

STANDARD PROFESSIONAL SERVICES CONTRACT



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PROJECT: DEVELOPMENT OF BOREHOLES FOR
SENEKAL/MATWABENG
(MIG/FS/0763/W/09/11)

CLIENT: SETSOTO LOCAL MUNICIPALITY

CONSULTANT: ISA & PARTNERS (PTY) LTD
CONSULTING ENGINEERS AND PROJECT MANAGERS

SERVICE: DESIGN AND CONSTRUCTION SUPERVISION FOR THE
DEVELOPMENT OF BOREHOLES FOR
SENEKAL/MATWABENG

AGREEMENT DATE:
(Refer to C1-1)

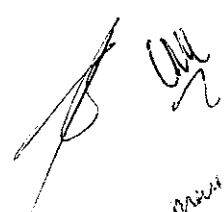
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GENERAL CONDITIONS OF CONTRACT

DEFINITION

1.

In the Contract, the following words and expressions shall have the meanings indicated, except where the context otherwise requires. Defined terms and words are signified in the text of the Contract by the use of capital initial letters.

Contract The Contract signed by the Parties and of which these General Conditions of Contract form part.

Contract Data Specific data, which together with these General Conditions of Contract, collectively describe the risks, liabilities and obligations of the contracting Parties and the procedures for the administration of the Contract.

Contract Price The price to be paid for the performance of the Services in accordance with the Pricing Data.

Day A calendar day.

Defect A part of the Services, as performed, which does not comply with the requirements of the Contract.

Deliverable Any measurable, tangible, verifiable outcome, result or item that must be produced or completed;

Employer

The contracting party named in the Contract who employs the Service Provider.

Force Majeure

An event which is beyond the reasonable control of a Party and which makes a Party's performance of its obligations under the Contract impossible or so impractical as to be considered impossible under the circumstances.

Key Persons

Persons who are named as such in the Contract Data who will be engaged in the performance of the Services.

Others

Persons or organizations who are not the Employer, the Service Provider or any employee, subcontractor, or supplier of the Service Provider.

Parties

The Employer and the Service Provider.

Period of Performance

The period within which the Services are to be performed and completed, commencing from the Start Date.

Personnel

Persons hired by the Service Provider as employees and assigned to the performance of the Services or any part thereof.

Personnel Schedule

A schedule naming all Personnel and Key Persons.

Pricing Data

Data that establishes the criteria and assumptions that were taken into account when developing the Contract Price and the record of the components that make up the Contract Price.

Project

The project named in the Contract Data for which the Services are to be provided.

Scope of Work

The document which defines the Employer's objectives and requirements and specifies the Services which must, or may, be provided under the Contract.

Service Provider

The contracting party named in the Contract Data who is employed by the Employer to perform the Services described in the Contract, and legal successors to the Service Provider and legally permitted assignees.

Services

The work to be performed by the Service Provider pursuant to the Contract as described in the Scope of Work.

Start date

The date on which the Services are to commence, as stated in the Contract Data

Subcontractor

A person or body corporate who enters into a subcontract with the Service Provider to perform part of the Services.

2.

INTERPRETATION

2.1

Unless inconsistent with the context, an expression which denotes:

- a) any gender includes the other genders;
- b) a natural person includes a juristic person and vice versa;
- c) the singular includes the plural and vice versa.

2.2

If there is any conflict between the provisions of these General Conditions of Contract and the Contract Data, the provisions of the Contract Data shall prevail.

2.3

The clause headings shall not limit, alter or affect the meaning of the Contract.

3.

GENERAL

3.1

Governing law

Law governing the Contract shall be the law of the Republic of South Africa.

3.2

Change in legislation

If after the commencement of the Contract, the cost or duration of the Services is altered as a result of changes in, or additions to, any statute, regulation or bye-law, or the requirements of any authority having jurisdiction over any matter in respect of the Project, then the Contract Price and time for completion shall be adjusted in order to reflect the impact of those changes, provided

that, within 14 Days of first having become aware of the change, the Service Provider furnished the Employer with detailed justification for the adjustment to the Contract Price or Period of Performance (or both).

3.3 Language

- 3.3.1 The language of the Contract and of all communications between the Parties shall be English.
- 3.3.2 All reports, recommendations and reports prepared by the Service Provider under the Contract shall be in English.

3.4 Notices

- 3.4.1 Any notice, request, consent, approvals or other communication made between the Parties pursuant to the Contract shall be in writing and forwarded to the address specified in the Contract Data. Such communication shall be deemed to have been made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or one week after having been sent by registered post, or unless otherwise indicated in the Contract Data, when sent by e-mail or facsimile to such Party.
- 3.4.2 A Party may change its address for receipt of communications by giving the other Party 30 Days advance notice of such change.

3.5 Location

The Services shall be performed at such locations as are specified in the Contract Data, and where the location of a particular task is not so specified, at such locations as the Employer may approve.

3.6 Publicity and publication

Unless otherwise stated in the Contract Data, the Service Provider shall not release public or media statements or publish material related to the Services or Project within two (2) years of completion of the Services without the written approval of the Employer, which approval by the Employer shall not be unreasonably withheld.

3.7 Confidentiality

Both parties shall keep all sensitive information obtained by them in the context of the Contract confidential and shall not divulge it without the written approval of the other Party.

3.8 Variations

- 3.8.1 The Employer may, without changing the objectives or fundamental scope of the Contract, order variations to the Services in writing or may request the Service Provider to submit proposals, including the time and cost implications, for variations to the Services.
- 3.8.2 The reasonable cost of preparation and submission of such proposals and the incorporation into the Contract of any variations to the Services ordered by the Employer, including any change in the Contract Price, shall be agreed between the Service Provider and the Employer.
- 3.8.3 Where a variation is necessitated by default or breach of Contract by the Service Provider, any additional cost attributable to such variation shall be borne by the Service Provider.



3.9 Changes to the Contract Price or Period of Performance

- 3.9.1 The Service provider is entitled to apply to the Employer for a change in Contract Price or the Period of Performance in the event that:
- (a) a change in legislation takes place in accordance with the provisions of Clause 3.2; (b) a variation to the Services is made in accordance with the provisions of Clause 3.8;
 - (c) the Employer or Others do not perform an action, provide access to people, places or things or perform work in accordance with the programme (see Clause 3.15);
 - (d) the contract is suspended in accordance with the provisions of Clause 8.5;
 - (e) the contract is restarted following a suspension; or
 - (f) an event occurs which neither Party could prevent and which prevents the Service Provider from completing the Services or a part thereof
- 3.9.2 The Service Provider shall submit proposals to change the Contract Price or the Period for Completion (or both) to the Employer within 6 weeks of becoming aware of an event described in 3.9.1 occurring, failing which, the Service Provider shall not be entitled to a change in the Contract Price or Period of Performance.
- 3.9.3 The Employer shall assess the changes to the Contract Price on the effect of the event on the Services based on time-based fees.
- 3.9.4 The Employer shall assess the changes to the Period of Performance on the basis of the time that planned completion as shown on the latest approved programme is delayed.

3.10 Sole agreement

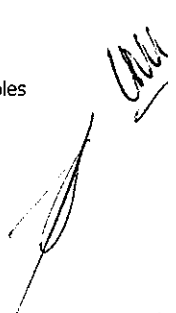
The Contract constitutes the sole agreement between the Parties for the performance of the Services and any representation not contained therein shall not be of any force or effect. No amendments will be of any force or effect unless reduced to writing and signed by both Parties.

3.11 Indemnification

The Service Provider shall, at his own expense, indemnify, protect and defend the Employer, its agents and employees, from and against all actions, claims, losses and damage arising from any negligent act or omission by the Service Provider in the performance of the Services, including any violation of legal provisions, or rights of others, in respect of patents, trade marks and other forms of intellectual property such as copyrights.

3.12 Penalty

- 3.12.1 If due to his negligence, or for reasons within his control, the Service Provider does not perform the Services within the Period of Performance, the Employer shall without prejudice to his other remedies under the Contract or in law, be entitled to levy a penalty for every Day or part thereof, which shall elapse between the end of the period specified for performance, or an extended Period of Performance, and the actual date of completion, at the rate and up to the maximum amount stated in the Contract Data.
- 3.12.2 If the Employer has become entitled to the maximum penalty amount referred to in 3.12.1, he may after giving notice to the Service Provider:
- a) terminate the Contract
 - b) complete the Service at the Service Provider's cost.

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3.13 Equipment and materials furnished by the Employer

- 3.13.1 Equipment and materials made available to the Service Provider by the Employer, or purchased by the Service Provider with funds provided by the Employer for the performance of the Services shall be the property of the Employer and shall be marked accordingly. Upon termination or expiration of the Contract, the Service Provider shall make available to the Employer an inventory of such equipment and materials and shall dispose of them in accordance with the Employer's instructions.
- 3.13.2 The Service Provider shall, at his own expense, insure the equipment and materials referred to in 3.13.1 for their full replacement value.

3.14 Illegal and impossible requirements

The Service Provider shall notify the Employer immediately, on becoming aware that the Contract requires him to undertake anything which is illegal or impossible.

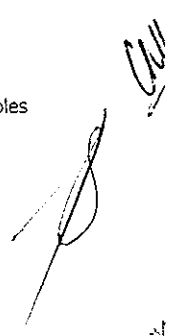
3.15 Programme

- 3.15.1 The Service Provider shall, within the time period set out in the Contract Data and whenever a programme is amended or revised, submit for the Employer's approval a programme for the performance of the Services which shall, *inter alia*, include:
- the order and timing of operations by the Service Provider and any actions, access to people, places and things and work required of the Employer and Others;
 - the dates by which the Service Provider plans to complete work needed to allow the Employer and Others to undertake work required of them;
 - provisions for float;
 - the planned completion of the Services or part thereof in relation to a Period of Performance; and
 - other information as required in terms of the Scope of Work or Contract Data.
- 3.15.2 The Employer may, during the course of the Contract, request the Service Provider to amend the programme. Where this is not practicable, the Service Provider shall advise the Employer accordingly and advise him of alternative measures, if any, which might be taken.
- 3.15.3 A programme shall be deemed to be approved if the Employer fails to approve such programme or give reasons for not approving a programme within three weeks of receipt of a request by the Service Provider to approve a programme.
- 3.15.4 The Service Provider shall update the programme:
- unless otherwise stated in the Contract Data, every three months to reflect actual progress to date;
 - whenever a change in Period of Performance or Contract Price is applied for; and
 - whenever a change in the Period of Performance is changed by the Employer

and submit such revised programme to the Employer for approval.

