



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 410-2012

MISCELLANEOUS SEWER CLEANING AND INSPECTIONS

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PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

B1.1 MISCELLANEOUS SEWER CLEANING AND INSPECTIONS

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 4:00 p.m. Winnipeg time, June 8th, 2012.

B2.2 Bids determined by the Manager of Materials to have been received later than the Submission Deadline will not be accepted and will be returned upon request.

B2.3 The Contract Administrator or the Manager of Materials may extend the Submission Deadline by issuing an addendum at any time prior to the time and date specified in B2.1.

B3. ENQUIRIES

B3.1 All enquiries shall be directed to the Contract Administrator identified in D4.1.

B3.2 If the Bidder finds errors, discrepancies or omissions in the Bid Opportunity, or is unsure of the meaning or intent of any provision therein, the Bidder shall promptly notify the Contract Administrator of the error, discrepancy or omission at least five (5) Business Days prior to the Submission Deadline.

B3.3 If the Bidder is unsure of the meaning or intent of any provision therein, the Bidder should request clarification as to the meaning or intent prior to the Submission Deadline.

B3.4 Responses to enquiries which, in the sole judgment of the Contract Administrator, require a correction to or a clarification of the Bid Opportunity will be provided by the Contract Administrator to all Bidders by issuing an addendum.

B3.5 Responses to enquiries which, in the sole judgment of the Contract Administrator, do not require a correction to or a clarification of the Bid Opportunity will be provided by the Contract Administrator only to the Bidder who made the enquiry.

B3.6 The Bidder shall not be entitled to rely on any response or interpretation received pursuant to B3 unless that response or interpretation is provided by the Contract Administrator in writing.

B4. ADDENDA

B4.1 The Contract Administrator may, at any time prior to the Submission Deadline, issue addenda correcting errors, discrepancies or omissions in the Bid Opportunity, or clarifying the meaning or intent of any provision therein.

B4.2 The Contract Administrator will issue each addendum at least two (2) Business Days prior to the Submission Deadline, or provide at least two (2) Business Days by extending the Submission Deadline.

B4.2.1 Addenda will be available on the Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/bidopp.asp>

B4.2.2 The Bidder is responsible for ensuring that he/she has received all addenda and is advised to check the Materials Management Division website for addenda regularly and shortly before the Submission Deadline, as may be amended by addendum.

B4.3 The Bidder shall acknowledge receipt of each addendum in Paragraph 8 of Form A: Bid. Failure to acknowledge receipt of an addendum may render a Bid non-responsive.

B5. SUBSTITUTES

- B5.1 The Work is based on the Plant, Materials and methods specified in the Bid Opportunity.
- B5.2 Substitutions shall not be allowed unless application has been made to and prior approval has been granted by the Contract Administrator in writing.
- B5.3 Requests for approval of a substitute will not be considered unless received in writing by the Contract Administrator at least five (5) Business Days prior to the Submission Deadline.
- B5.4 The Bidder shall ensure that any and all requests for approval of a substitute:
- (a) provide sufficient information and details to enable the Contract Administrator to determine the acceptability of the Plant, Material or method as either an approved equal or alternative;
 - (b) identify any and all changes required in the applicable Work, and all changes to any other Work, which would become necessary to accommodate the substitute;
 - (c) identify any anticipated cost or time savings that may be associated with the substitute;
 - (d) certify that, in the case of a request for approval as an approved equal, the substitute will fully perform the functions called for by the general design, be of equal or superior substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the Contract;
 - (e) certify that, in the case of a request for approval as an approved alternative, the substitute will adequately perform the functions called for by the general design, be similar in substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the Contract.
- B5.5 The Contract Administrator, after assessing the request for approval of a substitute, may in his/her sole discretion grant approval for the use of a substitute as an “approved equal” or as an “approved alternative”, or may refuse to grant approval of the substitute.
- B5.6 The Contract Administrator will provide a response in writing, at least two (2) Business Days prior to the Submission Deadline, only to the Bidder who requested approval of the substitute.
- B5.6.1 The Bidder requesting and obtaining the approval of a substitute shall be entirely responsible for disseminating information regarding the approval to any person or persons he/she wishes to inform.
- B5.7 If the Contract Administrator approves a substitute as an “approved equal”, any Bidder may use the approved equal in place of the specified item.
- B5.8 If the Contract Administrator approves a substitute as an “approved alternative”, any Bidder bidding that approved alternative may base his/her Total Bid Price upon the specified item but may also indicate an alternative price based upon the approved alternative. Such alternatives will be evaluated in accordance with B13.
- B5.9 No later claim by the Contractor for an addition to the Total Bid Price because of any other changes in the Work necessitated by the use of an approved equal or an approved alternative will be considered.
- B5.10 Notwithstanding B5.2 to B5.9, and in accordance with B6.5, deviations inconsistent with the Bid Opportunity document shall be evaluated in accordance with B13.1(a).

B6. BID SUBMISSION

- B6.1 The Bid shall consist of the following components:
- (a) Form A: Bid;

(b) Form B: Prices;

- B6.2 Further to B6.1, the Bidder should include the written correspondence from the Contract Administrator approving a substitute in accordance with B5.
- B6.3 All components of the Bid shall be fully completed or provided, and submitted by the Bidder no later than the Submission Deadline, with all required entries made clearly and completely, to constitute a responsive Bid.
- B6.4 Bidders are advised not to include any information/literature except as requested in accordance with B6.1.
- B6.5 Bidders are advised that inclusion of terms and conditions inconsistent with the Bid Opportunity document, including the General Conditions, will be evaluated in accordance with B13.1(a).
- B6.6 The Bid may be submitted by mail, courier or personal delivery, or by facsimile transmission.
- B6.7 If the Bid is submitted by mail, courier or personal delivery, it shall be enclosed and sealed in an envelope clearly marked with the Bid Opportunity number and the Bidder's name and address, and shall be submitted to:
The City of Winnipeg
Corporate Finance Department
Materials Management Division
185 King Street, Main Floor
Winnipeg MB R3B 1J1
- B6.7.1 Samples or other components of the Bid which cannot reasonably be enclosed in the envelope may be packaged separately, but shall be clearly marked with the Bid Opportunity number, the Bidder's name and address, and an indication that the contents are part of the Bidder's Bid Submission.
- B6.8 If the Bid is submitted by facsimile transmission, it shall be submitted to 204 949-1178
- B6.8.1 The Bidder is advised that the City cannot take responsibility for the availability of the facsimile machine at any time.
- B6.9 Bids submitted by internet electronic mail (e-mail) will not be accepted.

