmental Monitoring Report; Project Site Remediation Package (Lot 3). July 2018 – December 2018. The monitoring report prepared by MAJICC is attached as Annex B.

31. During the reporting period there was no construction activity while the specification of lining material (bentonite) was researched and agreed. The following activities were progressed during the monitoring period:

- Community waste management awareness programme in the workers colony continues.
- A grievance redress mechanism has been established and is presented as Annexure 1 in the Lot 3 Semi Annual Monitoring Report which is in Annex B

32. Because no construction activities have been undertaken during the monitoring period no environmental monitoring for air quality or noise has been undertaken.
33. Drinking water quality is analysed and it is reported that 'clean and fresh water is provided to every worker'. No data was provided.
34. No grievances were received during the monitoring period
35. Health and safety statistics are recorded; no incidents were reported.
36. Registers of attendance at toolbox talks are presented in the environmental monitoring report. A total of 4 toolbox talks are reported.
37. No environmental incidents were reported during the monitoring period
38. Activity during next reporting period
39. During the next reporting period MAJICC state that they will undertake the following tasks:
 - Installation of dustbins
 - Collection of MSW
 - Transportation of MSW
 - Segregation of MSW at site
 - Drinking and ground water quality monitoring
 - Air quality monitoring
 - Noise pollution assessment during excavation work

4.1.2 Lot 4 – Construction of hazardous solid waste facility

40. Information reported here is extracted from the contractor's (ATL-GPL) Bi-Annual Report 2018. The monitoring report is attached as Annex C.
41. During the reporting period the monitoring activities and approaches presented in Table 4 have been undertaken:

Table 4: Lot 4 environmental monitoring

Sr. No.	Monitoring and management parameters	July to December
1.	Ambient air quality	Visual inspection/hand held meter
2.	Traffic safety	Implemented and monitored
3.	Soil investigation	Conducted and submitted
4.	Waste management	Implemented SOPs and monitored
5.	Health and safety management	Implemented and monitored

42. An example of a check list is provided. The checklist covers health, safety and environment issues. There is no indication of the frequency or location of the monitoring.

43. ambient air quality monitoring data was provided December 2018 (included in Annex C). Data was collected using a hand-held survey meter for an unspecified time period. It is not appropriate to compare the data against any legislative standard or guidance without further details of the monitoring exercise. ATL-GPL will be asked to provide further information and to improve monitoring techniques.

44. An early incident of fugitive dust from excavation activities was observed and brought to the attention of ATL-GPL who rectified the issue by water spray (see Photo 8 and Photo 9 in Annex A3).

45. Health and safety data are recorded. Two near misses were recorded during the monitoring period; no details are given.

4.2 Trends

46. Given the low level of activity and paucity of data no trends are reported

4.3 Summary of Monitoring Outcomes

47. For Lot 3 MAJ-IIC are advised to resume more detailed monitoring when construction activities recommence

48. For Lot 4 ATL-GPL are advised to provide more detailed monitoring data. This can include visual monitoring data as evidenced by the

checklist which should be used daily and results summarised monthly or quarterly.

4.4 Material Resources Utilisation

4.4.1 Current Period

49. No data available

50. Contractors will be instructed to provide data on fuel, electricity and water use.

4.4.2 Cumulative Resource Utilisation

51. No data available

4.5 Waste Management

52. No data available

53. Contractors will be instructed to provide data

4.5.1 Current Period

54. No data available

4.5.2 Cumulative Waste Generation

55. No data available

4.6 Health and Safety

4.6.1 Community Health and Safety

56. No community health and safety issues were reported during the monitoring period

4.6.2 Worker Safety and Health

57. Lot 3 contractor, MAJ-IIC, reported no worker health and safety incidents during the reporting period

58. Lot 4 contractor, ATL-GPL, recorded two near misses during the monitoring period; no details are given.

59. Lot 3 and lot 4 contractors undertake tool box talks.

4.7 Training

- 60. No specific environmental safeguard training is reported
- 61. The contractors currently working on site and all future contractors will be advised of the need to undertake training specific to the environmental safeguards.

5 FUNCTIONING OF THE SEMP

5.1 SEMP Review

- 62. Lots 3 mainly involves excavation and material handling and as such potential impacts are easily controlled by the use of correct equipment and management techniques.
- 63. Lot 4 currently mainly involves excavation and material handling and as such potential impacts are easily controlled by the use of correct equipment and management techniques.
- 64. Lot 4 will later involve handling of hazardous waste (boiler soot). Appropriate handling techniques and control of fugitive emissions are to be used
- 65. Lot 4 will later involve handling asbestos. ATL-GPL has experience handling asbestos and has HSE process in place to handle the asbestos appropriately.
- 66. When it commences asbestos handling will be closely monitored.
- 67. The SEMP (termed the CEMP in these projects) and procedures in place are functioning appropriately.

6 GOOD PRACTICE AND OPPORTUNITY FOR IMPROVEMENT

6.1 Good Practice

68. The current work lots are following standard good practice for excavation and material handling.

6.2 Opportunities for Improvement

69. The current work lots are following standard good practice for excavation and material handling and improvement is not needed at this stage.

70. Monitoring of future activities for lot 4 (hazardous waste and asbestos) will identify opportunities for improvements as necessary.

7 SUMMARY AND RECOMMENDATIONS

7.1 Summary

- 71. This is the 8th monitoring report for the Jamshoro Power Generation Project.
- 72. To date construction activities have been related to four of the six rehabilitation/remediation projects required to be completed as a condition of the loan for the 1x620MW JPGP.
- 73. The projects have mainly involved excavation and material handling with some minor construction activities, and as such the potential for impacts have been small.
- 74. The Environmental Safeguards have been adequately implemented

7.2 Recommendations

- 75. At this stage there are no recommendations for consideration by the ADB for changes to the Environmental Safeguarding process for the project.

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A. Photographs (with date printed)

A.1 Progress and General Photos; Lot 2

Photo 1: Turnover conditions associated with Lot 2



Source: Mott Field Office Files

Photo 2: Turnover conditions associated with Lot 2



Source: Mott Field Office Files

Photo 3: Turnover conditions associated with Lot 2



Source: Mott Field Office Files

Photo 4: Turnover conditions associated with Lot 2



Source: Mott Field Office Files

Photo 5: Turnover conditions associated with Lot 2



Source: Mott Field Office Files

Photo 6: Turnover conditions associated with Lot 2



Source: Mott Field Office Files

A.2 Progress and General Photos; Lot 3

No site work accomplished during reporting period

A.3 Progress and General Photos; Lot 4

Photo 7: Start of excavation (20 November 2018)



Source: Mott Field Office Files

Photo 8: Start of excavation, fugitive dust violations and no ambient air quality monitoring (20 November 2018)



Source: Mott Field Office Files

Photo 9: Excavation post PIC observation and corrective actions by contractor, (21 November 2018)



Source: Mott Field Office Files

Photo 10: General field conditions associated with excavation activities



Source: Mott Field Office Files

Photo 11: General field conditions associated with excavation activities



Source: Mott Field Office Files

Photo 12: General field conditions associated with excavation activities



Source: Mott Field Office Files

Photo 13: General field conditions associated with excavation activities



Source: Mott Field Office Files

Photo 14: General field conditions associated with excavation activities



Source: Mott Field Office Files

B. Lot 3 contractor monitoring report

Jamshoro Power Company Limited



Semi-Annual Environmental Progress Report

Project Site Remediation Package (Lot-III)

2 X 660 MW Coal Fired Power Project Jamshoro

July to December 2018



Semi-Annual Environmental Progress Report

Project Site Remediation Package (Lot-III)

2 X 660 MW Coal Fired Power Project Jamshoro

From July to December 2018

Issue and revision record

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A	December, 2018	Engr Muhammad Safar Korai Engr. Khan Muhammad Rajar	Engr. Abdul Jabbar	Engr. Abdul Jabbar	Submission

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Abbreviations

ADB	Asian Development Bank
GOP	Government of Pakistan
ICC	Indus Construction Company
JPCL	Jamshoro Power Company Limited
JTPS	Jamshoro Thermal Power Station
MAJ	Main Abdul Jabbar
MSW	Municipal Solid Waste
GRE	Grievance Redress Mechanism
WHO	World Health Organization
PIC	Project Implementation consultant
HSE	Health, Safety and Environment

1. Introduction

1.1. General Information About the Back Ground of Project

The Government of Pakistan (GoP) is planning to set up a super-critical coal fired power plant at Jamshoro (the 'Jamshoro Power Generation Project' or the 'Project') to be financed by the Asian Development Bank (ADB). The power plant will be setup within the premises of the existing Jamshoro Thermal Power Station (JTPS). The gross generation capacity of the Project will be 660 MW in the First Stage and 1,320 MW after expansion. The plant will be owned and operated by the Jamshoro Power Company Limited (JPCL), the implementing agency of the Project.