3.16 Price adjustment to time-based fees for inflation

- 3.16.1 Time-based fees which are stated in the Pricing Data as a unique rate and are not calculated by multiplying the total annual cost of employment contained, shall unless otherwise stated in the Contract Data, be adjusted in terms of 3.16.2 on each anniversary of the Starting Date.



3.16.2 The adjustment to the time-based fees shall be equal to:

$$(CPI_n - CPI_s) / CPI_s$$

Where CPI_s = the indices specified in the Contract Data during the month in which the start date falls

CPI_n = the latest indices specified in Contract Data during the month in which the anniversary of the Start Date falls

4. EMPLOYER'S OBLIGATIONS

4.1 Information

- 4.1.1 The Employer shall timeously provide to the Service Provider, free of cost, all available information and data in the Employer's possession which may be required for the performance of the Services.
- 4.1.2 The Employer shall provide the Service Provider with reasonable assistance required in obtaining other relevant information that the latter may require in order to perform the Services.

4.2 Decisions

The Employer shall, within a reasonable time, give his decision on any matter properly referred to him in writing by the Service Provider so as not to delay the performance of Services.

4.3 Assistance

4.3.1 The Employer shall co-operate with the Service Provider and shall not interfere with or obstruct the proper performance of the Services. The Employer shall as soon as practicable

- a) authorise the Service Provider to act as his agent insofar as may be necessary for the performance of the Services;
- b) provide all relevant data, information, reports, correspondence and the like, which become available;
- c) procure the Service Provider's ready access to premises, or sites, necessary for the performance of the Services;
- d) assist in the obtaining of all approvals, licenses and permits from state, regional and municipal authorities having jurisdiction over the Project, unless otherwise stated in the Contract Data;

4.3.2 Unless otherwise communicated, the authorised and designated person named in the Contract Data has complete authority in giving instructions and receiving communications on the Employer's behalf and interpreting and defining the Employer's policies and requirements in regard to the Services.

4.4 Services of Others

The Employer shall, at his own cost, engage such Others as may be required for the execution of work not included in the Services, but which is necessary for the completion of the Project.

4.5 Notification of material change or defect

The Employer shall immediately advise the Service Provider on becoming aware of:

- a) any matter other than a change in legislation which will materially change, or has changed the Services; or
- b) a material defect or deficiency in the Services.

4.6 Issue of instructions

Where the Service Provider is required to administer the work or services of Others, or any contract or agreement, on behalf of the Employer, then the Employer shall issue instructions related to such work, services, contract or agreement only through the Service Provider.

4.7 Payment of Service Provider

The Employer shall pay the Service Provider the Contract Price in accordance with the provisions of the Contract.

5. SERVICE PROVIDER'S OBLIGATIONS

5.1 General

5.1.1 The Service Provider shall perform the Services in accordance with the Scope of Work with all reasonable care, diligence and skill in accordance with generally accepted professional techniques and standards.

5.1.2 If the Service Provider is a joint venture or consortium of two or more persons, the Service Provider shall designate one person to act as leader with authority to bind the joint venture or consortium. Neither the composition nor the constitution of the joint venture or consortium shall be altered without the prior consent in writing of the Employer, which shall not be unreasonably withheld.

5.2 Exercise of authority

The Service Provider shall have no authority to relieve Others appointed by the Employer to undertake work or services on the Project of any of their duties, obligations, or responsibilities under their respective agreements or contracts, unless expressly authorised by the Employer in response to an application by the Service Provider in writing to do so.

5.3 Designated representative

Unless otherwise communicated, the authorised and designated person named in the Contract Data has complete authority to receive instructions from and give information to the Employer on behalf of the Service Provider.

5.4 Insurances to be taken out by the Service Provider

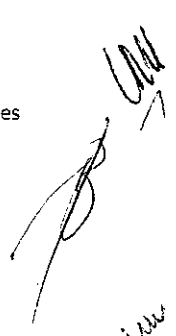
5.4.1 The Service Provider shall as a minimum and at his own cost take out and maintain in force all such insurances as are stipulated in the Contract Data.

5.4.2 The Service Provider shall, at the Employer's request, provide evidence to the Employer showing that the insurance required in terms of Clause 5.4.1 has been taken out and maintained in force.

5.5 Service Provider's actions requiring Employer's prior approval

The Service Provider shall obtain the Employer's prior approval in writing before taking, inter alia, any of the following actions:

- a) appointing Subcontractors for the performance of any part of the Services,
- b) appointing Key Persons not listed by name in the Contract Data.
- c) any other action that may be specified in the Contract Data.



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5.6 Co-operation with Others

If the Service Provider is required to perform the Services in co-operation with Others he may make recommendations to the Employer in respect of the appointment of such Others. The Service Provider shall, however, only be responsible for his own performance and the performance of Subcontractors unless otherwise provided for.

5.7 Notice of change by Service Provider

On becoming aware of any matter which will materially change or has changed the Services, the Service Provider shall within 14 Days thereof give notice to the Employer.

6. CONFLICTS OF INTEREST

6.1 Service Provider not to benefit from commissions, discounts, etc.

The remuneration of the Service Provider under the Contract shall constitute the Service Provider's sole remuneration in connection with the Contract, or the Services, and the Service Provider shall not accept for his own benefit any trade commission, discount, or similar payment in connection with activities pursuant to the Contract, or in the discharge of his obligations under the Contract, and shall use his best efforts to ensure that the Personnel, any Subcontractors, and agents of either of them shall, similarly, not receive any additional remuneration.

6.2 Royalties and the like

The Service Provider shall not have the benefit, whether directly or indirectly, of any royalty or of any gratuity or commission in respect of any patented or protected article or process used in or for the purposes of the Contract, or Project, unless so agreed by the Employer in writing.

6.3 Independence

The Service Provider shall refrain from entering into any relationship which could be perceived as compromising his independence of judgement, or that of Subcontractors or Personnel.

7. SERVICE PROVIDER'S PERSONNEL

7.1 General

- 7.1.1 The Service Provider shall employ and provide all qualified and experienced Personnel required to perform the Services.
- 7.1.2 Where required in terms of the Contract, the Service Provider shall provide Key Persons as listed in the Contract Data to perform specific duties. If at any time, a particular Key Person cannot be made available, the Service Provider may engage a replacement who is equally or better qualified to perform the stated duty, subject to the Employer's approval, which approval shall not be unreasonably withheld.
- 7.1.3 Where the fees for the Services are time-based, the fee payable for a person provided as a replacement to a named Key Person shall not exceed that which would have been payable to the person replaced.
- 7.1.4 The Service Provider shall bear all additional costs arising out of or incidental to replacement of Personnel, except where such replacement is otherwise provided for in the Contract.
- 7.1.5 The Service Provider shall take all measures necessary and shall provide all materials and

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equipment necessary to enable Personnel to perform their duties in an efficient manner.

7.2 Provision of Personnel in terms of a Personnel Schedule

- 7.2.1 The Service Provider shall, where required in terms of the Contract Data, provide appropriate Personnel for such time periods as required in terms of the Contract and enter all data pertaining to Personnel including titles, job descriptions, qualifications and estimated periods of engagement on the performance of the Services in the Personnel Schedule.
- 7.2.2 Where the Service Provider proposes to utilise a person not named in the Personnel Schedule, he shall submit the name, relevant qualifications and experience of the proposed replacement person to the Employer for approval. Should the Employer not object in writing within 10 Days of receipt of such notification, the replacement shall be deemed to have been approved by the Employer.
- 7.2.3 The Services shall be performed by the Personnel listed in the Personnel Schedule for the periods of time indicated therein. The Service Provider may, subject to the approval of the Employer, make such adjustments to the data provided in terms of Clause 7.2.1 above as may be appropriate to ensure the efficient performance of the Services, provided that the adjustments will not cause payments to exceed any limit placed on the Contract Price.
- 7.2.4 The Service Provider shall, if required in terms of Clause 7.2.1:
- a) forward to the Employer for approval, within 15 Days of the award of the Contract, the Personnel Schedule and a timetable for the placement of Personnel.
 - b) inform the Employer of the date of commencement and departure of each member of Personnel during the course of the Project.
 - c) submit to the Employer for his approval a timely request for any proposed change to Personnel, or timetables.

8. COMMENCEMENT, COMPLETION, MODIFICATION, SUSPENSION AND TERMINATION

8.1 Commencement of Services

The Service Provider shall commence the performance of the Services within the period stated in the Contract Data.

8.2 Completion

- 8.2.1 Unless terminated in terms of the Contract, or otherwise specified in the Contract Data, the Contract shall be concluded when the Service Provider has completed all Deliverables in accordance with the Scope of Work.
- 8.2.2 The Service Provider may request an extension to the Period of Performance if he is or will be delayed in completing the Contract by any of the following causes:
- a) additional Services ordered by the Employer;
 - b) failure of the Employer to fulfill his obligations under the Contract;
 - c) any delay in the performance of the Services which is not due Provider's default;
 - d) *Force Majeure; or*
 - e) suspension.
- 8.2.3 The Service Provider shall within 14 Days of becoming aware that a delay may occur or has occurred, notify the Employer of his intention to make a request for the extension of the Period of Performance to which he considers himself entitled and shall within 30 days after the delay ceases deliver to the Employer full and detailed particulars of the request.

8.2.4 The Employer shall, within 30 Days of receipt of a detailed request, grant such extension to the Period of Performance as may be justified, either prospectively or retrospectively, or inform the Service Provider that he is not entitled to an extension. Should the Service Provider find the decision of the Employer to be unacceptable he shall, nevertheless, abide by such decision in the performance of the Services and the matter shall be dealt with as a dispute in terms of Clause 12.