B7. BID

- B7.1 The Bidder shall complete Form A: Bid, making all required entries.
- B7.2 Paragraph 2 of Form A: Bid shall be completed in accordance with the following requirements:
- (a) if the Bidder is a sole proprietor carrying on business in his/her own name, his/her name shall be inserted;
 - (b) if the Bidder is a partnership, the full name of the partnership shall be inserted;
 - (c) if the Bidder is a corporation, the full name of the corporation shall be inserted;
 - (d) if the Bidder is carrying on business under a name other than his/her own, the business name and the name of every partner or corporation who is the owner of such business name shall be inserted.
- B7.2.1 If a Bid is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B7.2.
- B7.3 In Paragraph 3 of Form A: Bid, the Bidder shall identify a contact person who is authorized to represent the Bidder for purposes of the Bid.
- B7.4 Paragraph 10 of Form A: Bid shall be signed in accordance with the following requirements:

- (a) if the Bidder is a sole proprietor carrying on business in his/her own name, it shall be signed by the Bidder;
- (b) if the Bidder is a partnership, it shall be signed by the partner or partners who have authority to sign for the partnership;
- (c) if the Bidder is a corporation, it shall be signed by its duly authorized officer or officers and the corporate seal, if the corporation has one, should be affixed;
- (d) if the Bidder is carrying on business under a name other than his/her own, it shall be signed by the registered owner of the business name, or by the registered owner's authorized officials if the owner is a partnership or a corporation.

B7.4.1 The name and official capacity of all individuals signing Form A: Bid should be printed below such signatures.

B7.5 If a Bid is submitted jointly by two or more persons, the word "Bidder" shall mean each and all such persons, and the undertakings, covenants and obligations of such joint Bidders in the Bid and the Contract, when awarded, shall be both joint and several.

B8. PRICES

B8.1 The Bidder shall state a price in Canadian funds for each item of the Work identified on Form B: Prices.

B8.1.1 Notwithstanding C11.1.1, prices on Form B: Prices shall not include the Goods and Services Tax (GST) or Manitoba Retail Sales Tax (MRST, also known as PST), which shall be extra where applicable.

B8.2 The quantities listed on Form B: Prices are to be considered approximate only. The City will use said quantities for the purpose of comparing Bids.

B8.3 The quantities for which payment will be made to the Contractor are to be determined by the Work actually performed and completed by the Contractor, to be measured as specified in the applicable Specifications.

B8.4 Payments to Non-Resident Contractors are subject to Non-Resident Withholding Tax pursuant to the Income Tax Act (Canada).

B9. QUALIFICATION

B9.1 The Bidder shall:

- (a) undertake to be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba, or if the Bidder does not carry on business in Manitoba, in the jurisdiction where the Bidder does carry on business; and
- (b) be financially capable of carrying out the terms of the Contract; and
- (c) have all the necessary experience, capital, organization, and equipment to perform the Work in strict accordance with the terms and provisions of the Contract.

B9.2 The Bidder and any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:

- (a) be responsible and not be suspended, debarred or in default of any obligations to the City. A list of suspended or debarred individuals and companies is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/debar.stm>

B9.3 The Bidder and/or any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:

- (a) have successfully carried out work similar in nature, scope and value to the Work; and
- (b) be fully capable of performing the Work required to be in strict accordance with the terms and provisions of the Contract; and
- (c) have a written workplace safety and health program, if required, pursuant to The Workplace Safety and Health Act (Manitoba);
- (d) provide proof satisfactory to the Contract Administrator the Security Clearances as identified in Appendix A.

B9.4 Further to B9.3(c), the Bidder shall, within five (5) Business Days of a request by the Contract Administrator, provide proof satisfactory to the Contract Administrator that the Bidder/Subcontractor has a workplace safety and health program meeting the requirements of The Workplace Safety and Health Act (Manitoba), by providing:

- (a) a valid COR certification number under the Certificate of Recognition (COR) Program administered by the Manitoba Construction Safety Association or by the Manitoba Heavy Construction Association's Safety, Health and Environment Program; or
- (b) a report or letter to that effect from an independent reviewer acceptable to the City. (A list of acceptable reviewers and the review template are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/>)

B9.5 The Bidder shall submit, within three (3) Business Days of a request by the Contract Administrator, proof satisfactory to the Contract Administrator of the qualifications of the Bidder and of any proposed Subcontractor.

B9.6 The Bidder shall provide, on the request of the Contract Administrator, full access to any of the Bidder's equipment and facilities to confirm, to the Contract Administrator's satisfaction, that the Bidder's equipment and facilities are adequate to perform the Work.

B10. OPENING OF BIDS AND RELEASE OF INFORMATION

B10.1 Bids will not be opened publicly.

B10.2 Following the Submission Deadline, the names of the Bidders and their bid prices (unevaluated, and pending review and verification of conformance with requirements) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/>

B10.3 After award of Contract, the name(s) of the successful Bidder(s) and the Contract amount(s) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/>

B10.4 The Bidder is advised that any information contained in any Bid may be released if required by City policy or procedures, by The Freedom of Information and Protection of Privacy Act (Manitoba), by other authorities having jurisdiction, or by law.

B11. IRREVOCABLE BID

B11.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 9 of Form A: Bid.

B11.2 The acceptance by the City of any Bid shall not release the Bids of the next two lowest evaluated responsive Bidders and these Bidders shall be bound by their Bids on such Work for the time period specified in Paragraph 9 of Form A: Bid.

