

PART 1 GENERAL

1.1 Overview

- .1 All Workers involved in Work who are on site for greater than three days in total during the course of the Work are to undergo Arsenic Medical Monitoring as detailed in this Section.
- .2 Arsenic Medical Monitoring requirements detailed in this Section are to be conducted in addition to arsenic exposure mitigation measures and PPE requirements detailed in Section 01 35 32 Site Specific Health and Safety Plan.
- .3 As directed by WSCC, Arsenic Medical Monitoring under this contract will use ACGIH Biological Exposure Indices (BEIs) for inorganic arsenic plus methylated metabolites in urine as the measure of potential Arsenic exposure in Workers conducting the Work.

1.2 Definitions

- .1 Inorganic Arsenic: aceto-arsenite and all inorganic compounds containing arsenic except arsine, but including arsenic trioxide, measured as arsenic (As).
- .2 Arsenic Medical Monitoring: Worker Inorganic Arsenic sampling, testing, assessment, counselling and Work duty modification actions conducted throughout the duration of the on-site Work, as described in this Section.
- .3 American Conference of Governmental Industrial Hygienists (ACGIH): A non-profit, non-governmental scientific organization which develops peer-reviewed guidelines for workplace exposures.
- .4 Arsenic Medical Monitoring Plan: The plan generated by the Contractor, and accepted by the Departmental Representative, the Mine Manager, and WSCC, that details the Contractors' methods, procedures, schedules, analytical laboratories and medical personnel to be used to implement the requirements of this Section.
- .5 On-Site Work Areas: All locations within the Site boundaries at which Work of this contract is being performed, except for the main Site entrance parking lot, the C-Dry Building and office trailers in between.
- .6 Workers: Contractor employees, sub-contractor employees and visitors under Contractor supervision or responsibility within On-Site Work Areas.
- .7 WSCC: Worker Safety and Compensation Commission.

1.3 Worker Monitoring Program Requirements

- .1 To be in accordance with Section 01 41 00 - Regulatory Requirements.
- .2 Worker medical monitoring plan and procedures are to meet or exceed applicable regulatory requirements from Canadian federal regulations, Northwest Territories Mine Safety Act requirements, WSCC requirements, and the Mine Manager.
- .3 Worker Medical Monitoring test results are to be compared against Inorganic Arsenic concentration mitigation action thresholds, measured in µg/L, detailed in the accepted Arsenic Medical Monitoring Plan.
- .4 Medical monitoring is to be conducted, and tests reviewed, under the direction of an occupational physician (MD) with arsenic exposure experience. The Contractors medical monitoring team is to also include a Certified Industrial Hygienist (CIH) or Registered Occupational Hygienist (ROH).

1.4 Monitoring Plan Testing Criteria

- .1 Worker required mitigation actions will be based on the total concentration of arsenate, arsenite, and the two methylated metabolic products, DMA and MMA detected in urine samples. Concentrations are not to be corrected for creatinine levels, as outlined in the ACGIH test procedures against the biological exposure index (BEI) for arsenic.
- .2 Worker Inorganic Arsenic urine concentrations are to be compared to the ACGIH BEI of 35 µg/L, with root cause analysis investigation and mitigative measures implemented, as required, to meet the implement corrective actions in order to meet the BEI.

1.5 Submittals

- .1 Submittals to be in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Prepare an Arsenic Medical Monitoring plan, which includes, but is not limited to:
 - .1 Establishment of worker baseline arsenic concentrations prior to potential occupational exposure.
 - .2 Specific sampling protocols to ensure that samples are representative and not subject to cross-contamination.
 - .3 Laboratory methodology, including proof of CALA accreditation for the test method(s) to be used.
 - .4 Sample turnaround time and reporting time to Departmental Representative within 24 hours of receipt of results.
 - .5 Frequency of worker testing.
 - .6 Sampling program QA/QC procedures.
 - .7 Details of how worker testing results will be continually assessed and evaluated to identify trends or test result distributions that indicate particularly high risk activities.
 - .8 Details of any sample testing occasions that would warrant submission of samples for rush turn-around testing.
 - .9 Details on any comparison sampling or other QA/QC testing that will be undertaken to provide information on diet or other non-occupational related impacts to workers arsenic concentrations.
 - .10 Details of how test result analysis will be used as opportunities for improvement including, but not limited to modifications to work practices, engineering controls or training.
 - .11 Details on how Workers test results will be organized and communicated and how Workers confidentiality will be maintained.
 - .12 Details regarding worker counseling procedures and opportunities for communicating with an occupational physician regarding arsenic risks.
- .3 Prepare, as part of the Worker Orientation Plan, a detailed Arsenic Information Package that includes, but is not limited to:
 - .1 Health risks associated with arsenic.
 - .2 The extent of arsenic impacts and potential for exposure at Giant Mine site and in their work activities.