The JTPS staff housing colony generates an estimated 750 ¹tons of solid waste annually. As there is no proper disposal system, the waste is scattered around the colony. There is currently no solid waste management system in place at the power plant either to manage waste generated in the plant offices. The waste dumps can be seen in different location of the plant and the colony. There is no municipal solid waste disposal facility available in the vicinity of the plant where the waste can be sent for disposal. Aspects resulting from improper solid waste management are:

- Contamination of surface and sub-surface soil by leaching from the dumps
- Contamination of surface water in case of runoff
- Transportation of contamination from leaching to the ground water aquifer
- Possible attraction of scavengers to the solid waste dumps
- Attraction of pests to the waste dumps resulting in spread of disease vectors
- General nuisance and odor.

To overcome these issues, the mitigation measures are required which include:

¹ Environmental Impact Assessment of Jamshoro Generation Project by Hagler Bailly Pakistan 2013

- Collection of waste on daily basis from the colony houses and office premises of the plant
- Placement of bins in the key area with proper labelling for the type of waste to be thrown in the bin and segregation of waste
- Awareness campaigns on municipal waste management including segregation, reuse and recycling
- A properly designed landfill to cater for the plant needs will be developed.

1.2. Project Location

The JTPS is located north of Jamshoro town in the Jamshoro district of Sindh province, Pakistan. The power plant is about 10 kilometer (km) northwest of Hyderabad and about 150 km northeast of Karachi. It is located on N-55, also known as Indus Highway. N-55 is one of the two main highways of the country which connect Karachi, the main port and industrial hub of the country, with the rest of the country.

1.3. Employer (Client)

- Jamshoro Power Company Limited (JPCL), the implementing agency (IA) of the Project.
- GENCO Holding Company Limited (GHCL), the parent company of JPCL will be the executing agency (EA).

1.4. Engineer (Consultants)

- Mott MacDonald Ltd in association with MM Pakistan Pvt Limited (The Project Implementation Consultant)

1.5. Contractor

- M/S MAJ-ICC (JV) Bungalow No.C-20, Qasimabad, Hyderabad, Sindh, Pakistan

2. Activities that Have Been Undertaken During The Reporting Period

Following activities have been performed from July to December 2018.

➤ Awareness program

All these are discussed as under:

2.1. Awareness Program

Raising awareness about municipal solid waste management is a critical component of effective waste management. It is important for key stakeholders to be aware of a city's waste management activities and have a strong understanding of the benefits of proper solid waste management. Following are the main objectives of awareness program.

- To motivate the local people to practice 3Rs (Reduce, Reuse and recycle)
- To develop the sense of commitment among people to protect the environment
- To imbibe among people the essence of environmental values and ethics and live in harmony with nature a God's gift.

Awareness program regarding proper management of MSW was initiated among the residents of the colony.

2.2. Grievance Redress Mechanism (GRM)

Following proposed mechanism for grievance redress has been established.

The maintenance of register by sub-contractor in order to log grievances

Resolve grievances at their level and record in monthly, quarterly, six monthly and yearly reports mentioning how many grievances received, resolved and the ones still

remaining. The grievance procedure, grievance form and grievance log are given in annexure-I, II and III respectively.

2.2.1. Record of grievances during reporting period

During reporting period from July to December 2018, no any grievance has been received.

2.3. HSE Statistics

As defined by the World Health Organization (WHO) "occupational health deals with all aspects of health and safety in the workplace and has a strong focus on primary prevention of hazards. The health has been defined as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. Occupational health is a multidisciplinary field of healthcare concerned with enabling an individual to undertake their occupation, in the way that causes least harm to their health. Health has been defined as it contrasts, for example, with the promotion of health and safety at work, which is concerned with preventing harm from any incidental hazards, arising in the workplace. The safety statistics and Daily safe man hours are given in Table 1. Employee training is essential for an organization's success. Despite the importance of training, a trainer can encounter resistance from both employees and managers. Both groups may claim that training is taking them away from their work. However, a trainer can combat this by demonstrating that training is actually a *crucial* part of employees' and managers' work. Training is crucial because as it educates workers about the effective use of technology, ensures competitive edge in the market, promotes safety and health among employees, creates opportunities for career development and personal growth, helps employers comply with laws and improves productivity and profitability. Table 2 represents the HSE training photos.

Table 1. Safety Statistics, July to December-2018

S.No	KEY PERFORMANCE INDICATOR (KPI)	Monthly Statistics
1	Total number of workers	12
2	Man – Hours worked	25
3	Total number of lost Time Incidents(LTI)	0
4	Total hours lost due to LTI	0
5	Total number of First Aid Cases (FAC)	0
6	Total number of Near Misses	0
7	Number of workers trained(attach training records)	5
8	Number of Tool box talk conducted	6
9	Number of HSE audits conducted	In this time no HSE audits occurred.
10	Total number of trees up rooted	In this time no trees up rooted.
11	Total number of HSE photos attached in the report	
12	Number of times/ quantity noise monitoring conducted	By visually inspection, there was no highly noise occurred at site.
13	Number of days water sprinkling carried out	As per site condition
14	Total number of environmental incidents	0
15	Total number of Corrective Action Reports (CARs)	N/A
16	Numbers of CARs still open	N/A
17	Number of Cars Closed	N/A

Table 2. HSE Training photos



2.4. Water Quality Analysis

Drinking and ground water quality were analysed as discussed below.

2.4.1. Drinking Water Quality

Water is one of the most essential elements to health and is so important that human body actually has a specific drought management system in place to prevent dehydration and ensure survival. Water might be everywhere, but one must never take it for granted. Water makes up more than two thirds of human body weight, and

without water, we would die in a few days. The human brain is made up of 95% water, blood is 82% and lungs 90%. Water serves as a lubricant in digestion and almost all other body processes. Our bodies can control over-heating through perspiration from sweat glands in the skin and from evaporation which produces a cooling effect. Blood is also routed into areas close to the surface of the skin where it can be cooled and then carried back to the interior of the body. Conversely in a cold environment, the skin maintains proper body temperature by shunting the blood away from the exterior surface thereby conserving heat within the body. The movement of water within our cellular systems also transports vital blood plasma which is 92% made of water. Blood plasma play a critical role in buffering the body's pH, circulating antibodies from the immune system, and regulating osmotic balance which all helps to maintain proper body temperature. In this regard, drinking water quality was analysed in order to meet international as well as national standard and World Health Organization (WHO) guidelines. At site, clean and fresh water is provided to every worker.

3. Copies of All Environmental Monitoring Data And Checklists

Following figures represent the copies of all environmental monitoring data and checklist respectively.

MAJ M/S MAJ & ICC (J.V) ICC
GOVERNMENT CONTRACTOR & ENGINEERS

Date: 9/7/2018 Daily Tool Box Talk/HSE Training Form

Tool Box Talk:

Detail: Construction of Landfill at Lot-III

S.No	Name	Designation	Available Status P/A	Signature
1	Habibullah	Site Supervisor	P	Habib
2	Amir Ali	Helper Supervisor	P	Amir
3	Rasool Bux	Peon	P	Rasool
4	M. Hanif	Mason	P	M. Hanif
5	Chandee	Laborer	P	Chandee
6	Abdul	Laborer	P	Abdul
7	Nazim	Laborer	P	Nazim
8	Mansoor	Driver	P	Mansoor
9	Ali Akbar	Tractor Driver	P	Ali Akbar
10	Farooq	Laborer	P	Farooq
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
Total Number of Attendants				10

Delivered By: Khan Muhammad (HSE)

Signature By: Khan Muhammad

MAJ M/S MAJ & ICC (J.V) ICC
GOVERNMENT CONTRACTOR & ENGINEERS

Date: 6/8/2018 Daily Tool Box Talk/HSE Training Form

Tool Box Talk:

Detail: Construction of Landfill at Lot-III

S.No	Name	Designation	Available Status P/A	Signature
1	Chandee	Laborer	P	Chandee
2	Mansoor	Deep Driver	P	Mansoor
3	Abdul	Laborer	P	Abdul
4	Nazim	Laborer	P	Nazim
5	Habibullah	Site Supervisor	P	Habib
6	Ali Akbar	Driver	P	Ali Akbar
7	Amir Ali	H- Supervisor	P	Amir
8	Uzair	Laborer	P	Uzair
9	Farooq	Laborer	P	Farooq
10	Habibullah	Site Supervisor	P	Habib
11	M. Hanif	Mason	P	M. Hanif
12	Ali Akbar	Driver	P	Ali Akbar
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
Total Number of Attendants				12

Delivered By: Khan Muhammad (HSE)

Signature By: Khan Muhammad

MAJ M/S MAJ & ICC (J.V) ICC
GOVERNMENT CONTRACTOR & ENGINEERS

Date: 4/7/2018 Daily Tool Box Talk/HSE Training Form

Tool Box Talk:

Detail: Construction of Landfill at Lot-III

S.No	Name	Designation	Available Status P/A	Signature
1	Ali Akbar	Driver	P	Ali Akbar
2	Habibullah	Site Supervisor	P	Habib
3	Mansoor	Deep Driver	P	Mansoor
4	Amir Ali	H- Supervisor	P	Amir
5	Ali Akbar	Driver	P	Ali Akbar
6	Chandee	Mason	P	Chandee
7	Chandee	Laborer	P	Chandee
8	Abdul	Laborer	P	Abdul
9	Amir	Laborer	P	Amir
10	Ali	Laborer	P	Ali
11	Nazim	Laborer	P	Nazim
12	Farooq	Laborer	P	Farooq
13	M. Hanif	Mason	P	M. Hanif
14	Farooq	Laborer	P	Farooq
15	Rasool Bux	Peon	P	Rasool
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
Total Number of Attendants				15

Delivered By: Khan Muhammad (HSE)

Signature By: Khan Muhammad

MAJ M/S MAJ & ICC (J.V) ICC
GOVERNMENT CONTRACTOR & ENGINEERS

Date: 5/11/2018 Daily Tool Box Talk/HSE Training Form

Tool Box Talk:

Detail: Construction of Landfill at Lot-III

S.No	Name	Designation	Available Status P/A	Signature
1	Habibullah	Site Supervisor	P	Habib
2	Ali Akbar	Driver	P	Ali Akbar
3	Amir Ali	H- Supervisor	P	Amir
4	Farooq	Laborer	P	Farooq
5	Farooq	Laborer	P	Farooq
6	Ali Akbar	Driver	P	Ali Akbar
7	Rasool Bux	Peon	P	Rasool
8	M. Hanif	Mason	P	M. Hanif
9				
10				
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26				
27				
28				
29				
30				
Total Number of Attendants				8

Delivered By: Khan Muhammad (HSE)

Signature By: Khan Muhammad

Fig.1. Environmental Checklist-I

4. Detail of Any Environmental Incidents During The Reporting Period

Until no any environmental incident like spills, excessive emissions to atmosphere, water quality contamination have been determined. Each and every thing is smoothly going on. At site pure drinking water is provided to all workers. At site, all workers are satisfied and environment friendly atmosphere is provided.

5. Any Other Documents and Relevant Data

At this stage, there is no any other documents and data relevant to the environmental and social management of the project.

6. Conclusions and Action Plan For The Next Period

6.1. Conclusions and Recommendations

During the reporting period, it has been concluded that project activities are environment smoothly going. Until no any unpleasant event has been occurred. Awareness program has been finalized and it was observed that residents of the colony are very much interested in proper waste management system. Drinking water quality assessment show that water quality parameters were within the range of WHO guidelines for water quality parameters.

6.2. Action Plan For The Next Period

Following activities would be performed during the next reporting period

- Instalment of dustbins
- Collection of MSW
- Transportation of MSW
- Segregation of MSW at site

- Drinking and ground water quality monitoring
- Air quality monitoring
- Noise pollution assessment during excavation work

ANNEXURE-I

GRIEVANCE PROCEDURE

A grievance is defined as an act, omission or occurrence which a permanent employee feels constitutes an injustice and can be established on factual information. It may relate to any condition arising out of the relationship between an employer and an employee, including but not limited to, compensation, working hours, working conditions, membership in an organization of employees or the interpretation of any law, regulation or disagreement. It does not include position allocation, involuntary transfers, dismissals, demotions, or suspensions.

Instructions for All Parties (Employee and Management)

1. All parties may consult with and receive the assistance of their department personnel offices or the Division of Human Resource Management in resolving a grievance.
2. A formal grievance must be filed within 20 working days following origin of the grievance or the date an employee who feels aggrieved learns of the problem unless it is related to a contested report on performance. **Every effort should be made to resolve the grievance by informal discussion during this 20-day period.**
3. If a grievance relates to a contested report on performance, an employee must file a grievance identifying the points of contention within 10 working days after:
 - The date the employee receives a decision regarding a review conducted by the appointing authority; or
 - The employee fails to receive a decision by the response due date regarding a review conducted by the appointing authority.

Instructions for The Employee Submitting A Grievance (Grievant)

1. When a formal grievance is filed, all the information requested on the form **must** be provided. The description of the grievance should include the names of other persons involved in the act, omission or occurrence.
2. The normal course of action in the grievance procedure is as follows:

Step 1: File with Immediate Supervisor - If not resolved within 10 working days, take next step.

Step 2: File with Division Head - If not resolved within 10 working days, take next step.



Step 3: File with Department Head - If not resolved within 10 working days, take next step.

Step 4: File with Employee-Management Committee - Within 45 working days of receipt of the request.

Resolution conference: After a grievance has been submitted at Step 4, either the grievant or the agency may choose to request a resolution conference; if requested, participation is mandatory. A resolution conference is an informal meeting between the parties with the assistance of a neutral facilitator, provided by the Division of Human Resource Management, who is not affiliated with either of the parties. The resolution conference option provides an additional opportunity for a grievance issue to be discussed and for possible solutions to be considered. If the Employee-Management Committee has notified the parties of consideration of the date on which it will hold a hearing to consider the grievance, the request for a resolution conference may not be submitted less than 15 working days before that date.

3. Following receipt of notification of action at steps 1-3, the grievant has 10 working days to refer the grievance to the next step unless the time limit is extended by agreement of the parties. A grievance may be submitted to the next level if the grievant has not received notification within the 10 working day period in which such action is required. The respondent, at each step, retains the documentation received from the grievant. The grievant is responsible for maintaining copies of the documentation he or she provided for his or her records and for filing at the next step in the grievance procedure, **including attaching all previous responses** when submitting the grievance to the next step.

ANNEXURE-II

 MAJ M/S MAJ & ICC (J.V) GOVERNMENT CONTRACTOR & ENGINEERS		Site Remediation Contract for LOT-III (Construction of Municipal Solid Waste Disposal Facility Jamshoro 2x 660 MW Coal Plant) Jamshoro Power Company Ltd			
FORMAL GRIEVANCE THIS FORM MUST BE COMPLETELY FILLED OUT					
Name of Grievant(Please Print): JAN 2018 TO JUNE 2018 Job Title: None Date of Hire:			Work Phone: Home Phone: N/A Send documents to external representative		
Home Mailling Address: Street or P.O Box: City: State: N/A Zip:			Work Mailing Address: Dept: Div/Section: Street or P.O.Box: City: State: N/A Zip:		
Date,time and place of event leading to grievance: N/A			Date you became aware of the event,(if different):		
Detail description of grievance including names of other persons involved, if any: N/A					
Applicable section of NRS and NAC (Grievance must identify all statutes/regulations pertinent to this grievanceif submitted to Employee Management Committee If none, please so indicate): N/A					
Proposed solution to grievance: N/A					
Grievant: File a copy of this form with your immediate supervisor and retain a copy for filling at the next step or steps (see instructions on page 2 for a description of who to file with for steps 1 through 4) If necessary. If you do not receive a response within 10 working days or disagree with the action taken, you may file a copy of the grievance at the next step.					
Step	Grievance Filed with(please print Name)	Date	Grievant's Signature	Date	
1					
2					
3					
4					

*NOT APPLICABLE

ANNEXURE-III



Site Remediation Contract for Lot-III.
Construction of Municipal Solid Waste Disposal Facility Jamshoro 2x 660 MW Coal Plant

GRIEVANCE LOG

Sr.No.	Date	Complaint	Contact	Nature	Complain Details	Action Resolve	Close out Date	Received by
1	9/7/2018	No Complain	-	-	-	-	-	-
2	17-7-2018	No Complain	-	-	-	-	-	-
3	13-8-2018	No Complain	-	-	-	-	-	-
4	28-8-2018	No Complain	-	-	-	-	-	-
5	22-9-2018	No Complain	-	-	-	-	-	-
6	26-9-2018	No Complain	-	-	-	-	-	-
7	5/10/2018	No Complain	-	-	-	-	-	-
8	29-10-2018	No Complain	-	-	-	-	-	-
9	5/11/2018	No Complain	-	-	-	-	-	-
10	11/12/2018	No Complain	-	-	-	-	-	-

C. Lot 4 contractor monitoring report



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ATL-GPL/S.N/222.7/18/141

Dated: 9-1-2019

Project Manager

Mott Macdonald Limited,
Site Office,
Admin Building-Ground Floor,
TPS, Jamshoro,
Phone: 022-9213743

PROJECT : CONSTRUCTION OF HAZARDOUS SOLID WASTE DISPOSAL FACILITY AND
ASSOCIATED CIVIL WORKS PROJECT FOR JAMSHORO POWER COMPANY LIMITED
(BID NO. ADB-L30900-PACKICBJPGP001-3)

SUBJECT : BI-ANNUAL REPORT 2018.

Dear Sir,

With reference to the subject matter, Please find enclose herewith our Bi-Annual report 2018 based on environment.

Best regards,

Yours faithfully,
For: Al-Tariq Constructors (Pvt.) Ltd.