B12. WITHDRAWAL OF BIDS

- B12.1 A Bidder may withdraw his/her Bid without penalty by giving written notice to the Manager of Materials at any time prior to the Submission Deadline.
- B12.1.1 Notwithstanding C22.5, the time and date of receipt of any notice withdrawing a Bid shall be the time and date of receipt as determined by the Manager of Materials.
- B12.1.2 The City will assume that any one of the contact persons named in Paragraph 3 of Form A: Bid or the Bidder's authorized representatives named in Paragraph 10 of Form A: Bid, and only such person, has authority to give notice of withdrawal.
- B12.1.3 If a Bidder gives notice of withdrawal prior to the Submission Deadline, the Manager of Materials will:
- (a) retain the Bid until after the Submission Deadline has elapsed;
 - (b) open the Bid to identify the contact person named in Paragraph 3 of Form A: Bid and the Bidder's authorized representatives named in Paragraph 10 of Form A: Bid; and
 - (c) if the notice has been given by any one of the persons specified in B12.1.3(b), declare the Bid withdrawn.
- B12.2 A Bidder who withdraws his/her Bid after the Submission Deadline but before his/her Bid has been released or has lapsed as provided for in B11.2 shall be liable for such damages as are imposed upon the Bidder by law and subject to such sanctions as the Chief Administrative Officer considers appropriate in the circumstances. The City, in such event, shall be entitled to all rights and remedies available to it at law.

B13. EVALUATION OF BIDS

- B13.1 Award of the Contract shall be based on the following bid evaluation criteria:
- (a) compliance by the Bidder with the requirements of the Bid Opportunity, or acceptable deviation therefrom (pass/fail);
 - (b) qualifications of the Bidder and the Subcontractors, if any, pursuant to B9 (pass/fail);
 - (c) Total Bid Price;
 - (d) economic analysis of any approved alternative pursuant to B5;
- B13.2 Further to B13.1(a), the Award Authority may reject a Bid as being non-responsive if the Bid is incomplete, obscure or conditional, or contains additions, deletions, alterations or other irregularities. The Award Authority may reject all or any part of any Bid, or waive technical requirements or minor informalities or irregularities if the interests of the City so require.
- B13.3 Further to B13.1(b), the Award Authority shall reject any Bid submitted by a Bidder who does not demonstrate, in his/her Bid or in other information required to be submitted, that he/she is responsible and qualified.
- B13.4 Further to B13.1(c), the Total Bid Price shall be the sum of the quantities multiplied by the unit prices for each item shown on Form B: Prices.
- B13.4.1 If there is any discrepancy between the Total Bid Price written in figures, the Total Bid Price written in words and the sum of the quantities multiplied by the unit prices for each item, the sum of the quantities multiplied by the unit prices for each item shall take precedence.
- B13.4.2 Further to B13.1(a), in the event that a unit price is not provided on Form B: Prices, the City will determine the unit price by dividing the Amount (extended price) by the approximate quantity, for the purposes of evaluation and payment.
- B13.5 This Contract will be awarded as a whole.

B14. AWARD OF CONTRACT

- B14.1 The City will give notice of the award of the Contract or will give notice that no award will be made.
- B14.2 The City will have no obligation to award a Contract to a Bidder, even though one or all of the Bidders are determined to be responsible and qualified, and the Bids are determined to be responsive.
- B14.2.1 Without limiting the generality of B14.2, the City will have no obligation to award a Contract where:
- (a) the prices exceed the available City funds for the Work;
 - (b) the prices are materially in excess of the prices received for similar work in the past;
 - (c) the prices are materially in excess of the City's cost to perform the Work, or a significant portion thereof, with its own forces;
 - (d) only one Bid is received; or
 - (e) in the judgment of the Award Authority, the interests of the City would best be served by not awarding a Contract.
- B14.3 Where an award of Contract is made by the City, the award shall be made to the responsible and qualified Bidder submitting the lowest evaluated responsive Bid in accordance with B13.
- B14.3.1 Following the award of contract, a Bidder will be provided with information related to the evaluation of his/her Bid upon written request to the Contract Administrator.
- B14.4 Notwithstanding C4.1, the City will issue a purchase order to the successful Bidder in lieu of the execution of a Contract.
- B14.5 The Contract Documents, as defined in C1.1(n)(ii), in their entirety shall be deemed to be incorporated in and to form a part of the purchase order notwithstanding that they are not necessarily attached to or accompany said purchase order.

PART C - GENERAL CONDITIONS

C0. GENERAL CONDITIONS

- C0.1 The *General Conditions for Supply of Services* (Revision 2007 04 12) are applicable to the Work of the Contract.
- C0.1.1 The *General Conditions for Supply of Services* are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at http://www.winnipeg.ca/matmgt/gen_cond.stm
- C0.2 A reference in the Bid Opportunity to a section, clause or subclause with the prefix “**C**” designates a section, clause or subclause in the *General Conditions for Supply of Services*.

PART D - SUPPLEMENTAL CONDITIONS

GENERAL

D1. GENERAL CONDITIONS

D1.1 In addition to the *General Conditions for Supply of Services*, these Supplemental Conditions are applicable to the Work of the Contract.

D2. SCOPE OF WORK

D2.1 The Work to be done under the Contract shall consist of the cleaning and/or inspection of various diameter sewers and other miscellaneous cleaning and inspections such as; wet wells, sumps and manholes for the period from June 30th, 2012 until June 30th, 2013, with the option of two (2) mutually agreed upon one (1) year extensions.

D2.1.1 The City may negotiate the extension option with the Contractor within sixty (60) Calendar Days prior to the expiry date of the Contract. The City shall incur no liability to the Contractor as a result of such negotiations.

D2.1.2 Changes resulting from such negotiations shall become effective on June 30th of the respective year. Changes to the Contract shall not be implemented by the Contractor without written approval by the Contract Administrator.

D2.2 The major components of the Work are as follows:

- (a) Sewer cleaning and inspections
- (b) Other miscellaneous cleaning and inspections

D2.3 The Work shall be done on an "as required" basis during the term of the Contract.

D2.3.1 The type and quantity of Work to be performed under this Contract shall be as authorized from time to time by the Contract Administrator and/or Users.

D2.3.2 Notwithstanding C7.4, the City shall have no obligation under the Contract to purchase any quantity of any item in excess of its actual operational requirements.

D3. DEFINITIONS

D3.1 When used in this Bid Opportunity:

- (a) "**User**" means a person, department or other administrative unit of the City authorized by the Contract Administrator to order Work under this Contract;
- (b) "**WRc**" means "Water Research Centre" which is the accepted standard for sewer condition coding and assessment ;

D4. CONTRACT ADMINISTRATOR

D4.1 The Contract Administrator is:

Paul Bortoluzzi, C.E.T.
Asset Management Technologist
110-1199 Pacific Ave
Winnipeg, MB R3E 3S8

Telephone No. 204 986-2944

Facsimile No. 204 224-0032

D4.2 Bids Submissions must be submitted to the address in B6.7.