8.3 Force Majeure

8.3.1 The failure of a Party to fulfill any of its obligations under the Contract shall not be considered to be a breach of, or default under, this Contract insofar as such inability arises from an event of *Force Majeure*, provided that the Party affected by such an event has taken all reasonable precautions, due care and reasonable alternative measures in order to meet the terms and conditions of this Contract, and has informed the other Party as soon as possible about the occurrence of such an event.

8.3.2 In the event that the performance of the Services has to be suspended on the grounds of *Force Majeure*, the Period of Performance shall be extended by the extent of the delay plus a reasonable period for the resumption of work.

8.3.3 During the period of his inability to perform the Services as a result of an event of *Force Majeure*, the Service Provider shall be entitled to any payment due in terms of the Contract and shall be reimbursed for additional costs reasonably and necessarily incurred by him in suspending, delaying and re-activating the performance of the Services.

8.4 Termination

8.4.1 The Employer may terminate the Contract:

- (a) where the Services are no longer required;
- (b) where the funding for the Services is no longer available;
- (c) if the Service Provider does not remedy a failure in the performance of his obligations under the Contract within thirty (30) Days after having been notified thereof, or within any further period as the Employer may have subsequently approved in writing;
- (d) if the Service Provider becomes insolvent or liquidated; or
- (e) if, as the result of *Force Majeure*, the Service Provider is unable to perform a material portion of the Services for a period of not less than sixty (60) Days;

8.4.2 The Employer shall give the Service Provider not less than thirty (30) Days written notice of any termination made in terms of 8.4.1 (a) or (b).

8.4.3 The Service Provider may terminate the Contract, by giving not less than thirty (30) Days written notice to the Employer after the occurrence of any of the following events:

- (a) if the Employer fails to pay any monies due to the Service Provider in terms of the Contract and not subject to dispute pursuant to Clause 12 within forty-five (45) Days after receiving written notice from the Service Provider that such payment is overdue; or
- (b) if, as the result of *Force Majeure*, the Service Provider is unable to perform a material portion of the Services for a period of not less than sixty (60) Days; or
- (c) when the Services have been suspended under Clause 8.5 and the period of suspension exceeds the period stated in the Contract Data, or it is clear to the Service Provider that it will be impossible or impractical to resume the suspended Services before the period of suspension has exceeded the period stated in the Contract Data; or
- (d) if the Employer is in material breach of a term of the Contract and fails to rectify such breach within 30 Days of the receipt of written notice requiring him to do so.



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8.4.4 Upon termination of this Contract pursuant to Clauses 8.4.1 or 8.4.3, the Employer shall remunerate the Service Provider in terms of the Contract for Services satisfactorily performed prior to the effective date of termination and reimburse the Service Provider any reasonable cost incident to the prompt and orderly termination of the Contract, except in the case of termination pursuant to events (c) and (d) of Clause 8.4.1.

8.4.5 Should the Service Provider, being an individual or the last surviving principal of a partnership or body corporate, die or be prevented by illness or any other circumstances beyond his control from performing the obligations implied by the Contract, the Contract shall be terminated without prejudice to the accrued rights of either Party against the other.

8.5 Suspension

8.5.1 The Employer may temporarily suspend all or part of the Services by notice to the Service Provider who shall immediately make arrangements to stop the performance of the Services and minimise further expenditure.

8.5.2 When Services are suspended, the Service Provider shall be entitled to pro-rata payment for the Services carried out and reimbursement of all reasonable cost incident to the prompt and orderly suspension of the Contract.

8.6 Rights and liabilities of the Parties

Completion, suspension or termination of the Contract shall not prejudice or affect the accrued rights or liabilities of the Parties.

9. OWNERSHIP OF DOCUMENTS AND COPYRIGHT

9.1 Copyright of all documents prepared by the Service Provider in accordance with the relevant provisions of the copyright Act (Act 98 of 1978) relating to Project shall be vested in the party named in the Contract Data. Where copyright is vested in the Service Provider, the Employer shall be entitled to use the documents or copy them only for the purposes for which they are intended in regard to the Project and need not obtain the Service Provider's permission to copy for such use. Where copyright is vested in the Employer, the Service Provider shall not be liable in any way for the use of any of the information other than as originally intended for the Project and the Employer hereby indemnifies the Service Provider against any claim which may be made against him by any party arising from the use of such documentation for other purposes.

9.2 The ownership of data and factual information collected by the Service Provider and paid for by the Employer shall, after payment by the Employer, lie with the Employer.

9.3 The Employer shall have no right to use any documents prepared by the Service Provider whilst the payment of any fees and expenses due to the Service Provider in terms of the Contract is overdue.

10. SUCCESSION AND ASSIGNMENT

10.1 Except as defined in Clause 8.4.4 above, each Party binds itself and its partners, successors, executors, administrators, assigns and legal representatives to the other Party and to the other partners, successors, executors, administrators, assigns and legal representatives of the other Party in respect of all obligations and liabilities of the Contract.

10.2 An assignment shall be valid only if it is a written agreement by which the Service Provider transfers his rights and obligations under the Contract, or part thereof, to others.

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- 10.3 The Service Provider shall not, without the prior written consent of the Employer, assign the Contract or any part thereof, or any benefit or interest thereunder, except in the following cases:
- (a) by a charge in favour of the Service Provider's bankers of any monies due or to become due under the Contract; or
 - (b) by assignment to the Service Provider's insurers of the Service Provider's right to obtain relief against any other person liable in cases where the insurers have discharged the Service Provider's loss or liability.
- 10.4 The approval of an assignment by the Employer shall not relieve the Service Provider of his obligations for the part of the Contract already performed or the part not assigned.
- 10.5 If the Service Provider has assigned his Contract or part thereof without authorization, the Employer may forthwith terminate the Contract and the third party will have no claim against the Employer resulting from such termination.


11. SUBCONTRACTING

- 11.1 A Service Provider may not subcontract any work which he has the skill and competency to perform, unless otherwise permitted in the Contract Data.
- 11.2 A subcontract, where permitted in terms of the Contract Data, shall be valid only if it is a written agreement by which the Service Provider entrusts performance of a part of the Services to Others.
- 11.3 The Service Provider shall not subcontract to nor engage a Subcontractor to perform any part of the Services without the prior written authorization of the Employer. The services to be subcontracted and the identity of the Subcontractor shall be notified to the Employer. The Employer shall, within 14 Days of receipt of the notification and a full motivation why such services are to be subcontracted, notify the Service Provider of his decision, stating reasons, should he withhold such authorization. If the Service Provider enters into a subcontract with a Subcontractor without prior approval, the Employer may forthwith terminate the Contract.
- 11.4 The Employer shall have no contractual relationships with Subcontractors. However, if a Subcontractor is found by the Employer to be incompetent, the Employer may request the Service Provider either to provide a Subcontractor with qualifications and experience acceptable to the Employer as a replacement, or to resume the performance of the relevant part of the Services himself.
- 11.5 The Service Provider shall advise the Employer without delay of the variation or termination of any subcontract for performance of all or part of the Services.
- 11.6 The Service Provider shall be responsible for the acts, defaults and negligence of Subcontractors and their agents or employees in the performance of the Services, as if they were the acts, defaults or negligence of the Service Provider, his agents or employees. Approval by the Employer of the subcontracting of any part of the Contract or of the engagement by the Service Provider of Subcontractors to perform any part of the Services shall not relieve the Service Provider of any of his obligations under the Contract.

12. RESOLUTION OF DISPUTES

12.1 Settlement

- 12.1.1 The Parties shall negotiate in good faith with a view to settling any dispute or claim arising out of or relating to the Contract and may not initiate any further proceedings until either Party has, by written notice to the other, declared that such negotiations have failed.



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- 12.1.2 Any dispute or claim arising out of or relating to the Contract which cannot be settled between the Parties shall in the first instance be referred by the Parties to either mediation or adjudication as provided for in the Contract Data.

12.2 Mediation

- 12.2.1 If the Contract Data does not provide for dispute resolution by adjudication, not earlier than 14 Days after having advised the other Party, in terms of Clause 12.1, that negotiations in regard to a dispute have failed, an aggrieved Party may require that the dispute be referred, without legal representation, to mediation by a single mediator. The mediator shall be selected by agreement between the Parties, or, failing such agreement, by the person named for this purpose in the Contract Data. The costs of the mediation shall be borne equally by the Parties.
- 12.2.2 The mediator shall convene a hearing of the Parties and may hold separate discussions with any Party and shall assist the Parties in reaching a mutually acceptable settlement of their differences through means of reconciliation, interpretation, clarification, suggestion and advice. The Parties shall record such agreement in writing and thereafter they shall be bound by such agreement.
- 12.2.3 The mediator is authorised to end the mediation process whenever in his opinion further efforts at mediation would not contribute to a resolution of the dispute between the Parties.
- 12.2.4 If either Party is dissatisfied with the opinion expressed by the mediator or should the mediation fail, then such Party may require that the dispute be referred to arbitration or litigation in a competent civil court, as provided for in the Contract Data.

12.3 Adjudication

- 12.3.1 If the Contract Data does not provide for dispute resolution by mediation, an aggrieved Party may refer the dispute to adjudication. Adjudication shall be in accordance with the latest edition of the separately published CIDB Adjudication Procedures.
- 12.3.2 The adjudicator shall be appointed in terms of the Adjudicator's Agreement bound in the Construction Industry Development Board's Adjudication Procedure.
- 12.3.3 The Adjudicator shall be any person agreed to by the parties or, failing such agreement, shall be nominated by the person named in the Contract Data. The Adjudicator shall be appointed in accordance with the Adjudicator's Agreement contained in the CIDB Adjudication Procedure.
- 12.3.4 If a Party is dissatisfied with the decision of the Adjudicator, the Party may give the other Party notice of dissatisfaction within 28 Days of the receipt of that decision and refer the dispute to arbitration or litigation in a competent civil court as provided for in the Contract Data. If no notice of dissatisfaction is given within the specified time, the decision shall be final and binding on the Parties.