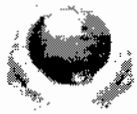
Sarosh Tahir
Project Engineer

RECEIVED

9-1-19

Al Tariq Constructors (Pvt) Ltd.
Suit NO. 1301, 1302, 13th Floor
Uni Center, II Chundrighar Road
Karachi – Pakistan
Phone: 021-32427800-3
email: atl@atipk.com
info@atipk.com

GEO-Link
Plot No.C-08
Eastern Industrial Chemical
Zone Port Qasim Authority
Karachi, Sindh, Pakistan
+922134833612
info@geolinks.com.pk



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Jamshoro Power Company Limited

BI-ANNUAL REPORT 2018

**CONSTRUCTION OF HAZARDOUS SOLID
WASTE DISPOSAL FACILITY FOR
JAMSHORO POWER GENERATION
PROJECT
(LOT-IV)**

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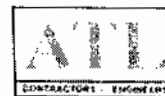


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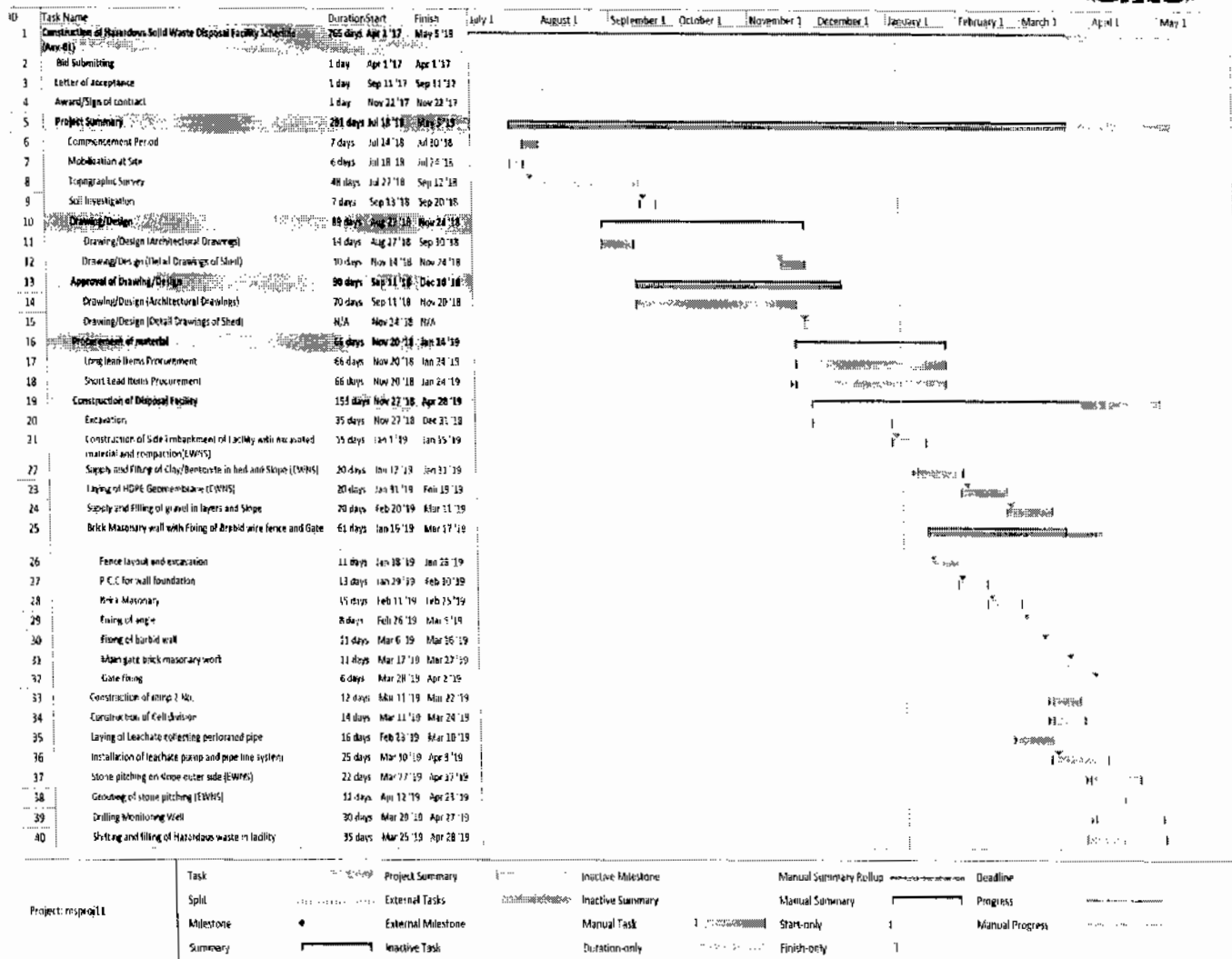


Project Schedule:



Construction of Hazardous solid waste disposal facility Schedule (Rev-01)

Jan 5 '19



Page 1

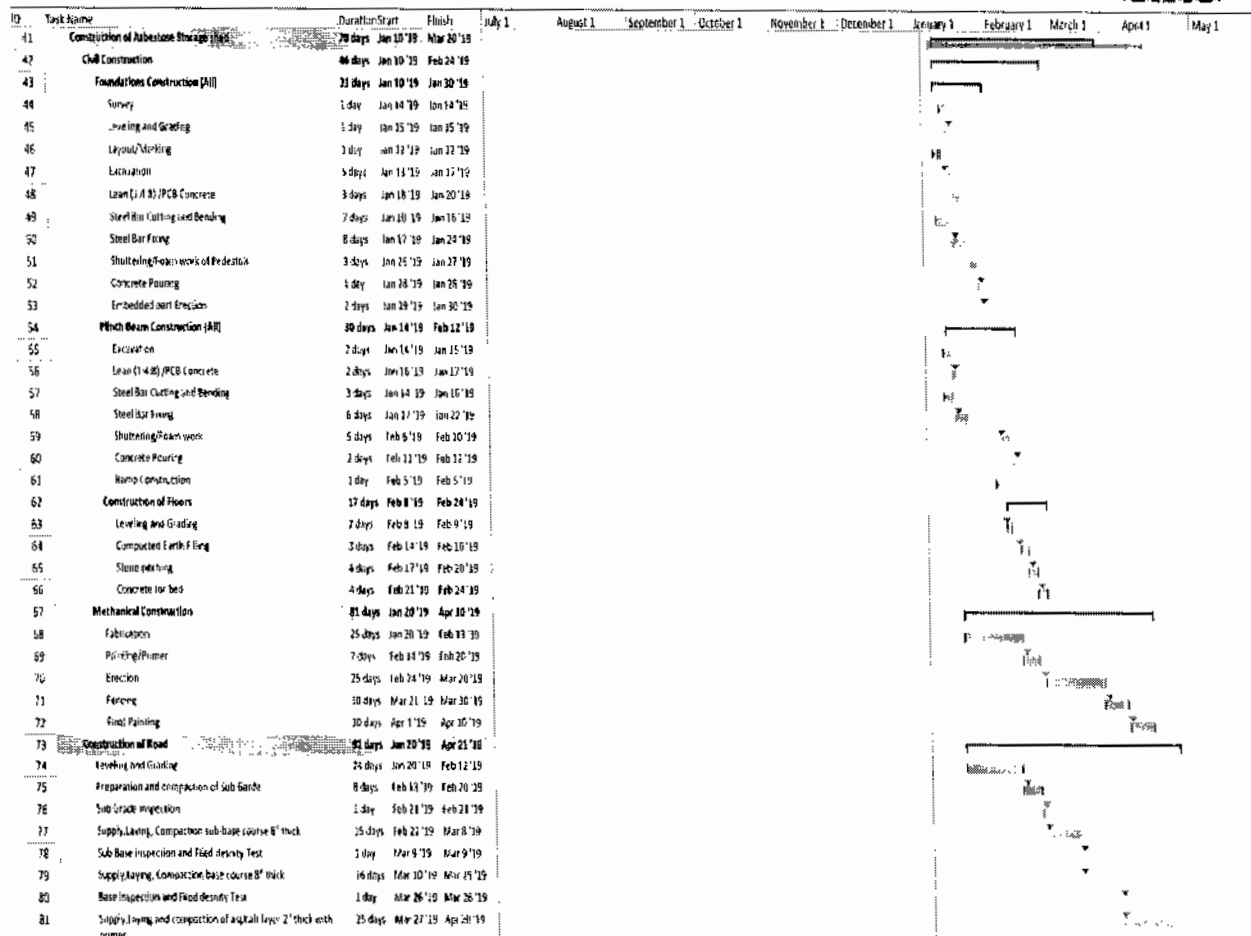


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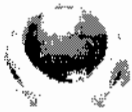


Jan 5 '19

Construction of Hazardous solid waste disposal facility Schedule (Rev-01)



Project: msp011	Task	Project Summary	Inactive Milestone	Manual Summary No Up	Deadline
	Split	External Tasks	Inactive Summary	Manual Summary	Progress
	Milestone	External Milestone	Manual Task	Start-only	Manual Progress
	Summary	Inactive Task	Duration only	Finish only	



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Jan 5 '19

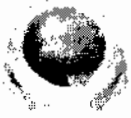
Construction of Hazardous solid waste disposal facility Schedule (Rev-01)