D4.3 At the pre-commencement meeting, the Contract Administrator will identify additional personnel representing the Contract Administrator and their respective roles and responsibilities for the Work.

D5. CONTRACTOR'S SUPERVISOR

D5.1 Further to C6.19, the Contractor shall employ and keep on the Work, at all times during the performance of the Work, a competent supervisor and assistants, if necessary, acceptable to the Contract Administrator. The supervisor shall represent the Contractor on the Site. The supervisor shall not be replaced without the prior consent of the Contract Administrator unless the supervisor proves to be unsatisfactory to the Contractor and ceases to be in his/her employ.

D5.2 Before commencement of Work, the Contractor shall identify his/her designated supervisor and any additional personnel representing the Contractor and their respective roles and responsibilities for the Work.

D5.2.1 Further to C5.5 Contract Administrator may give instructions or orders to the Contractor's supervisor and such instructions or orders shall be deemed to have been given to the Contractor.

D6. OWNERSHIP OF INFORMATION, CONFIDENTIALITY AND NON DISCLOSURE

D6.1 The Contract, all deliverables produced or developed, and information provided to or acquired by the Contractor are the property of the City and shall not be appropriated for the Contractors own use, or for the use of any third party.

D6.2 The Contractor shall not make any public announcements or press releases regarding the Contract, without the prior written authorization of the Contract Administrator.

D6.3 The following shall be confidential and shall not be disclosed by the Contractor to the media or any member of the public without the prior written authorization of the Contract Administrator;

- (a) information provided to the Contractor by the City or acquired by the Contractor during the course of the Work;
- (b) the Contract, all deliverables produced or developed; and
- (c) any statement of fact or opinion regarding any aspect of the Contract.

D6.4 A Contractor who violates any provision of D6 may be determined to be in breach of Contract.

D7. NOTICES

D7.1 Notwithstanding C22.3, all notices of appeal to the Chief Administrative Officer shall be sent to the attention of the Chief Financial Officer at the following facsimile number:

The City of Winnipeg
Chief Financial Officer

Facsimile No.: 204 949-1174

SUBMISSIONS

D8. AUTHORITY TO CARRY ON BUSINESS

D8.1 The Contractor shall be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba, or if the Contractor does not carry on business in Manitoba, in the jurisdiction where the Contractor does carry on business, throughout the term of the Contract, and shall provide the Contract Administrator with evidence thereof upon request.

D9. INSURANCE

- D9.1 The Contractor shall provide and maintain the following insurance coverage:
- (a) commercial general liability insurance, in the amount of at least two million dollars (\$2,000,000.00) inclusive, with The City of Winnipeg added as an additional insured; such liability policy to also contain a cross-liability clause, non-owned automobile liability and products and completed operations cover, to remain in place at all times during the performance of the Work;
 - (b) if applicable, Automobile Liability Insurance covering all motor vehicles, owned and operated and used or to be used by the Contractor directly or indirectly in the performance of the Service. The Limit of Liability shall not be less than \$2,000,000 inclusive for loss or damage including personal injuries and death resulting from any one accident or occurrence;
 - (c) an all risks Installation Floater carrying adequate limits to cover all machinery, equipment, supplies and/or materials intended to enter into and form part of any installation.
- D9.2 Deductibles shall be borne by the Contractor.
- D9.3 The Contractor shall provide the Contract Administrator with a certificate(s) of insurance, in a form satisfactory to the City Solicitor, at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than seven (7) Calendar Days from notification of the award of Contract.
- D9.4 The Contractor shall not cancel, materially alter, or cause the policy to lapse without providing at least thirty (30) Calendar Days prior written notice to the Contract Administrator.
- D9.5 The City shall have the right to alter the limits and/or coverages as reasonably required from time to time during the continuance of this agreement.

D10. SAFE WORK PLAN

- D10.1 The Contractor shall provide the Contract Administrator with a Safe Work Plan after the award of the contract.
- D10.2 The Safe Work Plan should be prepared and submitted in the format shown in the City's template which is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/Safety/default.stm>

CONTROL OF WORK

D11. COMMENCEMENT

- D11.1 The Contractor shall not commence any Work until he/she is in receipt of a notice of award from the City authorizing the commencement of the Work.
- D11.2 The Contractor shall not commence any Work on the Site until:
- (a) the Contract Administrator has confirmed receipt and approval of:
 - (i) evidence of authority to carry on business specified in D8;
 - (ii) evidence of the workers compensation coverage specified in C6.14; and
 - (iii) evidence of the insurance specified in D9;
 - (iv) the safe work plan list specified in D10.
 - (b) the Contractor has attended a meeting with the Contract Administrator, or the Contract Administrator has waived the requirement for a meeting.

D11.3 The Contractor shall commence the Work on the Site within three (3) Working Days of placing of an order, except where otherwise agreed at the time of ordering.

D12. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)

D12.1 Further to C6.23, the Contractor shall be the Prime Contractor and shall serve as, and have the duties of the Prime Contractor in accordance with The Workplace Safety and Health Act (Manitoba).

D13. SAFETY

D13.1 The Contractor shall be solely responsible for safety at the Site and for compliance with all laws, rules, regulations and practices required by the applicable safety legislation.

D13.2 The Contractor shall be solely responsible for securing the Site, and any existing facility thereon, and for the proper care and protection of the Work already performed.

D13.3 The Contractor shall do whatever is necessary to ensure that:

- (a) no person, property, right, easement or privilege is injured, damaged or infringed by reason of the Contractor's activities in performing the Work;
- (b) the health and safety of all persons employed in the performance of the Work or otherwise is not endangered by the method or means of its performance;
- (c) adequate medical services are available to all persons employed on the Work and at all times during the performance of the Work;
- (d) adequate sanitation measures are taken and facilities provided with respect to the Work;
- (e) pedestrian and other traffic on any public or private road or waterway is not unduly impeded, interrupted or endangered by the performance or existence of the Work or Plant;
- (f) fire hazards in or about the Work are eliminated;

D14. INSPECTION

D14.1 Before beginning or resuming operations upon any portion of the Work, the Contractor shall notify the Contract Administrator so as to enable him to arrange for inspection. If the Contractor fails to notify the Contract Administrator, the Contractor shall, if and when required by the Contract Administrator, forthwith take down or expose and redo that portion of the Work required to facilitate inspection. The cost of such taking down or exposure, and redoing, if any, shall be borne by the Contractor.