12.4 Arbitration

- 12.4.1 Arbitration, where provided for in the Contract Data, shall be by a single arbitrator in accordance with the provisions of the Arbitration Act of 1965 as amended and shall be conducted in accordance with such procedure as may be agreed between the Parties or, failing such agreement, in accordance with the Rules for the Conduct of Arbitrations published by the Association of Arbitrators current at the date the arbitrator is appointed.
- 12.4.2 The arbitrator shall be mutually agreed upon or, failing agreement, to be nominated by the person named in the Contract Data.

13. LIABILITY

13.1 Liability of the Service Provider

13.1.1 The Service Provider shall be liable to the Employer arising out of or in connection with the Contract if a breach of Clause 5.1 is established against him.

13.1.2 The Service Provider shall correct a Defect on becoming aware of it. If the Service Provider does not correct a Defect within a reasonable time stated in a notification and the Defect arose from a failure of the Service Provider to comply with his obligation to provide the Services, the Service Provider shall pay to the Employer the amount which the latter assesses as being the cost of having such Defect corrected by Others.

13.1.3 All persons in a joint venture or consortium shall be jointly and severally liable to the Employer in terms of this Contract and shall carry individually the minimum levels of insurance stated in the Contract Data, if any.

13.2 Liability of the Employer

The Employer shall be liable to the Service Provider arising out of or in connection with the Contract if a breach of an obligation of his in terms of the Contract is established. The Service Provider shall have no separate delictual right of action against the Employer.

13.3 Compensation

If it is established that either Party is liable to the other, compensation shall be payable only on the following terms:

- (a) Compensation shall be limited to the amount of reasonably foreseeable loss and damage suffered as a result of the breach.
- (b) In any event, the amount of compensation will be limited to the amount specified in Clause 13.5.

13.4 Duration of Liability

Notwithstanding the terms of the Prescription Act No. 68 of 1969 (as amended) or any other applicable statute of limitation neither the Employer nor the Service Provider shall be held liable for any loss or damage resulting from any occurrence unless a claim is formally made within the period stated in the Contract Data or, where no such period is stated, within a period of three years from the date of termination or completion of the Contract.

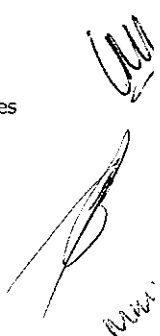
13.5 Limit of Compensation

13.5.1 Unless otherwise indicated in the Contract Data, the maximum amount of compensation payable by either Party to the other in respect of liability under the Contract is limited to:

- a) the sum insured in terms of 5.4 in respect of insurable events; and
- b) the sum stated in the Contract Data or, where no such amount is stated, to an amount equal to twice the amount of fees payable to the Service Provider under the Contract, excluding reimbursement and expenses for items other than salaries of Personnel, in respect of non-insurable events.

13.5.2 Each Party agrees to waive all claims against the other insofar as the aggregate of compensation which might otherwise be payable exceeds the aforesaid maximum amount payable.

13.5.3 If either Party makes a claim for compensation against the other Party and this is not established, the claimant shall reimburse the other for his reasonable costs incurred as a

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result of the claim or if proceedings are initiated in terms of Clause 12 for such costs as may be awarded.

13.6 Indemnity by the Employer

Unless otherwise indicated in the Contract Data, the Employer shall indemnify the Service Provider against all claims by third parties which arise out of or in connection with the performance of the Services save to the extent that such claims do not in the aggregate exceed the limit of compensation in Clause 13.5, if applicable, or are covered by the insurances arranged under the terms of Clause 5.4.

13.7 Exceptions

13.7.1 Clauses 13.5 and 13.6 shall not apply to claims arising from deliberate misconduct.

13.7.2 The Service Provider shall have no liability whatsoever for actions, claims, losses or damages occasioned by:

- a) the Employer omitting to act on any recommendation, or overriding any act, decision or recommendation, of the Service Provider, or requiring the Service Provider to implement a decision or recommendation with which the Service Provider disagrees or on which he expresses a serious reservation; or
- b) the improper execution of the Service Provider's instructions by agents, employees or independent contractors of the Employer.

14. REMUNERATION AND REIMBURSEMENT OF SERVICE PROVIDER

The Employer shall remunerate and reimburse the Service Provider for the performance of the Services as set out in the Pricing Data. If not otherwise stated in the Pricing Data, the following shall apply:

14.1 The Service Provider shall be entitled to render interim monthly accounts for fees and reimbursements throughout the duration of the Contract. Interim amounts of lump sum fees due shall be based on progress.

14.2 Amounts due to the Service Provider shall be paid by the Employer within thirty (30) Days of receipt by him of the relevant invoices. If the Service Provider does not receive payment by the due date, he shall be entitled to charge interest on the unpaid amount, which is payable by the Employer, at the prime interest rate charged by his bank and certified by such bank, plus 2% per annum, and calculated from the due date of payment.

14.3 If any item or part of an item in an invoice submitted by the Service Provider is disputed by the Employer, the latter shall, before the due date of payment, give notice thereof with reasons to the Service Provider, but shall not delay payment of the balance of the invoice. Clause 14.2 shall apply to disputed amounts which are finally determined to be payable to the Service Provider.

14.4 In respect of Services charged for on a time-basis and all other reimbursable expenses the Service Provider shall maintain records in support of such charges and expenses for a period of twenty four months after the completion or termination of the Contract. Within this period the Employer may, on not less than 14 Days notice, require that a reputable and independent firm of accountants, nominated by him at his expense, audit any claims made by the Service Provider for time charges and expenses by attending during normal working hours at the office where the records are maintained.



15. AMOUNTS DUE TO THE EMPLOYER

Amounts due to the Employer shall be paid by the Service Provider within thirty (30) Days of receipt by him of the relevant invoices. If the Employer does not receive payment by the due date, he shall be entitled to charge interest on the unpaid amount, which is payable by the Service Provider, at the rate stated in the Contract Data, calculated from the due date for payment.



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PERSONNEL SCHEDULE

NAME	TITLE	JOB DESCRIPTION	QUALIFICATIONS	ESTIMATED PERIOD OF ENGAGEMENT (weeks)
CN Kimaru Pr. Eng	Director	Project Director	B. Sc (Eng) Pr. Eng.	Until project completion
JN Kihiu R. Eng	Senior Engineer/Project Manager	Project Manager	B. Sc (Eng) R. Eng	Until project completion
SR Makubo	Senior Technician	Design Technician	N. Dip (Cand. Eng. Tech.)	Until project completion
E Jansen	CAD/GIS Operator	CAD & GIS Drawings	Draughting Diploma	Until project completion
BT Ntseno	Senior Technician	Engineer's Representative	N. Dip (Cand. Eng. Tech.)	Until project completion
AJ Phiri	Technician	Clerk of Works	Dip (Arch Draughting)	Until project completion

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C1. CONTRACT DATA

The Conditions of Contract are the *Standard Professional Services Contract (July 2009)* published by the Construction Industry Development Board.

Each item of data given below is cross-referenced to the clause in the Conditions of Contract to which it mainly applies.

Part 1: Data provided by the Employer

Clause		Guidance notes
	The Employer is the Setsoto Local Municipality	
3.4 and 4.3.2	The authorised and designated representative of the Employer is: Municipal Manager Name: BJ Mthembu	
	The address for receipt of communications is: Telephone: 051 933 9302 Facsimile: 051 933 9363 E-mail: manager@setsoto.co.za Address: 27 Voortrekker Street Ficksburg 9730	
1	The Project is the Development of Boreholes for Senekal and Matwabeng	
1	The Period of Performance is - Until project completion	<i>Not required if the Service Provider is required to complete this item.</i>
1	The Start Date is 22 June 2006	<i>Insert the date on which Services are to commence.</i>
3.4.1	Communications by e-mail / facsimile is permitted	<i>Omit is permitted. Delete that which is not applicable.</i>
3.5	The location for the performance of the Project is Senekal and Matwabeng	<i>Omit is not required</i>
3.6	The Service Provider may not release public or media statements or publish material related to the Services or Project under any circumstances.	<i>Omit if standard provisions in clause 3.6 are to apply.</i>
3.9.2	The time-based fees used to determine changes to the Contract Price are as stated in the Pricing Data.	<i>Omit if time-based charges are to be negotiated.</i>
3.12	The penalty payable is Nil per Day subject to a maximum amount of Nil .	

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3.15.1	The programme shall be submitted within 14 Days of the award of the Contract.	<i>Not required if programme is to be submitted with the tender.</i>
3.15.2	The Service Provider shall update the programme at intervals not exceeding 8 weeks .	<i>Insert number of weeks e.g. 5, if require more frequently than once a quarter.</i>
3.16	The time-based fees where applicable shall be adjusted for inflation in line with the latest applicable Guideline Scope of services and Tariff of Fees.	<i>Omit if the default provisions are appropriate.</i>
13.16.1	The indices are those contained in Table A of P0141 Consumer Price Index for the CPI for all services published by Statistics South Africa.	<i>Omit if no adjustment is to be made for inflation. Amend if necessary.</i>
4.2	A reasonable time for the Employer to give his decision is a period not exceeding 3 weeks	
4.3.1(d)	The Service Provider is required to assist in the obtaining of approvals, licenses and permits from the state, regional and municipal authorities having jurisdiction over the Project	<i>Omit if the Service Provider is required to do so. Reword as necessary</i>
5.4.1	The Service Provider is required to provide Professional Indemnity cover as set out in the Professional Indemnity Schedule with a minimum value of R 2 million per claim. Refer to the attached Professional Indemnity Certificate.	<i>State requirements for professional indemnity insurance , if any</i>
	The Service Provider is required to provided the following additional insurances: N/A	<i>State requirements for other insurances if required.</i>
5.5	The Service Provider is required to obtain the Employer's prior approval in writing before taking any of the following actions: 1 N/A 2 N/A	
7.2	The Service Provider is required to provide personnel in accordance with the provisions of clause 7.2 and to complete the Personnel Schedule.	<i>Omit if this is not a requirement.</i>
8.1	The Service Provider is to commence the performance of the Services within 14 Days of date that the Contract becomes effective.	<i>Insert number of day or amend as appropriate.</i>
8.2.1	The Contract is concluded when the project is completed (Completion Report Issued)	<i>Omit if standard provisions of Clause 8.2.1 are appropriate.</i>
8.4.3 (c)	The period of suspension under clause 8.5 is not to exceed 3 months	<i>State maximum period for suspension.</i>