ID	Task Name	Duration	Start	Finish	July 1	August 1	September 1	October 1	November 1	December 1	January 1	February 1	March 1	April 1	May 1
82	Handing over to Client	1 day	Apr 21 '19	Apr 22 '19											
83	Shifting and storage of asbestos material in shed	25 days	Mar 21 '19	Apr 14 '19											
84	Shifting and storage of asbestos material in shed	25 days	Mar 21 '19	Apr 14 '19											
85	Electrification work	17 days	Mar 25 '19	Apr 10 '19											
86	Excavating	8 days	Mar 25 '19	Apr 2 '19											
87	Lighting	7 days	Apr 1 '19	Apr 7 '19											
88	Misc Electrical work	3 days	Apr 8 '19	Apr 10 '19											
89	Demolition	7 days	Apr 29 '19	May 5 '19											
90	Demolition	7 days	Apr 29 '19	May 5 '19											

Project: nproj11	Task	Project Summary	Reactive Milestone	Manual Summary Rollup	Deadline
	Sp	External Tasks	Inactive Summary	Manual Summary	Progress
	Milestone	External Milestone	Manual Task	Start only	Manual Progress
	Summary	Inactive Task	Durations only	Finish only	

Page 3



GENERAL

1.1 Purpose

The purpose of this plan is to identify the strategy and devise a specific mechanism which is directed towards the better management of health, safety & environment (HSE) matters/Construction Activities for the construction of "Hazardous solid waste disposal facility for Jamshoro power generation project (Lot-IV)". The implementation of this plan will create a mindset, intolerant of any accident, injury, security and damage, regardless of severity.

1.2 Scope

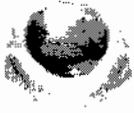
This specific HSE Plan describes the procedures that shall apply to all activities coming under ATL-GPL consortium scope of work at construction of hazardous solid waste disposal facility for jamshoro power generation project (Lot-IV).

The scope of work shall be executed by supplying the designated materials, baseline manpower, temporary facilities, baseline equipment / tools, consumables, testing and inspection facilities and other services necessary to complete the scope of work.

1.3 Objectives and Goals

To avoid all personal injuries during the execution of the Construction of hazardous solid waste disposal facility for Jamshoro power generation project (Lot-IV), 'Target Zero LTI' (Lost Time Injury).

- To ensure that all personnel employed are competent to carry out their designated tasks safely.
- To create positive health, safety and environment attitudes and perceptions at all levels of the Project organization, and to raise health safety and environmental awareness.
- To implement a training program that supports the achievement of personnel competency in relation to Health, Safety, and the Environment.



- To introduce a method of motivating good safety and environmental performance which shall include the use of commendation, as well as correction techniques .
- To continually monitor and improve HSE performance.

1.4 Project HSE Objectives

The implementation of the HSE Program Site should help to achieve the following objectives:

- Zero incidents, i.e.
- No unsafe actions, unsafe conditions and near misses
- No incidents with First-aid treatments as a consequence
- No injury to people
- No damage to materials or harm to the environment
- No uncontrolled emissions
- No unplanned fires
- No violation
- No external complaints as a consequence of odors, light or noise nuisance
- No complaints about the management of waste materials
- No exposure to hazardous chemicals
- No exposure to excessive noise

Site Regulations

Access control arrangements shall be implemented to avoid unauthorized access to JPCL and contractors construction site, temporary site area's and camp facilities. A control system that controls the in- and outgoing traffic, personnel and vehicles, material movement, equipment and tools will be put in place. Only personnel who have obtained prior approval will be given access to Site. The same is applicable for Visitors and delivery vehicles to Site. Only the designated gates and routes must be used for entrance and exit.



Visitors to Site must have a clear purpose for their visit and must have made arrangements for their visit with a contact person on Site. Visitor's contact person must be available during the visit and must guide the Visitor at any time. Visitor's contact person is responsible that the Visitor complies with all HSE and Security rules while on Site.

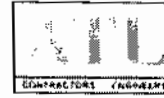
Risks And Mitigation

Through health and safety risks and mitigation measures during construction operation and commissioning of thermal plants are similar to other industrial units, the following health and safety measures will be taken for the operation of the present worksite.

- Site office, equipment area, parking area, chemical storage area, first aid drinking water, toilet, waste disposal, shower area, kitchen area, and a diesel storage area will be assigned.
- Asbestos hazardous area will be properly marked and identified.
- Workers will be well aware of the hazardous and nonhazardous materials and on handling, parking, transportation, storage and dispersal.
- Road safety signs will be posted and speed limits of vehicles will be determined.

Housekeeping:

All personnel are responsible for the housekeeping on his working place. Falling objects shall be avoided by the use of boxes or other containers for carrying tools, materials, working equipment and waste. All working areas shall be kept clean and tidy. Waste shall be disposed in the provided three different color bins and working material and equipment shall be removed out of working areas on daily basis. Electrical cables shall not obstruct passage- and traffic ways.



Workers Protection

All workers will wear Proper Personal Protective Equipments (PPE'S):
These include:


- Half faced masks disposal paper respirator or equivalent mentioned will be provided as recommended by MMP.
- Dust preventable overall will be with hood and close fitting at neck waists ankles without external pockets.
- Eye protecting glasses
- Ear plug for noise control
- Work area will be marked with yellow ribbon.
- Whole area will be made wet with water and adhesive chemicals.
- Vegetation will be removed and stored at designated area.
- Asbestos, asbestos containing material, and boiler soot will be recognized and marked with red flag.
- Workers will collect all type of material from ground manually with special care as mentioned in other SOPs.
- Hazardous material will be wrapped, neck tight and stored in containers and placed under steel shed or designated by JPCL.
- Small fragments of hazardous material will be picked in durable sheet polythene bags, neck tight and stored at designated area.
- Nonhazardous material will be stored at designated area as suggested by JPCL.
- During movement of equipment, working or construction work if noise found >85 dba, noise, protecting gear will be used.
- Workers will have access to safe drinking water to stay hydrated and shower.
- Chemical hazard exposure of diesel will be minimized since equipment parking area and chemical storage place will be away from the workplace.
- Workers have the right to know about chemicals and hazardous material will be followed.
- Fires or open flame level devices will not be used during operation.
- The safety manager will investigate incidents resulting in injury, illness.
- Damage or loss of property will be reported to concern officer at site and head office.



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Project Detail

Project Name:	CONSTRUCTION OF HAZARDOUS SOLID WASTE DISPOSAL FACILITY FOR JAMSHORO POWER GENERATION PROJECT (LOT-IV)		
Contractor:	The Contract has been awarded to M/s ATL-GPL Consortium		
Supervision:	The Construction Supervision as a consultant of work is being carried out by M/s Mott MacDonald.		
Project Detail	<p>Jamshoro Power Plant is generating 600 MW of electricity. With this generation of electricity comes the generation of waste as well. Currently there is no waste management plan existed and hazardous and non-hazardous waste is distributed in several open areas which pose an environmental hazard. This is especially concerning with the district government's plan to extend it to 1200 MW due to electricity shortages in Pakistan. For this reason, it is essential to establish a waste management plan to protect the environment and human population from the pollution.</p> 		
Project Type:	<input checked="" type="checkbox"/> Construction	<input type="checkbox"/> Renovation	
	Other (Specify):		
Project Start:	11-July-2018	Project Finish:	11-Jan-2018



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Administration:

Management comprises the systematic effort to ensure that all activities executed will be performed according to applicable HSE rules and regulations. This includes establishment and updating of the HSE Program Site, implementation of HSE requirements in the project execution and allocation of necessary resources for implementation, documentation and verification in accordance with the HSE Program.

Geolinks Staff

S.no	Name	Designation	Contact
1	Raheel Ahmed Siddiqui	Board of Director	0312-1127256
2	Prof. Dr. Moinuddin Ahmed	Technical Director	0333-3122975
3	Syed Tariq Ahmed	Chief Operating Officer	0333-3061697
4	Imran Khan	EHS Coordinator	0336-2271859
5	Wajahat Nadeem	EMR	0334-3478310

ATL Staff

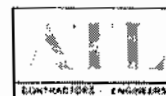
S.no	Name	Designation	Contact
1	Naseer Ahmed	Senior Manager Construction	0334-0538783
2	Asif Khan	Manager HSE	0333-2647417
3	Sarosh Tahir	Project Engineer	0336-3702972
4	Altaf Ahmed	Admin	0302-3190686
5	Abdul Aziz	HSE Officer	0334-2063023
6	M Amir	Surveyor	0312-9105972
7	Sajid Ali	Training Civil Engineer	0300-3079938



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ACTIVITIES CARRIED OUT IN THE MONTHS OF (July to December)

S.No	Month	Activity
1	July	Mobilization & Topographical survey.
2	August	Submission of Topographical survey Report, CESMP & HASP, Preparation of Architectural Drawings & Asbestos Investigation.
3	September	Submission of Architectural drawings after approval of Topographical survey drawings, Geotechnical investigation & submission its report, Asbestos Investigation Report Submitted to MMP.
4	October	Submitted Documents related to the projects, awaited for the approvals.
5	November	Cleaning of Hazardous/ Non Hazardous Material from the construction area, prepared dumping area for excavated material. Layout / Survey before and after cleaning of waste inspected by MMP Representative. Excavation of disposal facility (600 m ³)
6	December	Clean the scattered Hazardous/Non-Hazardous waste from our construction area which is almost 1500 m ³ . Hard rock excavation of Hazardous Waste disposal facility up to the required depth & maintaining/preparing side slopes of facility. Shifting of Excavated material from construction area to designated dumping area selected by JPCL.