D14.2 If and when required by the Contract Administrator, the Contractor shall take down or expose forthwith any portion of the Work where the Contract Administrator determines that the Work is not in accordance with the Contract. The cost of such taking down or exposure, and redoing, if any, shall fall upon the City if the taking down or exposure indicates that the portion exposed was properly performed, but if otherwise the cost shall be borne by the Contractor.

D15. ORDERS

D15.1 The Contractor shall provide a local Winnipeg telephone number or a toll-free telephone number at which orders for service may be placed.

D16. RECORDS

D16.1 The Contractor shall keep detailed records of the services supplied under the Contract.

D16.2 The Contractor shall record, as a minimum, for each item listed on Form B: Prices:

- (a) user name(s) and addresses;

- (b) order date(s);
- (c) service date(s); and
- (d) description and quantity of services provided.

D16.3 The Contractor shall provide the Contract Administrator with a copy of the records for each quarter year within fifteen (15) Calendar Days of the end of that quarter.

MEASUREMENT AND PAYMENT

D17. INVOICES

D17.1 Further to C11, the Contractor shall submit an invoice for each portion of work performed delivered to:

The City of Winnipeg
Corporate Finance - Accounts Payable
4th Floor, Administration Building, 510 Main Street
Winnipeg MB R3B 1B9

Facsimile No.: 204 949-0864
Email: CityWpgAP@winnipeg.ca

D17.2 Invoices must clearly indicate, as a minimum:

- (a) the City's purchase order number;
- (b) date of delivery;
- (c) delivery address;
- (d) type and quantity of work performed;
- (e) the amount payable with GST and MRST shown as separate amounts; and
- (f) the Contractor's GST registration number.

D17.3 The City will bear no responsibility for delays in approval of invoices which are improperly submitted.

D17.4 Bids Submissions must be submitted to the address in B6.7.

D18. PAYMENT

D18.1 Further to C11, payment shall be in Canadian funds net thirty (30) Calendar Days after receipt and approval of the Contractor's invoice.

D18.2 Further to C11, the City may at its option pay the Contractor by direct deposit to the Contractor's banking institution.

WARRANTY

D19. WARRANTY

D19.1 Warranty is as stated in C12.

PART E - SPECIFICATIONS

GENERAL

E1. APPLICABLE SPECIFICATIONS AND DRAWINGS

- E1.1 These Specifications shall apply to the Work.
- E1.2 *The City of Winnipeg Standard Construction Specifications* in its entirety, whether or not specifically listed on Form B: Prices, shall apply to the Work.
- E1.2.1 *The City of Winnipeg Standard Construction Specifications* is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/Spec/default.stm>
- E1.2.2 The version in effect three (3) Business Days before the Submission Deadline shall apply.
- E1.2.3 Further to C2.4(d), Specifications included in the Bid Opportunity shall govern over *The City of Winnipeg Standard Construction Specifications*.
- E1.3 The following are applicable to the Work:

<u>Appendix No.</u>	<u>Specification Title</u>
B	Fugitive Emission Material Safety Data Sheet – Hydrogen Sulphide Gas (4 pages)

<u>Drawing No.</u>	<u>Drawing Name/Title</u>
D-8211	Water Supply Hose Traffic Ramp
SD-019	Backflow Protection Arrangement

- E1.4 Bidders are reminded that requests for approval of substitutes as an approved equal or an approved alternative shall be made in accordance with B5.

E2. HAZARDOUS MATERIALS

- E2.1 If asbestos or other hazardous materials are encountered during the Work of the Contract, the Contractor shall stop all work and notify the Contract Administrator immediately. Removal of hazardous materials shall be dealt with by the City and the Contractor shall await further instruction by the Contract Administrator.

E3. COMPLETION OF WORK

- E3.1 The Contractor shall commence the Work (notify affected residences) within 24 hours after notification (callout) from the Contract Administrator and achieve a minimum production rate of 500 metres per day until the order is complete.

E4. CONFINED SPACE ENTRY

- E4.1 The Contractor shall be aware that Hydrogen Sulphide Gas is present in all underground structures connected to the City's sewer systems, and has been known to accumulate in concentrations sufficient to cause serious harm or death to personnel who are not using adequate Personal Protective Equipment. Refer to Fugitive Emission Material Safety Data Sheet for details.
- E4.2 The Contractor's attention is drawn to the Province of Manitoba Workplace Safety and Health Act ('the Act'), and the Regulations and Guidelines there-under pertaining to Confined Entry Work and in particular the requirements for conducting hazard/risk assessments and providing Personal Protective Equipment (PPE).
- E4.2.1 Further to E4.2, the Contractor shall use an approved and properly maintained Supplied Air Breathing Apparatus when entering and working in sewers, manholes, and catch basins.

E5. WATER SUPPLY

- E5.1 Further to specifications CW 1120, section 3.1, CW 2140 and CW 2145, water supply for the Work may be taken from City of Winnipeg hydrants in accordance with the following:
- (a) Water shall be taken from “white-cap” hydrants only.
 - (b) Submit a list of proposed “white-cap” hydrant locations to the City of Winnipeg Water Services Division (WSD) for approval. If a proposed hydrant location is not approved, the Contractor shall submit an alternate hydrant location for approval.
 - (c) Only hydrants approved by WSD shall be used for water supply.
 - (d) The Contractor shall supply and use a Backflow Prevention Arrangement as shown on Standard Detail Drawing SD-019 when taking water from City hydrants. WSD will supply a meter and locks for the Backflow Prevention Arrangement.
 - (e) The Contractor is permitted to turn approved hydrants on and off provided the Contractor has received training by WSD and the turn-ons and turn-offs are done in the presence of the Contract Administrator.
 - (f) Hydrants approved for use shall be considered to be “in Contractor’s control” from the time the WSD has turned the hydrant on until the Contractor has notified WSD the hydrant is no longer being used and the meter box has been removed.
 - (g) Between November 1 and April 30 of any year, the Contractor shall take all necessary precautions to prevent freezing of hydrants and related appurtenances for hydrants in their control and shall be responsible to pump out hydrants turned off by Emergency Services.
 - (h) If a hydrant or appurtenance is damaged due to freezing or improper turn on or turn off procedures while in the Contractor’s control, WSD will assess the damage and determine if WSD will repair the damage or if the Contractor will be responsible to repair the damage. Costs for repairs completed by WSD will be deducted from payments owing the Contractor. Repairs completed by the Contractor will be at the Contractor’s expense.
 - (i) Erect and maintain signage (bump signs) warning oncoming traffic of hose crossings to the satisfaction of the Contract Administrator and the Manual of Temporary Traffic Control. Construct ramps as shown on attached drawing D-8211.
 - (j) Direct hook-up of sewer flushing equipment to a hydrant is not permitted unless approved by the Contract Administrator.
 - (k) WSD may at any time instruct the Contractor to make other arrangements for hydrant turn-ons and turn offs.
- E5.2 Further to Section 3.7 of CW 1120, charges incurred for the permit and water meters shall be paid for by the Contractor when taken out. The Contractor shall forward the invoice to the Contract Administrator for reimbursement. The billing for water usage sent to the Contractor shall be forwarded to the Contract Administrator for payment. The Bid Opportunity number shall be noted on each permit.