9.1	Copyright of documents prepared for the Project shall be vested with the Setso Local Municipality	<i>Enter Employer or Service Provider</i>
11.1	A Service Provider may not subcontract any work which he has the skill and competency to perform.	<i>Omit if not permitted</i>
12.1	Interim settlement of disputes is to be by mediation The mediator will be selected by agreement between the parties or failing such agreement within 7 days by a nominee of the President of the South African Institution of Civil Engineering.	<i>Delete the option that is not selected</i>
12.2.4	Final settlement is by arbitration The Arbitrator is the person appointed by agreement between the parties or failing such agreement within 7 days by a nominee of the President of the Association of Arbitrators of Southern Africa. The Arbitrator must be registered with the Association of Arbitrators of Southern Africa (Tel No. 011 884 9164/5, Fax No. 011 884 9167)	<i>Delete the option that is not selected</i>
12.4.2		<i>Insert particulars of person who appoints</i>
13.1.3	All persons in a joint venture or consortium shall carry a minimum professional indemnity insurance of R 5 million	<i>Delete if not a requirement or amend wording as required.</i>
13.4	Neither the Employer nor the Service Provider is liable for any loss or damage resulting from any occurrence unless a claim is formally made within 12 months from the date of termination or completion of the Contract.	<i>Not required if the standard provisions of Clause 13.4 are acceptable.</i>
15	The interest rate will be prime interest rate of the Employers bank at the time that the amount is due. Or the interest rates will be the applicable interest rate of the Employer's bank at the time of the claim.	<i>Describe interest payable. Amend wording as applicable.</i>
	The additional conditions of contract are: Refer to the Schedule of Deviations, Item 1 -- Supervision and Monitoring	<i>Insert additional conditions of contract or delete row:</i>

Part 2: Data provided by the Service Provider

Clause		<i>Guidance notes</i>
1	<p>The Service Provider is ISA & Partners (Pty) Ltd</p> <p>Address: 66 Nyala Street, Doorn, Welkom, 9459</p> <p>Telephone: 057 352 4099</p> <p>Faxsimile: 057 352 6116</p>	
5.3	<p>The authorised and designated representative of the Service Provider is:</p> <p>Name: CN Kimaru Pr. Eng.</p> <p>The address for receipt of communications is:</p> <p>Telephone: 057 352 4099</p> <p>Faxsimile: 057 352 6116</p> <p>Address: 66 Nyala Street, Doorn, Welkom, 9459</p>	
1	<p>The Period of Performance is until the project is completed.</p>	<i>Omit if employer specifies Period of Performance</i>
5.5 7.1.2	<p>The Key Persons and their jobs / functions in relation to the services are: Refer to the attached Personnel schedule.</p>	<i>Provide if a requirement</i>

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Form of offer and acceptance

Offer

The Employer, identified in the acceptance signature block, has solicited offers to enter into a contract for the procurement of:

DESIGN AND CONSTRUCTION SUPERVISION SERVICES FOR THE DEVELOPMENT OF BOREHOLES IN SENEKAL AND MATWABENG

The tenderer, identified in the offer signature block, has examined the documents listed in the tender data and addenda thereto as listed in the returnable schedules, and by submitting this offer has accepted the conditions of tender.

By the representative of the tenderer, deemed to be duly authorized, signing this part of this form of offer and acceptance, the tenderer offers to perform all of the obligations and liabilities of the Service Provider under the contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the conditions of contract identified in the Contract Data.

The offered total of the Prices inclusive of Value Added Tax is

Three Million, Two Hundred and Six Thousand, One Hundred and Sixty Four Rand and Fifty Cents (in words); **R 3,206,164.50** (in figures).

This offer may be accepted by the Employer by signing the acceptance part of this form of offer and acceptance and returning one copy of this document to the tenderer before the end of the validity period stated in the tender data, whereupon the tenderer becomes the party named as the Service Provider in the conditions of contract identified in the Contract Data.

Signature (s)
Name (s)
Capacity
for the
tenderer
(Name and address of organization)
Name and signature of witness Date
witness

Acceptance

By signing this part of this form of offer and acceptance, the Employer identified below accepts the tenderer's offer. In consideration thereof, the Employer shall pay the Service Provider the amount due in accordance with the conditions of contract identified in the Contract Data. Acceptance of the tenderer's offer shall form an agreement between the Employer and the tenderer upon the terms and conditions contained in this agreement and in the contract that is the subject of this agreement.

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[Handwritten signature]
Mimi

The term of the contract, are contained in:

Part C1 Agreements and contract data, (which includes this agreement)

Part C2 Pricing data


Part C3 Scope of work

and drawings and documents or parts thereof, which may be incorporated by reference into Parts C1 to C3 above.

Deviations from and amendments to the documents listed in the tender data and any addenda thereto as listed in the tender schedules as well as any changes to the terms of the offer agreed by the tenderer and the Employer during this process of offer and acceptance, are contained in the schedule of deviation attached to and forming part of this agreement.

The tenderer shall within two weeks after receiving a completed copy of this agreement, including the schedule of deviations (if any), contact the Employer's agent (whose details are given in the contract data) to arrange the delivery of any bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the conditions of contract identified in the Contract Data. Failure to fulfill any of these obligations in accordance with those terms shall constitute a repudiation of this agreement.

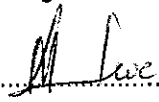
Notwithstanding anything contained herein, this agreement comes into effect on the date when the tenderer receives one fully completed original copy of this document, including the schedule of deviations (if any). Unless the tenderer (now Service Provider) within five working days of the date of such receipt notifies the Employer in writing of any reason why he cannot accept the contents of this agreement, this agreement shall constitute a binding contract between the parties.¹

Signature(s) 

Name(s) B. J. MTHEMBU



Capacity MUN. MANAGER

for the Employer SETSOTO LOCAL MUNICIPALITY, FICKSBURG
(Name and address of organization)

Name and signature of witness MORENO LEPITIKOE  DATE 03/05/2011

¹ As an alternative, the following wording may be used:

Notwithstanding anything contained herein, this agreement comes into effect two working days after the submission by the employer of one fully completed original copy of this document including the schedule of deviations (if any), to a courier-to-counter delivery / counter-to-counter delivery / door-to-counter delivery / door-to-door delivery / courier service (delete that which is not applicable), provided that the employer notifies the tenderer of the tracking number within 24 hours of such submission. Unless the tenderer (now Service Provider) within seven working days of the date of such submission notifies the Employer in writing of any reason why he cannot accept the contents of this agreement shall constitute a binding contract between the parties.



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Schedule of Deviations

Notes:

1. The extent of deviations from the tender documents issued by the employer before the tender closing date is limited to those permitted in terms of the conditions of tender
2. A tenderer's covering letter shall not be included in the final contract document. Should any matter in such letter, which constitutes a deviation as aforesaid, become the subject of agreements reached during the process of offer and acceptance, the outcome of such agreement shall be recorded here.
3. Any other matter arising from the process of offer and acceptance either as a confirmation, clarification or change to the tender documents and which it is agreed by the Parties becomes an obligation of the contract shall also be recorded here.
4. Any change or addition to the tender documents arising from the above agreements and recorded here, shall also be incorporated into the final draft of the Contract.

1 Subject: **Supervision and Monitoring**

Details: **Notwithstanding the provisions of Clauses 5 the Standard Professional Services Contract and any other contractual duty imposed on the Consultants in terms of contract documents, the Client undertakes to exhaust all its contractual remedies against the Contractor, before exercising any contractual rights of recourse it may have against the Consultant in the event of the Client suffering any damages as a result of any breach by the Contractor of his obligations in terms of the contract documents."**

2 Subject _____

Details _____

3 Subject _____

Details _____

4 Subject _____

Details _____

By the duly authorised representative signing this agreement, the Employer and the tenderer agree to and accept the foregoing schedule of deviations as the only deviations from and amendments to the documents listed in the tender data and addenda thereto as listed in the tender schedules, as well as any confirmation, clarification or changes to the terms of the offer agreed by the tenderer and the Employer during this process of offer and acceptance.

It is expressly agreed that no other matter whether in writing, oral communication or implied during the period between the issue of the tender documents and the receipt by the tenderer of a completed signed copy of this Agreement shall have any meaning or effect in the contract between the parties arising from this agreement.

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PART C2 - PRICING DATA



C2.1 - PROFESSIONAL FEES

The professional fees are based on the latest applicable Guideline Scope of Services and Tariff of Fees for Persons Registered in terms of the Engineering Profession Act, 2000 (Act No. 46 of 2000)

PROFESSIONAL FEES, SITE SUPERVISION AND DISBURSEMENT COSTS CALCULATION

ACCOUNT FOR PROFESSIONAL FEES (Basic Fees - Gazette No. 32851 - 4 January 2010)					R 18,749,500.00
Project Value excludes. VAT: (Cost of the works)					
Project Range	Primary Fee	% Part on Balance	Balance Amt	% Part Fees	Amount
R470,000<CW<R1,175,000	R 58,750.00	12.50%			
R1,175,000<CW<R5,850,000	R 146,875.00	10.00%			
R5,850,000<CW<R11,750,000	R 614,375.00	9.00%			
R11,750,000<CW<R29,400,000	R 1,145,375.00	8.00%	R 6,999,500.00	8.00	R 559,960.00
R29,400,000<CW<R58,800,000	R 2,557,375.00	6.00%			
R58,800,000<CW<R352,750,000	R 4,321,375.00	5.50%			
> 352,750,000	R 20,488,625.00	5.00%			
BASIC FEE FOR CIVIL AND STRUCTURAL ENGINEERING WORK				(Clause 3.2.1(1))	R 1,705,335.00
CATEGORY FACTORS WORK OF NORMAL CHARACTER					
Water and Sanitation in Rural Areas		(Clause 3.2.1 (4)) Multiply by	1.25		R 0.00
Application of Targeted Procurement Clause		(Clause 3.2.1 (4)) Multiply by	1.07		R 0.00
Disbursements (Topo survey, EIA study, Geotechnical Tests e.t.c)					R 472,050.00
Site Supervision Costs (approximately 24 months)					R 635,040.00
SUB-TOTAL					R 2,812,425.00
V.A.T @ 14%					R 393,739.50
GRAND TOTAL					R 3,206,164.50

C2.2 - SITE SUPERVISION COSTS

The site supervision costs will consist of the costs of providing full time staff on site (Level 4 Construction Monitoring) commensurate with the requirements of the project. The costs will include salaries, travelling costs and other disbursements as relevant utilising the latest disbursement schedules issued by the Department of Public Works.