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		<p>Prepared ground surface for back filling for the construction of side embankment of disposal facility.</p> <p>Survey of "Buried Soot & other Hazardous Material" found during excavation and informed to the MMP and JPCL, awaited for response.</p> <p>Submitted "Permeability Test of Bentonite" to MMP.</p> <p>Submitted "Proctor Test of Soil" used for construction of side embankment.</p> <p>Submitted "Hazardous waste management awareness program".</p> <p>Submitted " Asbestos Storage Shade Drawings" after incorporating all the comments.</p>
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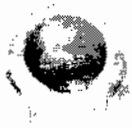
Environmental Monitoring

Environmental Monitoring Requirement & Parameters:

The project is committed to monitor and manage its surrounding environment so as to reduce the negative impacts which may arise from the project activities. To control the adverse impacts on ambient air quality, traffic safety, Soil investigation, waste management, Health & Safety Management Plan of all personnel on site. The **ATL-GPL** is regularly monitoring and managing its construction site by implementing the approved CESMP. The daily, weekly and monthly environmental inspection records are up to date and have been checked by MMP representatives. Precisely the following pre-determined parameters as indicated below are being regularly monitored subsequent management program has also taken under consideration for successful completion of the project.

- (a) Ambient air quality
- (b) Traffic safety
- (c) Soil Investigation
- (d) Waste management
- (e) Occupational Health and Safety

S.no	Monitoring & Management Parameters	July to Dec
a)	Ambient air quality	Done with visual inspections
b)	Traffic safety	Implemented and monitored
c)	Soil Investigation	conducted & Submitted
d)	Waste management	Implemented SOP'S & Monitored
e)	Health & Safety Management Plan	Implemented and monitored



Mitigation Measures:

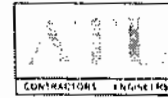
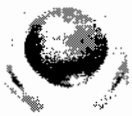
The assessment methods shall be capable of : identifying and evaluating mitigation measures in order to avoid, reduce or remedy the impact; assessing the effectiveness of mitigation measures; and, defining the residual environmental impact, which is the net impact remaining with mitigation measures in place. (ATL-GPL) is committed to implementing a structured approach to workplace health and safety in order to achieve a consistently high standard of safety performance. This Plan will assist (ATL-GPL) in meeting its obligations in accordance with work health and safety legislation. This Plan applies to all (ATL-GPL) officers and workers and to other persons at risk from work carried out at LOT-IV workplace. Failure to comply with the requirements of this Plan may lead to disciplinary action.

Implemented by:

- 1) Inspection**
- 2) Morning meeting/ Safety Talk**
- 3) HSE Audit Checklist**
- 4) Air Emission Monitoring**

1) Inspection:

ATL-GPL shall follow the standard procedures and instructions by the Consultant, if any, for carrying out proper construction, erection and testing of all the facility. For this purpose, it will be the Contractor's responsibility to ensure availability of construction machineries, Excavator, Jack hammer, Tractor Trolley, Scaffolding, tool for cutting, welding, erection, etc. as may be required.



Site Inspection Of Construction Vehicles In Respect To Health And Safety,
following vehicles are using:

S.NO	Machines & Vehicles	Quantity
1	Excavator	01
2	Jackhammer	01
3	Vibratory Road Roller (10 ton)	01
4	Vibratory Road Roller (05 ton)	01
5	Vibratory Road Roller (01 ton)	01
6	Plate Compactor	02
7	Tractor Trolley	03
8	Tractor With Water Booser	01
9	Mixer Machine	01
10	Cube Crushing machine	01
11	Diesel Distribution Drums	05
12	Pickup (Shahzor)	01
13	Suzuki Bolan Ambulance	01
14	Dewatering Pump	02
15	Welding Plant	02



2) Morning Safety Meeting/ Safety Talk

The morning safety meeting/ safety talk is the first step of the daily safe working activity. It includes:

- The announcement of important matters (such as project development/special activities, special safety information, etc.)
- Inspection on personal protective equipment and dressing.

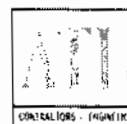




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Safety Talk Format

Topic:-

Date:-

Conducted By:-

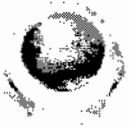
Time:-

Suggestion:-

S#	Name	Designation	Signature
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

GPL Representative

ATL Representative

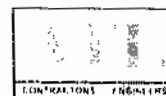
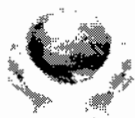


3) HSE AUDIT

HSE Audit & Inspections are an important way of identifying potential workplace hazards before they cause any harm. The inspection should only be carried out if it is safe to do so. It may cover the area concerned and any other part of the workplace necessary to find out the cause. It can include examining any relevant machinery, plant, equipment or substance in the workplace.

CHECK LIST

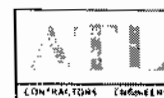
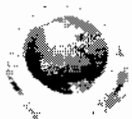
Sr.No	Description	Yes	No	N/A	Comments/Remarks
1	General Safety				
1.1	Do all Staff have suitable and Sufficient P.P.E to work	✓			
1.2	Are Stairs & Slopes in good condition and have secure handrails fitted	✓			
1.3	Are Fire exits Clear at all times	✓			
2	House Keeping				
2.1	Are all work areas kept sufficiently clean	✓			
2.2	Are appropriate washing & Sanitary Facilities provided and work effectively for staff	✓			
2.3	Are all corridors & passageways free from obstruction, trips, slips & Fall Hazards	✓			
2.4	Are all goods & materials Stored correctly	✓			
3	Fire Safety				



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3.1	Are all exit routes kept clear and free from obstruction	✓		
3.2	Are Emergency instructions clearly displayed	✓		
3.3	Are all relevant fire emergency direction signs kept clear and unobstructed	✓		
3.4	Are all extinguishers fire buckets in place and easily accessible	✓		
3.5	Has all fire equipment been tested	✓		

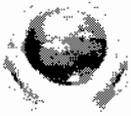
4	First aid/accident/incident/reporting			
4.1	Do you have a qualified first aider	✓		
4.2	Do you have an appointed person who can take over in the absence of a first aider	✓		
4.3	Do you have a first aid box that is correctly stocked and readily available	✓		
4.4	Are first aid notice clearly displayed giving names of nominated first aider and location of first aid boxes	✓		
4.5	Are all staff aware of accident/incident/reporting procedure	✓		
5	Provision of work equipment			
5.1	Have all staff received adequate instruction/training/information in use of equipment	✓		
5.2	Are there any outstanding repairs involving work equipment	✓		
6	Security			
6.1	Is there a system in place to prevent unauthorized access to premises	✓		



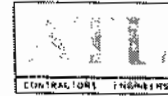
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6.2	Are all restricted areas adequately signed and secured	✓		
6.3	Is there a secure area for staff personal items to be stored while on duty	✓		
7	Lighting			
7.1	Are all areas efficiently lit	✓		
7.2	Is the lighting provided suitable for the purpose it is to be used for	✓		
7.3	Are all lights /fittings in good repair	✓		
7.4	Is defective lighting repaired within a reasonable time	✓		
8	Electricity at Work			
8.1	Has all portable electrical equipment been tested	✓		
8.2	Are there any visible signs of damage to the appliance, outer or plug	✓	✓	
8.3	Are all cables properly routed to eliminate tripping hazards	✓		

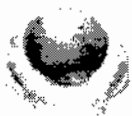
8.4	Are all electrical sockets and switches in good repair	✓		
8.5	Has the fixed wiring been inspected by a competent person	✓		
8.6	Are any extension leads / or plug adapters in permanent/semi-permanent use	✓		
8.7	Are there any new items of equipment that require testing			✓
9	Construction Noise			
9.1	Are machines and vehicles maintained and inspected regularly	✓		
9.2	Are vehicles and machines equipped with silencers and mufflers	✓		



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9.3	Is there any construction activity producing high noise during night time		✓		
9.4	Is the traffic appropriately managed to avoid nuisance	✓			
9.5	Is the pressure horns prohibited while traveling through sensitive receptor			✓	
9.6	Has the local community been informed in advance about the commencement of activities which can generate high noise	✓			
10	Use and quality of water				
10.1	Is there an adequate supply of fresh drinking water	✓			
10.2	Has arrangements for the alternate source been made in case of water shortage.	✓			
10.3	Is there any water conservation programmed to reduce wastage of water.	✓			
11	Soil and water contamination				
11.1	Are the fuels and chemicals handled in a safe manner, ensuring no leakage or spillage	✓			
11.2	Are regular inspections of vehicles and equipment carried out for the leakage	✓			
11.3	Are the fuel/ cement/ chemical storage areas, covered and banded	✓			
11.4	Is concrete missing carried out at some suitable distance from surface water body	✓			
11.5	Are shovels, plastic bags and absorbent materials present at site.	✓			
11.6	Is there a septic tank soakage pit for disposal of sanitary wastewater from camps	✓			