E6. SEWER CLEANING

- E6.1 This specification amends and supplements specification CW 2140.
- E6.2 Further to Section 3.5;
- (a) Operate flushing equipment so that the pressurized nozzle is not stationary at any time. If the nozzle is stationary for any amount of time the Contractor shall turn off the nozzle or reduce the water pressure.
 - (b) Do not clean more than one manhole to manhole section from any particular manhole (double run) unless approved by the Contract Administrator.
 - (c) Remove 95% of all loose floating, solid or semi-solid debris. For sewers smaller than 250mm in diameter the Contractor shall only be required to remove the minimum amount of debris required to allow for the passage of self-propelled inspection equipment.

- (d) No decanting shall occur within 3 sewer sections upstream of a lift station. If decanting is required within close proximity of a lift station it shall be done immediately downstream of the lift station.

E7. SEWER AND MANHOLE INSPECTION

E7.1 This specification amends and supplements specification CW 2145.

E7.2 Further to sections 3.1 and 3.2:

- (a) All camera and video recording equipment shall be approved by the Contract Administrator for use on this Contract.
- (b) The Contractor shall not change or alter the approved camera/recording unit setup without notifying the CA.
- (c) A videocassette recorder is not required.

E7.3 Replace Section 3.4 with:

- (a) Ensure each operator is fully trained in all aspects of sewer inspection and is capable of making accurate observations and recording all conditions that may be encountered in the sewers.
- (b) Perform coding using operators who can demonstrate proficiency coding in accordance with the requirements of the WRc "Manual of Sewer Condition Classification 3rd Edition".

E7.4 Replace Section 3.5 with:

- (a) Perform sewer condition coding in accordance with the requirements of the WRc Manual of Sewer Condition Classification 3rd Edition.
- (b) Record place names in accordance with clause 3.9.4 of the CW 2145.

E7.5 Further to Section 3.7.4, operators failing to meet the accuracy requirements on two occasions will not be permitted to code on the remainder of the Contract until they can demonstrate to the Contract Administrator that they can code in accordance with the requirements of the WRc Manual of Sewer Condition Classification 3rd Edition.

E7.6 Revise section 3.8 as follows:

- (a) Provide 400 TV lines of resolution for digital recordings as determined by EIA Resolution Chart (1956) or ISO 12233 Resolution Chart;

E7.7 Revise section 3.11 as follows:

- (a) Video shall be hardware encoded and captured direct to MPEG-2 or MPEG-4 video (MPEG-4 is preferred);
- (b) Capture video at full D1 resolution (720 X 480 pixels) with 29.97 fps and a minimum average bit rate of 6 Mbits/s.
- (c) Inspections will be recorded on high-quality archival grade DVDs from such manufacturers as Verbatim or Taiyo Yuden which shall be approved by the Contact Administrator.
- (d) The Contractor shall supply a portable 2.5-inch hard disk drive (HDD), complete with all operating software, power adaptors and USB cables, containing all video inspections and coding data to the City upon completion of the project or for each years work if contract is extended. The HDD shall be sized appropriately to accommodate all the above mentioned files and have dual USB 3.0 and USB 2.0 compatibility with a minimum data transfer rate of 480 Mb/s.
- (e) The Contractor shall maintain backup copies of all digital video and inspection data submissions until the Warranty period expires.

E7.8 Further to 3.13, a paper or "hard copy" of the inspections is not required.

E7.9 Revise 3.17.3 to read “Clean and inspect sewers at the same time, use flusher where required to ensure the following:”

E7.10 Sewer inspections on 900mm and larger diameter sewer pipe will not require pre-cleaning unless determined by the Contract Administrator.

E8. MISCELLANEOUS CLEANING

E8.1 Perform Miscellaneous Cleaning of large diameter sewers, lift station sumps and other unforeseen locations where requested by the Contract Administrator.

E8.2 Miscellaneous cleaning will be measured on a time basis and paid for at the Contract Unit Price for “Miscellaneous Cleaning”. The amount to be paid will be the total number of hours spent cleaning lift stations sumps, sewers and at other miscellaneous locations in this contract, accepted and measured by the Contract Administrator.

E9. REMOVAL OF EXCESSIVE GREASE AND/OR ROOTS

E9.1 Grease and or roots that cannot be removed through typical cleaning efforts shall be cut and removed from the sewer as directed by the Contract Administrator.

E9.2 Use hydraulically driven saw or blade cutters to remove grease and roots. Flushing the sewer or the use of “spin nozzles” to remove grease will not be permitted.

E9.2.1 Remove grease and or roots to within 15 millimetres of the inside surface of the sewer.

E9.2.2 Monitor the entire removal operation and while the removal equipment is travelling within the pipe to reach the work area by closed circuit television (CCTV).

E9.3 The removal of grease and or roots from within a single manhole-to- manhole sewer segment will be considered as one (1) pay item regardless of the amount of grease and or roots removed from within that sewer segment.

E9.3.1 Measurement will be on a unit basis and paid for at the Contract Unit Price for each “Removal of Excessive Grease and or Roots per Sewer Segment”. The number of units to be paid for will be the total amount of manhole-to-manhole sewer segments in which grease and or roots have been removed in accordance with this specification, accepted and measured by the Contract Administrator.