Typical monthly site supervision and disbursement costs for this project will be approximately **R 60,000.00/month**.

C2.3 - INDICATIVE TIME BASED FEE RATES

The indicative time based fee rates below are based on the latest applicable Guideline Scope of Services and Tariff of Fees for Persons Registered in terms of the Engineering Profession Act, 2000 (Act No. 46 of 2000). These will be utilised if the Employer requests additional work to be done that was not covered by the original scope of work.

<u>TITLE</u>	<u>Rate/hour</u>
DIRECTOR	R 1,500.00
SENIOR ENGINEER/PROJECT MANAGER	R 1,200.00
ENGINEER	R 900.00
DESIGN TECHNICIAN	R 750.00
SENIOR TECHNICIAN / ENGINEER'S REPRESENTATIVE	R 750.00
ASS.ENGINEER'S REPRESENTATIVE / CLERK OF WORKS	R 600.00
CAD/GIS OPERATOR	R 450.00

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Part C3 – SCOPE OF WORK

The Scope of Work for this project will be based primarily (but not exclusively) on the latest applicable Guideline Scope of Services and Tariff of Fees for Persons Registered in terms of the Engineering Profession Act, 2000 (Act No. 46 of 2000). The latest applicable guideline will be Government Gazette No 28774, 13 April 2006.

C3.1 Normal Services (Clause 2.1)

The services required from the Service Provider will be those necessary to conclude the following stages:

- i) Report stage;
- ii) Preliminary Design Stage;
- iii) Design and Tender Stage;
- iv) Working Drawing Stage;
- v) Construction Stage;
- vi) Targeted Procurement.

C3.2 Additional Services pertaining to all stages of the project (Clause 2.2.1)

The following services are additional to the normal services provided by the Service Provider:

- i) Enquiries not directly concerned with the **works** and its subsequent utilisation;
- ii) Valuation for purchase, sale or leasing of plant, equipment, material, systems, land or buildings or arranging for such valuation;
- iii) Making arrangements for way leaves, servitudes or expropriations;
- iv) Negotiating and arranging for the provision or diversion of services not forming part of the **works**;
- v) Additional work in obtaining the formal approval of the appropriate Government Departments or Public Authorities, including the making of such revisions as may be required as a result of decisions of such Departments or Authorities arising out of changes in policy, undue delay, or other causes beyond the **consulting engineer's** control;
- vi) Surveys, analyses, tests and site or foundation or other investigations, model tests, laboratory tests and analyses carried out on behalf of the **client**;
- vii) Setting out or staking out the **works** and indicating any boundary beacons and other reference marks;
- viii) Preparation of drawings for manufacture and installation or detailed checking of such for erection or installation fit.
- ix) Detailed inspection, reviewing and checking of designs and drawings not prepared by the **consulting engineer** and submitted by any **contractor** or potential **contractor** as alternative to those embodied in tender or similar documents prepared by the **consulting engineer**;
- x) Inspection and testing, other than on site, of materials and plant, including inspection and testing during manufacture;
- xi) Preparing and setting out particulars and calculations in a form required by any relevant authority;
- xii) Abnormal additional services by or costs to the **consulting engineer** due to the failure of a **contractor** or others to perform their required duties adequately and timely;
- xiii) Executing or arranging for the periodic monitoring and adjustment of the **works**, after final handover and completion of construction and commissioning, in order to optimise or maintain proper functioning of any process or system;
- xiv) Investigating or reporting on tariffs or charges leviable by or to the client;
- xv) Advance ordering or reservation of materials and obtaining licenses and permits;
- xvi) Preparing detailed operating, operation and maintenance manuals;



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Part C3 – SCOPE OF WORK

- xvii) Additional **services**, duties and/or work resulting from project scope changes, alterations and/or instructions by the **client**, or his duly authorized agents, requiring the **consulting engineer** to advise upon, review, adapt and/or alter his completed designs and/or any other documentation and/or change the scope of his **services** and/or duties. Such additional **services** are subject to agreement in writing between the **consulting engineer** and the **client** prior to the execution thereof;
- xviii) Exceptional arrangements, communication, facilitation and agreements with any stakeholders other than the **client** and **contractors** appointed for the **works** on which the **consulting engineer** provides **services**;
- xix) Any other additional **services**, of whatever nature, specifically agreed to in writing between the **consulting engineer** and the **client**.

C3.3 Construction Monitoring (Clause 2.2.2)

The duties of the **consulting engineer** for the **construction monitoring (Level 4)** are as follows:

The **construction monitoring** staff shall:-

- i) Maintain a full time presence on site to constantly review –
 - (a) Work procedures;
 - (b) Construction materialsfor compliance with the requirements of the plans and specifications and review completed work prior to enclosure or on completion as appropriate;
- ii) Where the **consulting engineer** is the sole consultant or principal agent, carry out such administration of the **project** as is necessary on behalf of the **client**;
- iii) Be available to provide the **contractor** with technical interpretation of the plans and specifications.
- iv) Implement an appropriate Quality Assurance System to ensure that the works are constructed to acceptable standards.



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PART C4 - OTHER RELEVANT DOCUMENTATION

The following additional documents are considered relevant and form part of this contract agreement.

Some of these documents are of historical significance in the development of the Employer's requirements to ISA and Partners Consulting Engineers since 2006.

- 1) Professional Indemnity Certificate;
- 2) Appointment letter from Setsoto Local Municipality to ISA & Partners;
- 3) Acceptance letter from ISA & Partners to Setsoto Local Municipality;
- 4) Letter from ISA & Partners to Setsoto Local Municipality on the proposed Short to Medium term measures to Augment the Raw water Supply to Senekal and Matwabeng;
- 5) Technical Report for the Augmentation of the Raw Water Supply to Senekal and Matwabeng



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PART C4.1

Professional Indemnity and CESA Certificates

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MVA



GLENRAND M.I.B.

20 October 2010

TO WHOM IT MAY CONCERN:

Our ref: Terry Botha
Direct Line: 051 448 1795

Dear Sir/Madam

PROFESSIONAL INDEMNITY INSURANCE
ISA & PARTNERS (PTY) LTD – CONSULTING ENGINEERS & PROJECT MANAGERS

This letter serves to confirm that we have placed Professional Indemnity Insurance Policies on behalf of the above-mentioned Client for the past number of years.

We also confirm that the following Insurance Policy is in place

Limit of Indemnity	:	R10 000 000,00 each and every claim
Period of Insurance	:	01 August 2010 to 31 July 2011
Insurers	:	Santam Insurance Company Limited
Policy number	:	P05382

We confirm that the policy is currently of full force and effect.

Yours faithfully

GLENRAND M.I.B PROFESSIONAL SERVICES

Risk Services, a division of Glenrand M-I-B Ltd. Reg. No. 1997/008001/06
Glenrand M-I-B is a Licensed Financial Services Provider No: 11228
Tel +27 51 447 4739 | Fax +27 51 447 0119 | Email infobfn@glenrandmib.co.za | Web www.glenrandmib.co.za
Docex: 8 Bloemfontein | 1st Floor, 160 Zastron Street, Westdene, Bloemfontein, 9301
PO Box 12470, Brandhof, 9324, South Africa

Directors: Dr MF Kunene¹ (Chairman), AJ Chislett (Chief Executive Officer), BA Chelius¹ (Alt), RG Cottrell²,
AP du Preez¹, HH Hickey², TT Khobane¹ (Alt), MR Mashishi¹, TN Mgoduso¹, NG Payne², G Whitcher,
Company Secretary: E Price

1: Non-executive Director 2: Independent Non-executive Director

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This is to certify that

ISA & Partners (Pty) Ltd

(909)

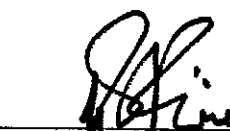
Is a member & fully subscribes to the
Constitution & Code of Conduct of
Consulting Engineers South Africa

Signed at Sandton, on this

22 October 2010



President



Chief Executive Officer


UM
[Signature]



PART C4.2

Appointment letter from Setsoto Local Municipality to ISA & Partners

Handwritten signature and initials
C.M.
M.M.



SETSOTO

Head Office

P O Box 116
27 Voortrekker Street
FICKSBURG
9730
Tel: (051) 933 9300
Fax: (051) 933 3321

LOCAL MUNICIPALITY
PLAASLIKE MUNICIPALIEIT
MASEPALA WA LEHAE

DPT.: MUNICIPAL MANAGER

P O Box 116
FICKSBURG
9730
Tel: (051) 933 9302
Fax: (051) 933 9363
E-mail: manager@setsoto.co.za

All correspondence addressed to Head Office /Alle korrespondensie oerig te word aan Hoofkantoor / Mangolo ohle a lebiswe Ntlokoalo.

Enquiries:	OUR REF: BJ MTHEMBU
------------	---------------------

Isa & Partners
66 Nyala Street
Doom
WELKOM
9460

06 July 2010

Attention: Mr C.N. Kimaru

Sir

SENEKAL RAW WATER AUGMENTATION BOREHOLES

We are pleased to advise you that the above project has now been approved and registered with MIG. The Setsoto Local Municipality therefore would like to proceed into the next phase of the project. You are therefore instructed to proceed to the Design phase of the project.