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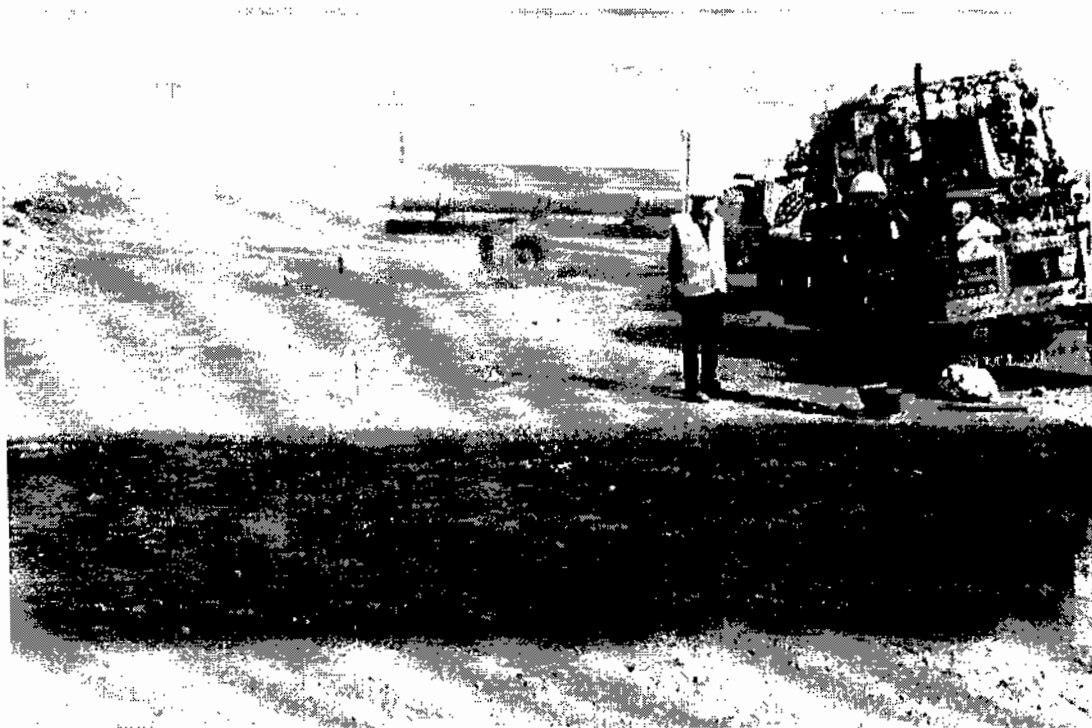
11.7	Are the facilities regularly serviced and emptied	✓			
12	Solid and hazardous waste Management				
12.1	Are waste bins present at site	✓			
12.2	Is different waste separated at source	✓			
12.3	Is there any waste dumped outside the proposed site boundary	✓			
12.4	Is training provided to workers for identification segregation and management of waste	✓			
13	Climate Air Emission and Odour				
13.1	Is water sprinkled daily to avoid dust emission	✓			
13.2	Is the construction material during transportation properly covered	✓			
13.3	Are vehicles generators concrete mixers and other machinery properly tuned to reduce air emissions	✓			
13.4	Are toilets located at suitable distance from local communities to keep away foul smell	✓			
14	Ventilation				
14.1	Are all areas ventilated sufficiently	✓			
14.2	Are there any fixed or portable air/fume/Duct extraction units			✓	
14.3	Are the filter screens / mesh guards free from any buildup of dust or debris	✓			
14.4	Are there any fixed or portable air conditioning units / fans			✓	
14.5	Is all equipment clean & in good repair	✓			

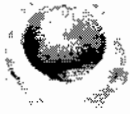


4) Air Emission Monitoring

Air Quality To reduce the generation of dust owing to movement of construction materials including vehicles, regular water spray are being accomplished at construction site. Movement of construction debris are being covered while hauled and stored, roads properly cleaned and water sprayed in order to minimize dust in air.

Water sprinkling to control dust emissions:



**Format**

Device Name: Air Emission Tester M-WP6300

Month:

S.N o	Date	PM 2.5 (500 $\mu\text{g}/\text{m}^3$)	PM 10 (150 $\mu\text{g}/\text{m}^3$)	TVOC (0.002- 0.004 ppm)	Temperat ure	Wind speed	Humidity Level
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							

Guidelines of SEPA:



PM 2.5: 500 $\mu\text{g}/\text{m}^3$

PM 10: 150 $\mu\text{g}/\text{m}^3$

Guidelines of WHO

TVOC: 0.002-0.004 ppm

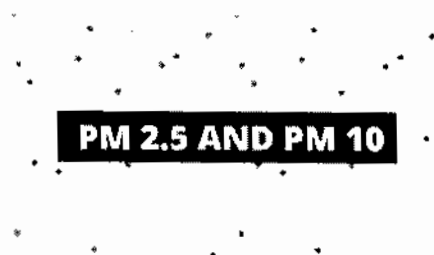
Device Range:

HCHO Formaldehyde range in the air: 0.000-1.999 mg/m^3

PM 2.5/ PM10: Detection range in the air: 0-999 $\mu\text{g}/\text{m}^3$

TVOC (Total Volatile Organic Compound) range in the air: 0.000-9.999 mg/m^3

PM 2.5/ PM 10

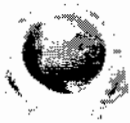


PM₁₀ is particulate matter 10 micrometers or less in diameter, PM_{2.5} is particulate matter 2.5 micrometers or less in diameter. PM_{2.5} is generally described as fine particles. By way of comparison, a human hair is about 100 micrometers, so roughly 40 fine particles could be placed on its width.

TVOC is a grouping of a wide range of organic chemical compounds to simplify reporting when these are present in ambient air or emissions. Many substances, such as natural gas, could be classified as volatile organic compounds (VOCs).

**HSE STATISTICS REPORT
(July to December)**

S.No	Accident / Incident Type	Status	Remarks
1	Near Miss	02	
2	First Aid Case	00	
3	Medical Treatment Injury	00	
4	Restricted Work Injury	00	
5	Lost Time Injury	00	
6	Occupational illness	00	
7	Major Accident	00	
8	Fatality	00	
9	Road Accident	00	
10	Fire	00	
11	Property Loss	00	
12	Number of Loss Days	00	
13	Lost Time Injury Frequency (LTIF)	00	
14	Medical Treatment Injury Frequency (MTIF)	00	
15	Restricted Work Injury Frequency (MTIF)	00	
16	Occupational illness Frequency	00	
17	Total Man Hrs Worked For Month		



**Trainings
(July to December)**

Location: Assembly Area

**Trainer: Imran Khan
Coordinator**

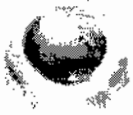
Designation: EHS



Training: Fire & Safety



Training: General Waste Handling



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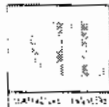


Training: First Aid



Training: Spill Kit

Employees Signature:



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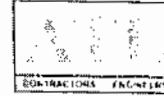
Training Location: Assembly Area

Date: 19-12-2018

Training Held For: Awareness of FIRE EXTINGUISHER & FIRE

Trainer:

S.no	Employee Name	Designation	Course Attendent Signature
1	MUSTAFA	Executive	[Signature]
2	YASSEN	Executive	[Signature]
3	ADNAN	"	[Signature]
4	AMTAD	Store Keeper	[Signature]
5	AMIR	Security	[Signature]
6	JUNAID	Acc. Sec	[Signature]
7	SHERAZ	HR/PR	[Signature]
8	AHSAN	"	[Signature]
9	A.AZIZ	HSE Officer	[Signature]
10	NATIAHAT	EMR	[Signature]
11	ALFATTAH	Admin	[Signature]
12			
Training Evaluation			
Area of Evaluation		Poor	Average
Course Material			✓
Voice Clarity			✓
Observation			✓
Practically			✓
Knowledge & Understanding			✓



Visitors Policy

Policy brief & purpose

Our Workplace Visitors policy outlines our rules for receiving visitors at our premises. We want to ensure that visitors will not:

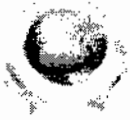
- Pose threats to our premises and property
- Distract employees from their work
- Be exposed to danger

Scope

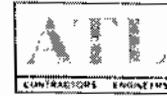
This policy applies to all employees. "Workplace visitors" may refer to employees 'contractors & the sub contractors

To ensure safety at work, employees who are on parental leave may enter our construction site with JPCL gate pass. Visitors must follow the following instructions:

1. Park your car in the designated area.
2. Please show your NIC, and provide company name.



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3. Collect your visitor & information card.
4. Do not take photographs/video without permission.
5. Do not enter the hazardous storage area.
6. Please wear safety glasses and mask when visit a site.
7. Smoking is not allowed.
8. If you have any concerns direct them to the Project Manager only.