- .3 Engineering controls and PPE to limit potential occupational exposures.
- .4 The importance of proper on-site hygiene.
- .5 Potential non-occupational exposure sources that contribute to arsenic concentrations in urine, such as diet and tobacco use.
- .4 The Arsenic Medical Monitoring Plan and Arsenic Information Package shall be developed in consultation with an occupational physician and CIH or ROH. The final Arsenic Medical Monitoring Plan and Arsenic Information Package shall be signed by a CIH or ROH.
- .5 The Arsenic Medical Monitoring Plan and Arsenic Information Package must be reviewed and accepted by the Departmental Representative, the Mine Manager, and WSCC.

1.6 Basis of Payment Schedule

Basis of Payment Schedule (BOP-1) for Medical Monitoring Contract Items					
Item	Description	Unit	Unit Price	Estimated Quantity	Total
01 35 15.01-1	Worker Arsenic Medical Monitoring	Sample	\$_____	1700	\$_____
01 35 15.01-2	Arsenic Medical Monitoring Plan and Arsenic Information Package	Lump Sum	\$_____	1	\$_____

1.7 Measurement of Payment

- .1 The development, supervision and execution of Arsenic Medical Monitoring to meet the requirements of this Specification and the accepted Arsenic Medical Monitoring Plan will be measured by the number of samples tested and will be paid under Unit Rate Payment Item 01 35 15.01-1 – Worker Arsenic Medical Monitoring.
- .2 The scope of work for Payment Item 01 35 15.01-1 Worker Arsenic Medical Monitoring is to include, but not be limited to, the following:
 - .1 Laboratory analytical costs.
 - .2 Packaging and shipping.
 - .3 Lost productivity due to Worker sample collection time requirements.
 - .4 Any Project Manager and Site Superintendent time requirements.
 - .5 Any Sub-Contractor time requirements.
 - .6 Licensed physician (MD), RIH or COH review time.
 - .7 Administrative Support including organizing of sampling supplies and organization and distribution of test results.
 - .8 Worker time spent in discussions regarding test results.
 - .9 Time spent preparing root cause investigation reports and Employers Report of Injury to WSCC.
- .3 Progress claims for Payment Item 01 35 15.01-1 Worker Arsenic Medical Monitoring are to include, but not be limited to laboratory sample chain-of-custody forms and test results relevant to the claimed samples.

- .4 All costs for the preparation and completion of the Arsenic Medical Monitoring Plan and Arsenic Information Package are to be included in the Lump Sum price for Payment Item 01 35 15.01-2 Arsenic Medical Monitoring Plan, as indicated in the Basis of Payment Schedule.
- .5 Payment Item 01 35 15.01-2 - Arsenic Medical Monitoring Plan will be made in progress installments as follows:
 - .1 Eighty percent (80%) of the Lump Sum price for Payment Item 01 35 15.01-2 Arsenic Medical Monitoring Plan and Information Package, will be paid upon submission by Contractor and acceptance by Departmental Representative, the Mine Manager, and WSCC of the initial Arsenic Medical Monitoring Plan.
 - .2 Ten percent (10%) of the Lump Sum price for Payment Item 01 35 15.01-2 Arsenic Medical Monitoring Plan and Information Package will be paid upon submission to, and acceptance by the Departmental Representative, Mine Manager, and WSCC of each additional revised version of the Arsenic Medical Monitoring Plan and Information Package, incorporating additional or modified health and safety requirements to account for changing conditions, regulations or guidelines, as requested by the Departmental Representative, the Mine Manager, or WSCC.
 - .3 Up to two revised versions of the Arsenic Medical Monitoring Plan and Information Package will be paid for. Revisions beyond two will not be paid. The total payment for Payment Item 01 35 15.01-2 - Arsenic Medical Monitoring Plan and Information Package will not exceed the tendered Lump Sum price.
 - .4 The balance of the of the Lump Sum price for Payment Item 01 35 15.01-2 Contractors Arsenic Medical Monitoring Plan will be paid after the completion of the Work, if applicable.
- .6 Except as indicated above, work under this section will not be measured. Indicate cost of the work of this section as a separate line item in the Contract Work Breakdown Structure (CWBS) specified in Section 01 32 18 - Construction Progress Schedules - Bar (GANTT) Chart.

PART 2 PRODUCTS

- .1 Sampling containers are to be clean, uncontaminated and meet the requirements of the testing laboratory.

PART 3 EXECUTION

- .1 Sample collection and testing for Arsenic Medical Monitoring is to be undertaken in accordance with the accepted Arsenic Medical Monitoring Plan.

END OF SECTION