Prior to commencement of work, the Municipality would like to enter into a Service Level Agreement (SLA) with your company. In this regard you are requested to submit an SLA proposal indicating the conditions of contract. Standards SLA's adjusted to suit the project, will be acceptable.

The scope of your work, deliverables expected from you at every stage of the project and fee proposal will be as per the Engineering Council of South Africa (ESCA) latest guidelines. In this regard you are requested to provide, in your proposal, copies of ECSA registration certificates of your key personnel that you intend to deploy onto this project. The fees are not to exceed 15% of project value. A breakdown of the Design and Supervision costs should be indicated separately. The Municipality may decide to carry-out the supervision of the project in-house.

You are also to include in your proposal an anticipated design program up to tender stage and an estimation of the construction programme.

Your proposal must be submitted by 16 July 2010. A project take-off meeting will be organized once your proposal is received and accepted.

We trust you find the above in order but should you have any queries please do not hesitate to contact the undersigned.

We look forward to a fruitful relationship with your company on this project.

Yours faithfully


B.J. MTHEMBU
MUNICIPAL MANAGER

Re sebeletsa kotleho


Muni



PART C4.3

Acceptance letter from ISA & Partners to Setsoto Local Municipality

Handwritten signature
MML

ISA & PARTNERS (PTY) LTD

Consulting Engineers & Project Managers

66 Nyala Street
Doorn
WELKOM

Postnet Suite 252
Private Bag X25
Welkom, 9460

Tel: (057) 352 4099 | Fax: (057) 352 6116 | E-mail: infowkm@isapartners.co.za



16 July 2010

Our Ref: **P110054/L003/CN KIMARU**

The Municipal Manager
Setsoto Local Municipality
Private Bag 116
FICKSBURG
9730

ATTENTION: MR BJ MTHEMBU

Sir,

**DEVELOPMENT OF BOREHOLES FOR MATWABENG
AND SENEKAL
(AUGMENTATION OF RAW WATER SUPPLY FOR
SENEKAL/MATWABENG)**

SUBMISSION OF PROJECT IMPLEMENTATION PROPOSAL

1. We refer to the letter received from the Municipal Manager, Mr BJ Mthembu on 7 July 2010 regarding the approval to ISA and Partners to proceed with the Design Phase of the project for the Development of Boreholes in Senekal/Matwabeng.
2. A draft of the Service Level Agreement (SLA) was submitted on 14 June 2010 to Mr K Mudzamiri for comments, a formal response on this matter is outstanding.
3. The scope of work and deliverables, as far as is relevant, to the requirements of this project, will conform to the latest Engineering Council of South Africa (ECSA) guidelines. With the attached approvals in Annexure A from the Department of Water Affairs (DWA) and Department of Cooperative Governance and Traditional Affairs (COGTA/MIG), the Inception and Preliminary Design Phases are complete.
4. Details of the key personnel to be deployed at this project are contained in the attached Annexure B.
5. The proposed design and supervision costs are contained in the financial proposal attached Annexure C.
6. The proposed Project Implementation Plan (PIP) is contained in the attached Annexure D.

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If you have any queries about this or other matters, please do not hesitate to contact the undersigned.

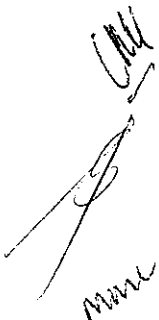
Yours faithfully



CN KIMARU Pr Eng

COPIES: 1) Mr TBI Tleru, PMU Technician, Setsoto Local Municipality
2) Mr K Mudzamiri, DBSA Technician Expert to Setsoto Local Municipality

ENCLOSURES: 1) Annexure A – Approval documents from DWA and COGTA
1) Annexure B – Personnel Schedule
2) Annexure C – Proposed Design and Supervision Costs
3) Annexure D – Project Implementation Plan



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ANNEXURE A

APPROVAL DOCUMENTS FROM DWA AND COGTA

[Handwritten signature]
M.M.V.



**cooperative governance
& traditional affairs**

Department:
Cooperative Governance and Traditional Affairs
REPUBLIC OF SOUTH AFRICA

Private Bag X804, Pretoria, 0001 Tel: (012) 334 0600, Fax: (012) 334 0603
cnr Hamilton and Proes Street, Arcadia, Pretoria

Reference No.: MIG/FS0763/W/09/11

Mr B Scholtz
Department of Cooperative Governance and Traditional Affairs
Free State Provincial Government
P O Box 211
Bloemfontein
9300

Dear Mr Scholtz

**Municipal Infrastructure Grant (MIG) Programme: Registration of Project
MIG/FS0763/W/09/11: Thabo Mofutsanyane DM: Setsoto LM:
Matwabeng/Senekal: The Development of Boreholes (MIS: 187546)**

The above-mentioned project has been evaluated and registered as follows:

Total project cost:	R24 580 594.00
MIG amount registered:	R21 561 925.00
Public sector amount registered:	R3 018 669.00
Cost per household (Total):	R3 032.00
Cost per household (MIG):	R2 660.00
Number of households:	8 106

All the conditions as agreed upon by the Municipal Manager in the Project Registration Form must be adhered to.

Kind regards

Ms Fortunate Makhubu
Executive Manager: Municipal Infrastructure

Date: 6/05/2010



water affairs

Department:
Water Affairs
REPUBLIC OF SOUTH AFRICA

L. R. Tloubatla
Tel: 051 405 9107
Fax: 051 405 9133
Ref: K40/FS191/105

The Municipal Manager
Setsoto Local Municipality
PO Box 116
Ficksburg
9730

TECHNICAL REPORT: MIG PROJECT

PROVINCE : FREE STATE
DISTRICT MUNICIPALITY: : DC19 THABO MOPUTSANYANA MUNICIPALITY
LOCAL AUTHORITY: : FS 191 SETSOTO MUNICIPALITY

	DEGREES	MINUTES	SECONDS
LONGITUDE	28	19	45
LATITUDE	27	37	30

DESCRIPTION OF SCHEME : Development of Boreholes for Matwabeng and Senekal
REFERENCE NO. : N/A
TECHNICAL REPORT DATE : May 2009
DATE RECEIVED : Jan 2010
NUMBER OF PEOPLE SERVED : 45,669
TOTAL COST OF SCHEME : R 24,580,594.50 (including VAT)
MIG FUNDS ALLOCATED : R 21,561,925 (excluding VAT)
INTEGRAL COMPONENTS : The project consists of the following:

PHASE 2 B

Additional geohydrological investigations, targeted drilling, biological and chemical testing of groundwater from 26 production boreholes in the 2 borehole farms identified.

PHASE 3 A

The civil works accompanied by the installation of mechanical and electrical equipment for the 6 production boreholes identified to date, specifically (with an expected yield of 0.755 Ml/day.

1. The construction of 2,250 kl Zinc Alumine balancing reservoirs.

Development of Boreholes for Matwabeng and Senekal

Handwritten signatures and initials

2. The construction of a 1 MI raised pressed steel reservoir in Matwabeng.
3. The construction of a total of 6 pumpstation buildings , 1 for each borehole.
4. The construction of 2 pumpstation buildings for the booster pumps at the 250kl balancing reservoirs.
5. The supply and installation of 160mm-dia uPVC rising mains from the balancing reservoirs to;
 - The clear water reservoir at the Sand River Water Treatment Works;
 - The new raised pressed steel 1MI steel reservoir in Matwabeng;
6. The supply and installation of the 6 borehole pumps and 2 centrifugal booster pumps;
7. The provision of electricity to the boreholes and booster pumpstations (Solar power will be considered as an alternative as well);

PHASE 3 B

The civil works accompanied by the installation of mechanical and electrical equipment for the 26 production boreholes that will be identified in Phase 2B, specifically (with an expected yield of 3.725 MI/day.

1. The construction of 9,250 kl Zinc Alumine balancing reservoirs;
2. The construction of a total of 26 pumpstation buildings, 1 for each borehole;
3. The construction of 9 pumpstation buildings for the booster pumps at the 9/250 kl balancing reservoirs;
4. The supply and installation of 160mm dia uPVC rising mains from the balancing reservoirs to:
 - The clear water reservoir at the Sand River Water Treatment Works;
 - The new raised pressed steel 1 MI steel reservoir in Matwabeng.
5. The supply and installation of the 26 borehole pumps and 9 centrifugal booster pumps;
6. The provision of electricity to the boreholes and booster pumpstations (Solar power will be considered as an alternative as well).

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 A smaller signature above it.
 The initials "M.M.C." written vertically at the bottom right.

PHASE 4

Long Term Sustainability Management Programme of the boreholes.

- The development of these 32 boreholes will provide approximately 4.5 ML/day of good quality raw water for Senekal and Matwabeng. A 3 year long term sustainability staff training programme is envisaged.

LEGAL REQUIREMENTS

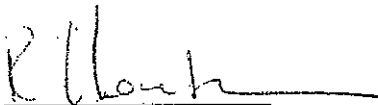
:The necessary environmental impact assessment, authorisation licence, permit application, rezoning and servitude in terms of the various acts must be applied for, where applicable, before the construction of the project can commence.

GENERAL REMARKS:

Augmentation of the raw water supply for Matwabeng and Senekal, with a view of implementing fairly quickly, short term measures through the development of boreholes that will alleviate the problem of insufficient potable water for the Senekal and Matwabeng area. Changes need to be made to the abstraction volume according to the water use license.

RECOMMENDATION:

The development of boreholes to provide additional potable water to residents in Senekal and Matwabeng is recommended for MIG funding.