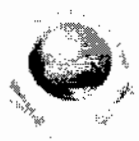
Unauthorized visitors:

Security staff who spot unauthorized visitors may ask them to leave. Visitors who misbehave (e.g. engage in hate speech, cause disruption or steal property) will be asked to leave and prosecuted if appropriate.

Employees who spot unauthorized visitors may refer them to (*security/office manager*).

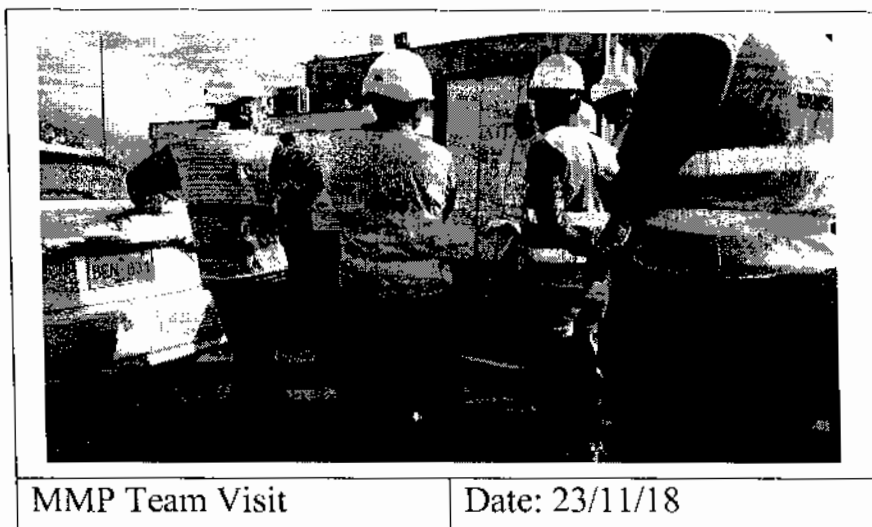
Daily Visitors:

S.No	Name/Designation	Company Name
1.	Ghulam Mustufa (Senior Civil Engineer.),	Mott MacDonald
2.	Shahid Ali Abro (Assistant Engineer Civil)	Mott MacDonald
3.	Abdul Ahad Memon (Assistant Engineer Civil)	Mott MacDonald
4.	Mr Ehtasham (HSE Engineer)	Mott MacDonald
5.	Mr Saeed (Surveyor)	Mott MacDonald



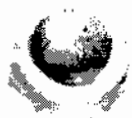
Site Visit:

Site visit in the Month of November:

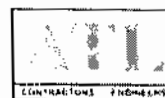


MMP Team Visit

Date: 23/11/18



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MMP Team Visit

Date: 23/11/18

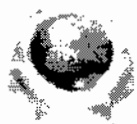
S.No	Visitors	Designation	Representative	Date
1	Mr Zahid Junejo	Regional Manager	MMP	23/11/18
2	Mr M. Ali Shishmahal	Senior Environmentalist	MMP	23/11/18
3	Mr Ishtiaq Mehar	Local Team Leader	MMP	23/11/18

Site visit in the Month of December:



**MMP Team Visit:
Mr Timothy Mark Hulme**

Date: 20/12/18



**JPCL Team Visit
Mr Ziauddin & Mr Yasin**

Date: 20/12/18

S.No	Visitors	Designation	Representative	Date
1	Mr Timothy Mark Hulme	Team Leader	MMP	20/12/18
2	Mr Ziauddin	Senior Environmentalist	JPCL	20/11/18

Personal Protective Equipments

PURPOSE

The purpose of this procedure is to establish a standard for the mandatory use of PPE on ATL-GPL projects / sites as well as a general use requirements.

1. GENERAL FOR PERSONNEL PROTECTIVE EQUIPMENT :

All personnel working at Project sites are required to abide by Client safety rules and the following PPE are the minimum requirement to be worn all the times at sites which consists of

Coverall (company uniform), Helmet (hard hat), Safety glasses with side shields, Safety shoes, Gloves and high visible waist.

Work permits will define any additional PPE required according to nature of work and area involved; ie, Safety harness, Respirator, Breathing apparatus, Chemical suit, Rubber boots, Face shield, Goggles, Ear plugs; etc. All PPE shall comply with OSHA and ANSI Standards.



2. Head Protection :

Employees shall wear Hard hats that are in good condition and meet applicable regulatory standard , hard hats shall be worn in the proper manner [Brim to the front] during the work site to protect head against impact from falling objects.

3. Eye & Face :

Safety glasses/ goggles shall be worn to protect eyes from flying particles. Face shield shall be used to protect face from splinters and sparks due to grinding/ cutting jobs and protection from chemical splashing.

4. Foot Protection :

Safety shoes shall be worn to protect feet against slipping, rolling, falling, sharp objects and general safety from foot injury/ hazards.

5. Hearing Protection :

Ear plug/ Ear muffs shall be worn in areas where hazardous noise level exceeding 85 dbA At industrial construction and maintenance works, noise level that exceeds than exposure limits, hearing protection is essentially required on sites and especially in areas where safety warning signs are posted.

6. Hands Protection :

To protect hands against injuries from sharp objects, hot surfaces, and chemicals, gloves shall be worn.

7. Coverall :

Coverall with company logo shall be worn by workers at project/ site jobs.



Daily Log

Time: 8:00 am to 5:00 pm

A. Construction Activities

S.no	Location	Activities	Status	Remarks
1	Site A	Excavation	-	In progress
2	Site A	Safety talk	-	Done

B. Man Power

S.no	Designation	No.	A	P	L	Remarks
1	Project Engineer	1		1		-
2	EHS Coordinator	1		1		-
3	Civil Supervisor	1		1		
4	EMR	1		1		-



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5	HSE Officer	1		1		-
6	Admin Officer	1		1		-
7	Surveyor	1		1		-
8	Assistant Surveyor	1		1		
9	Surveyor Helper	1		1		
10	Store Keeper	1		1		
11	Excavator Operator	1		1		-
12	Tractor Driver	1		1		-
13	Excavator Helper	1		1		
14	Labor	3		3		
15	Office Boy	1		1		-
16	Guard	1		1		-
	Total	18				



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Air Emission Monitoring

Device Name: Air Emission Tester M-WP6300

Month: December

S.No	Date	PM 2.5 (75µg/ m ³)	PM 10 (150 µg/ m ³)	TVOC (0.002- 0.004 ppm)	Temperature	Wind speed	Humidity Level
1	3/12/18	140 µg/m ³	149 ppm	0.002	23 °C -30°C	6 km/ h	30%
2	4/12/18	139 ppm	142 ppm	0.003	22°C -28°C	7km/h	31%
3	5/12/18	139 ppm	144 ppm	0.003	20 °C -29°C	6 km/ h	33%
4	6/12/18	136 ppm	155 ppm	0.001	20 °C -27°C	14km/h	36%
5	7/12/18	141 ppm	150 ppm	0.001	18 °C -27°C	13km/h	34%
6	10/12/18	129 ppm	149 ppm	0.002	18 °C -27°C	8 km/ h	43%
7	11/12/18	135 ppm	151 ppm	0.002	17 °C -24°C	19km/h	38%
8	12/12/18	102 ppm	124 ppm	0.001	13 °C -24°C	14km/h	37%
9	13/12/18	118 ppm	135 ppm	0.002	12 °C -25°C	12km/h	35%
10	14/12/18	138 ppm	156 ppm	0.003	10 °C -25°C	13km/h	33%
11	17/12/18	109 ppm	126 ppm	0.003	09 °C -25°C	18km/h	18%
12	18/12/18	120 ppm	139 ppm	0.002	10 °C -25°C	28km/h	36%
13	19/12/18	113 ppm	128 ppm	0.002	10 °C -26°C	13km/h	14%
14	20/12/18	111 ppm	124 ppm	0.001	10 °C -26°C	14km/h	29%
15	21/12/18	114 ppm	128 ppm	0.003	09 °C -27°C	10km/h	39%
16	24/12/18	103 ppm	115 ppm	0.001	09 °C -24°C	21km/h	24%
17	25/12/18			Holiday			
18	26/12/18	101 ppm	125 ppm	0.002	08 °C -27°C	12km/h	20%
19	27/12/18	110 ppm	130 ppm	0.002	07 °C -26°C	8km/h	32%
20	28/12/18	120 ppm	135 ppm	0.003	08 °C -26°C	10km/h	33%
21	31/12/18	120 ppm	130 ppm	0.002	07 °C -27°C	8km/h	28%

Guidelines of SEPA:

Particulate Matters(SPM) 500 µg/m³

PM 2.5: 75 µg/m³

PM 10: 150 µg/m³

Guidelines of WHO

TVOC: 0.002-0.004 ppm

Device Range:

PM 2.5/ PM10: Detection range in the air: 0-999 µg/ m³

TVOC (Total Volatile Organic Compound) range in the air: 0.000-9.999 mg/m³