E10. MAN-ENTRY VIDEO INVESTIGATIONS - >1800MM

E10.1 Where directed by the Contract Administrator the Contractor shall perform man-entry investigations of pipes larger than 1800mm. Pipe wall integrity shall be examined by hand using a hammer or scraping tool to investigate integrity of the pipe wall. Man-entry investigations shall be recorded on video meeting the specifications described herein.

E10.2 Supplied air breathing apparatus shall be used for all man-entry investigations, no exceptions.

E11. CALLOUT – MOBILIZATION OF EQUIPMENT TO SITE

E11.1 A fee will be paid for each callout to notify residents and mobilize equipment and crew to the site. If the callout is for a job that may span more than one day the fee is only to be paid once not on a per day basis. If a callout consists of several sites the callout fee will only be applied once and will not include mobilizing from site to site.

E12. TRAFFIC CONTROL AND MAINTENANCE OF ACCESS

E12.1 Further to section 3.7 of CW 1130 of the General Requirements, the Contractor shall be responsible to redirect and maintain traffic with appropriate signing in accordance with The City of Winnipeg “Manual of Temporary Traffic Control in Work Areas on City Streets” at all times.

Refer to <http://www.winnipeg.ca/publicworks/Transportation/manual-2008-03-27.pdf> for further details.

- E12.2 Work shall not be carried out on Regional Streets between 07:00 to 09:00 hours and 15:30- to 17:30 hours Monday to Friday unless approved by the Contract Administrator. Regional streets are listed in the "Manual for Temporary Traffic Control".
- E12.3 Should the City of Winnipeg require that Work on Regional Streets be carried out at night, on Sundays or on public holidays, the Contractor shall comply without additional compensation being considered to meet these requirements.
- E12.4 Further to section 3.8 of CW 1130 of the General Requirements, parking restriction signing on Regional Streets will be done by The City of Winnipeg, Traffic Services Branch.
- E12.5 The Contractor will be responsible for parking restriction signing required to perform the Work on non-regional and local residential streets. "No Parking" signs will be provided for Contractor's use.
- E12.6 Erect signs no sooner than 24 hours before the Work commences at a particular location.
- E12.7 Record the license plate numbers of vehicles already parked within the limits where the parking restriction signs are placed and fax the information to Winnipeg Police Services, Traffic Branch at 986-6998.
- E12.8 Promptly remove parking restriction signs once the Work at that location is completed. Signs shall not be left in place over a weekend if no Work will be done at that location.
- E12.9 Return signs immediately upon completion of the Work.
- E12.10 Further to section 3.6 of CW 1130 of the General Requirements, maintain safe pedestrian crossing at intersections at all times. Only one pedestrian crossing at an intersection is to be blocked at any one time. If more than one pedestrian crossing is blocked at an intersection at the same time, the Contractor shall provide flag persons to safely escort pedestrians across the intersection.
- E12.11 Do not park company or private vehicles inside the signed work zone in a manner that will block sightlines for vehicles and pedestrians approaching and crossing intersections.

E13. NOTICES TO RESIDENTS

- E13.1 Further to CW 2140 Section 3.5 and CW 2145, the Contractor shall deliver notices provided by the Contract Administrator to residents on the affected sewer lines by 16:00 hours 2 days prior to the use of flushing equipment for either sewer cleaning or sewer inspection.
- E13.2 The notices will be in effect for a 3 day period which the Contractor will indicate with dates stamped on the envelope. The Contractor shall make every effort to complete the affected sewer lines within the notification window.
- E13.3 All costs associated with delivering notices shall be included in the price bid for "Sewer Cleaning" and "Sewer Inspection" and no separate measurement or payment will be made.

E14. DAMAGE TO CITY AND PRIVATE PROPERTY

- E14.1 All damage to City and private property caused by cleaning or inspection operations is the responsibility of the Contractor and shall be repaired to the satisfaction of the Contract Administrator. All costs associated with these repairs shall be at the Contractors own expense.
- E14.2 Notify the Contract Administrator immediately when damage to property occurs.
- E14.3 The Contractor shall provide written reports to the Contract Administrator for each property attended for investigation of damage. Reports shall include photographs of all damage, dates

and times, verbal or written agreements with property owner and all actions taken or proposed to rectify the damage.

- E14.4 Sewers may be located in easements through private property or City owned parklands and Right-of Ways where no paved access may exist. It will be the Contractors responsibility to identify these sewers and arrange for access and to restore any surface damage to private and City owned property to the satisfaction of the Contract Administrator.
- E14.5 Sewer backup or “blow-back” on private property resulting from cleaning or inspection activities is not acceptable and shall be avoided at all costs. It is expected that where this possibility exists the Contractor shall take appropriate measures such as making modifications to cleaning equipment and/or taking additional time to clean such sewers.
 - E14.5.1 Cleanup of affected residences shall be done by cleaning professionals. Under no circumstances are cleaning equipment operators to enter residences unless they are neat and presentable and the Contract Administrator has received a criminal record search for that individual.
 - E14.5.2 Where actual sewage or “grey water” has flooded private property the Contractor shall immediately clean and disinfect all affected areas as well as flush all weeping tile. The Contractor shall immediately hire an independent IICRC certified water damage or flood restoration contractor to assess any damage to contaminated building materials such as drywall, insulation, carpets, weeping tile or sub-floors, and immediately make any required repairs.
 - E14.5.3 If a residence is uninhabitable as a result of a sewer back-up the Contractor shall pay for reasonable hotel accommodations and meals for all affected residents.
- E14.6 The Contractor shall provide the Contract Administrator with a 24hr contact number to arrange for immediate clean-up and repair of private property.

APPENDIX A SECURITY CLEARANCE

1. SECURITY CLEARANCE

- 1.1 Each individual proposed to perform the following portions of the Work:
 - (a) any Work on private property;
 - (b) any Work within City facilities other than:
 - (i) an underground structure such as a manhole;
 - (ii) in areas and at times normally open to the public;
 - (c) communicating with residents and homeowners in person or by telephone;
- 1.2 Each Individual shall be required to obtain a Criminal Record Search Certificate from the police service having jurisdiction at his/her place of residence. or
 - (a) BackCheck, forms to be completed can be found on the website at: <http://www.backcheck.net/> ; or
 - (b) Core of Commissionaires, forms to be completed can be found on the website at: <http://www.commissionaires.mb.ca/> .
- 1.3 Prior to the commencement of any Work specified in 1.1, and during the term of the Contract if additional or replacement individuals are proposed to perform Work, the Contractor shall supply the Contract Administrator with a Criminal Record Search Certificate obtained not earlier than one (1) year prior to the Submission Deadline, or a certified true copy thereof, for each individual proposed to perform such Work.
- 1.4 Any individual for whom a Criminal Record Search Certificate is not provided, or for whom a Criminal Record Search Certificate indicates any convictions or pending charges related to property offences or crimes against another person, will not be permitted to perform any Work specified in 1.1.
- 1.5 Any Criminal Record Search Certificate obtained thereby will be deemed valid for the duration of the Contract subject to a repeated records search as hereinafter specified.
- 1.6 Notwithstanding the foregoing, at any time during the term of the Contract, the City may, at its sole discretion and acting reasonably, require an updated criminal records search. Any individual who fails to provide a satisfactory Criminal Record Search Certificate as a result of a repeated criminal records search will not be permitted to continue to perform any Work specified in 1.1.

APPENDIX B

FUGITIVE EMISSION MATERIAL SAFETY DATA SHEET – HYDROGEN SULPHIDE GAS

Section IV: Fire and Explosion Hazard

Flammability: Yes

Means of Extinction: Stop flow of gas if possible. Water spray, dry chemical, "alcohol foam" or carbon dioxide may be used as extinguishing agents.

Special Procedures: When heated to decomposition, it emits highly toxic fumes of sulfur and sulfur dioxide.

Upper Explosive Limit: 44% (in air)

Lower Explosive Limit: 4.0 % (in air)

Autoignition Temperature: 260 °C

Section V: Reactivity Data

Chemical Stability: Stable (as a gas)

Incompatibility to Other Substances: Hydrogen sulfide may react violently with oxidizing agents (eg. peroxides, nitrates). Hydrogen sulfide is incompatible with metals and metal oxides.

Reactivity: Normally stable

Hazardous Polymerization: Will not occur

Section VI: Toxicological Properties

Routes of Entry: Inhalation is the major route of entry. However, eye and skin contact may also have adverse effects.

Health Effects - Acute:

Respiratory: At concentrations of 0.13 to 30 ppm, the odour is obvious and unpleasant. At 50 ppm, dryness and irritation of the nose and throat occurs. Prolonged exposure may cause a runny nose, cough, hoarseness, shortness of breath, and pneumonia. At 100 to 150 ppm, there is a temporary loss of smell. At 200 to 250 ppm, H₂S causes severe irritation as well as symptoms such as headache, vomiting and dizziness. Prolonged exposure may cause pulmonary edema (fluid build-up in the lungs). Exposure for 4 to 8 hours can cause death. Concentrations of 300 to 500 ppm cause these same effects sooner and more severely. Death can occur in 1 to 4 hours. At 500 ppm, excitement, headache, dizziness, staggering, unconsciousness and respiratory failure occur in 5 minutes to 1 hour. Death can occur in 30 minutes to 1 hour. Exposures above 500 ppm rapidly cause unconsciousness and death. Severe exposures which do not result in death may cause long-term symptoms such as memory loss, paralysis of facial muscles or nerve tissue damage.

Hydrogen Sulfide Gas

Eye and Skin Irritation: Inflammation and irritation of the eyes can occur at very low airborne concentrations (sometimes less than 10 ppm). Exposure over several hours or days may result in "gas eyes" or "sore eyes" with symptoms of scratchiness, irritation, tearing and burning. Above 50 ppm, there is intense tearing, blurring of vision and pain when looking at light; the victim may see rings around bright lights. Most symptoms disappear when exposure ceases. However, in serious cases the eye may be permanently damaged. The gas may irritate the skin, although this is rare.

Health Effects - Chronic: Currently, the chronic effects of exposure to hydrogen sulfide gas are not known. Long-term exposure to hydrogen sulfide may cause fatigue, headache, dizziness, hoarseness, cough and irritability. However, these symptoms are not specific to hydrogen sulfide exposure and may be due to other causes.

Carcinogenicity: Not carcinogenic according to WHMIS criteria.

Teratogenicity: Not known

Mutagenicity: Not known

Section VII: Preventative Measures

Personal Protective Equipment:

Eyes: A full face-piece respirator may be required to prevent/reduce eye irritation.

Clothing: Wear appropriate shoes, gloves and clothing to guard against mechanical hazards.

Respirator: If engineering controls are not effective in controlling exposure to hydrogen sulfide, respiratory protection may be required. For concentrations known to be below 100 ppm a NIOSH approved full-face air-purifying respirator fitted with H₂S cartridges can be used, or a supplied-air system can be used. For concentrations exceeding 100 ppm, emergency or planned entry into unknown concentrations, or IDLH (Immediately Dangerous to Life and Health) conditions use a NIOSH approved full-face supplied air respirator (SAR) or self contained breathing apparatus (SCBA). Note: The IDLH concentration for hydrogen sulfide is 100 ppm.

Engineering Controls: General and local ventilation should be used to reduce exposure to hydrogen sulfide gas. Additional engineering controls such as process enclosure, may also be required.

Leak and Spill Procedures: Not likely with hydrogen sulfide gas.

Waste Disposal: Not applicable

Storage Requirements: Not applicable

Section VIII: First Aid and Emergency Measures

Eyes: If irritation occurs, immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 20 minutes. Obtain medical attention immediately.

Skin: Irritation of skin by contact with hydrogen sulfide gas is unlikely.

Ingestion: Ingestion is not a route of entry for hydrogen sulfide gas.

Inhalation: Take proper precautions to ensure your own safety before attempting rescue eg. wear appropriate protective equipment, use the "buddy" system. Remove source of contamination or move victim to fresh air. If breathing has stopped, trained personnel should begin artificial respiration or if the heart has stopped, cardiopulmonary resuscitation (CPR) immediately. Oxygen may be beneficial if administered by a person trained in its use, preferably on a physician's advice. Obtain medical attention immediately.

Section IX: Preparation Information

Prepared By: The City of Winnipeg
Human Resource Development Branch
Occupational Hygiene Branch
764-167 Lombard Avenue
Winnipeg, Manitoba
R3B 0V3
Phone: (204) 986-3522

Revised: March 26, 1999

Replaces MSDS Dated: March 21, 1995

References:

1. Canadian Centre for Occupational Health and Safety, CCINFO, 98-4.

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