DIRECTOR - GENERAL:

14/01/2010

DATE:

Signed by: Mr. L. R. Tloubatla

Copy to: Department Cooperative Governance and Traditional Affairs

Private Bag X 804

Pretoria 0001

Attention: Mr. P Bologo

Copy to: Department Cooperative Governance and Traditional Affairs

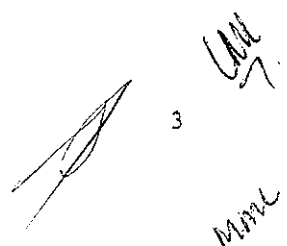
Po Box 211

Bloemfontein

9300

Attention: Mr. P. Viljoen

Development of Boreholes for Matwabeng and Senekal



ANNEXURE B - PERSONNEL SCHEDULE

NAME	TITLE	JOB DESCRIPTION	QUALIFICATIONS	ESTIMATED PERIOD OF ENGAGEMENT (weeks)
CN Kimaru Pr. Eng	Director	Project Director	B. Sc (Eng) Pr. Eng.	15 months
JN Kihiu R. Eng	Senior Engineer/Project Manager	Project Manager	B. Sc (Eng) R. Eng	15 months
SR Makubo	Senior Technician	Design Technician	N. Dip (Cand. Eng. Tech.)	6 months
E Jansen	CAD/GIS Operator	CAD & GIS Drawings	Draughting Diploma	3 months
AO Mmutle	Technician	Engineer's Representative	N. Dip	9 months

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ANNEXURE C - FINANCIAL PROPOSAL

DEVELOPMENT OF BOREHOLES FOR SENEKAL AND MATWABENG (AUGMENTATION OF THE SENEKAL RAW WATER SUPPLY PROJECT)

Value of Civil & Structural Works

R 18,749,500.00

Item	Description	Unit / Percentage (%)	Amount
A1	PROFESSIONAL FEES		
	Inception	5	85,266.75
	Preliminary Design	25	426,333.75
	Detail Design	25	426,333.75
	Documentation and Procurement	15	255,800.25
	Construction Administration and Supervision	25	426,333.75
	Close Out	5	85,266.75
	Sum of Engineering Services		R 1,705,335.00
A2	Construction Supervision		
A2.1	Cost per month (I ER)	R 60k per mth for 9mths	R 540,000.00
A2.2	Travelling costs	R 10.56k per mth for 9mths	R 95,040.00
	Sum for Construction Supervision		R 635,040.00
	Sum for Normal Services (A1 & A2)		R 2,340,375.00
B	DISBURSEMENTS		
B1	Geotechnical Investigations		
B1.1	Design Phases		R 95,000.00
B1.2	Construction phases		R 40,000.00
	Sum for Geotechnical Investigations		R 135,000.00
B2	Surveying		
B2.1	Design Phase		R 165,000.00
B2.2	Construction phase		R 72,050.00
	Sum for Surveying		R 237,050.00
B3	Other recoverable costs not listed		R 100,000.00
	Sum for Additional Services (B1 - B3)		R 472,050.00
	Sum for Normal and Additional Services (Excl. VAT)		R 2,812,425.00

NB: The Professional Fees are calculated as per the Government Gazette No. 32851 of 4 January 2010

Call
M.W.W.

PROJECT IMPLEMENTATION PLAN - DEVELOPMENT OF BOREHOLES IN SENEKALMATWABENG

ID	Task Name	Duration	Start	Finish	Predecessor	Resource Names
1	Inception & Preliminary design	1 day	Tue 01/06/10	Tue 01/06/10		Prj Mgr/Mun Mgr
2	Conclude scope of works and services	1 day	Tue 01/06/10	Tue 01/06/10		Prj Mgr/Mun Mgr
3	Sign agreement	1 day	Tue 01/06/10	Tue 01/06/10		Prj Mgr/Mun Mgr
4	Obtain regulatory approval (DWAf & MfG)	1 day	Tue 01/06/10	Tue 01/06/10		Prj Mgr/Mun Mgr
5						
6	Design	62 days?	Fri 16/07/10	Mon 11/10/10		Prj Engineer
7	Undertake geohydrological, geotechnical investigation & topographical surveys etc	30 days	Fri 16/07/10	Thu 26/08/10		Prj Engineer
8	Boreholes drilling	30 days	Mon 30/08/10	Fri 08/10/10		Prj Engineer
9	Do a detailed design of the pumping stations and the rising mains	10 days	Mon 23/08/10	Fri 03/09/10	9	Prj Engineer
10	Submit a draft design report and draft working drawings	1 day?	Mon 06/09/10	Mon 06/09/10	8	Prj Mgr
11	Obtain comments and feedback from the employer on the design	1 day?	Mon 11/10/10	Mon 11/10/10	8	Prj Mgr
12	Discuss employers comments on the design and adopt	1 day?	Wed 15/09/10	Wed 15/09/10		Prj Mgr
13	Prepare and submit draft bid documents for employers review	5 days	Mon 20/09/10	Fri 24/09/10		Prj Mgr
14	Amend tender documents to capture employers comments and resubmit	3 days	Thu 30/09/10	Mon 04/10/10		Prj Mgr
15						
16	Documentation and Procurement	60 days?	Fri 08/10/10	Thu 30/12/10		Prj Mgr
17	Advertisement of tender	1 day?	Fri 08/10/10	Fri 08/10/10		Prj Mgr
18	Prepare and submit bid evaluation report to the employer	50 days	Mon 11/10/10	Fri 17/12/10		Prj Mgr
19	Adjudication of report, bid report and other instructions	5 days	Mon 20/12/10	Fri 24/12/10	18	Prj Mgr
20	Discuss and adopt comments and recommendations by employer	3 days	Mon 27/12/10	Wed 29/12/10	19	Prj Mgr
21	Assist employer with contract negotiations	1 day?	Thu 30/12/10	Thu 30/12/10	20	Prj Mgr
22	Assist employer with all contract documentations	14 days	Mon 13/12/10	Thu 30/12/10		Prj Mgr
23	Appoint contractor upon receipt of instruction	1 day?	Thu 30/12/10	Thu 30/12/10		Prj Mgr
24						
25	Construction management and site supervision	266 days?	Mon 03/01/11	Mon 09/01/12		Contractor
26	Appoint and Induct site supervision staff	3 days	Mon 03/01/11	Wed 05/01/11		Contractor
27	Mobilize on site	8 days	Mon 03/01/11	Wed 12/01/11		Contractor
28	Construction and contract administration, by winning bidder	230 days	Mon 17/01/11	Fri 02/12/11		Prj mgr/Prj eng
29	Preliminary and general	10 days	Mon 17/01/11	Fri 28/01/11		Contractor
30	Pump stations	220 days	Mon 31/01/11	Fri 02/12/11	29	Contractor
31	Rising mains	220 days	Mon 31/01/11	Fri 02/12/11	29	Contractor
32	Project handover to employer complete with as-built-drawings	1 day?	Mon 09/01/12	Mon 09/01/12		Contractor
33						
34	Close out	18 days?	Mon 01/08/11	Mon 22/08/11		Prj Engineer
35	Inspection and supervision of remedial works	1 day?	Mon 01/08/11	Mon 01/08/11		Prj Engineer

Project: PIP 110054 Senekal Borehole
 Date: Mon 02/08/10

Legend:
 ■ Task
 ▬ Split
 ▬ Progress
 ▬ Milestone
 ▬ Summary
 ▬ Project Summary
 ▬ External Tasks
 ▬ External Milestone
 ▬ Deadline

Page 1



PART C4.4

**Letter from ISA & Partners to Setsoto
Local Municipality on the proposed Short
to Medium term measures to Augment
Raw Water Supply to Senekal and
Matwabeng**

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[Handwritten initials]

ISA & PARTNERS

Consulting Engineers & Project Managers
Also in Bloemfontein and Cape Town

66 Nyala Street Postnet Suite 252
Doorn Private Bag X25
WELKOM WELKOM, 9460

Tel: (057) 352 4099 | Fax: (057) 352 6116 | E-mail: infowkm@isapartners.co.za



28 September 2007

Our Ref: P110023/L076/CN KIMARU

The Municipal Manager
Setsoto Local Municipality
Private Bag 116
FICKSBURG
9730

ATTENTION: MR. T.J. MAKELEFANE

Sir,

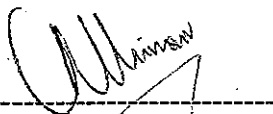
PROPOSED SHORT TO MEDIUM TERM MEASURES TO AUGMENT THE RAW WATER SUPPLY TO SENEKAL AND MATWABENG

1. We refer to ongoing sanitation projects in Matwabeng/Senekal under the Bucket Eradication Programme (BEP) and their current and future impact on water supply for the broader community of Matwabeng and Senekal. We further refer to various discussions between your Messrs TJ Makelelane, M Kohrs and L vd Merwe and our Mr CN Kimaru regarding the present challenges and proposed solutions for the raw water supply to Matwabeng and Senekal.
2. The following is a brief assessment of the current sources of raw water for Matwabeng and Senekal as at 7 September 2007 following a site visit:
 - i) Cyferfontein off-channel storage dam on the Sand River:
The water level in the Sand River was below that of the inlet channel hence no water could be pumped into the Cyferfontein dam, whose level has fallen to a critically low level. Only water from the Sand River weir can be pumped to the waterworks at this stage; thus there is no additional / alternative raw water source in place here.
 - ii) De Put off-channel storage dam on the Sandspruit River:
The water level has fallen significantly and the volume available is approximately less than 1/3 of the available storage volume.
3. The following options have been considered for augmenting the raw water supply to Matwabeng and Senekal (***and can be categorised as medium to long term options***):
 - i) The construction of a new dam in the Rosendal with a raw water pipeline to Senekal;
 - ii) The raising of the dam wall on the Sandspruit River to increase the volume of water available for the De Put dam.

4. As a **short to medium term option**, we recommend the recommissioning of the boreholes that used to provide raw water to Matwabeng and Senekal before the surface water options outlined in the aforementioned item 2 were constructed. The advantage of this is that significant volumes of raw water can be made available to supplement the existing surface water sources and this will alleviate the critical shortages that may occur in the event of the failure of the summer rains. The present low dam levels and high temperatures experienced thus far are indicative of possible drought conditions.
5. As a result of the anticipated pressures expected on the water supply system of Matwabeng and Senekal as a result of the implementation of the BEP, ISA and Partners commissioned a firm of Geohydrologists (Metsi Metseng Geological Services) to undertake a preliminary assessment of the old groundwater sources (boreholes) to enable an informed decision to be made on the viability of recommissioning these boreholes.
6. A summary of their preliminary assessment indicated that 6 boreholes are available in the Matwabeng and Senekal area and 4 out of the 6 can be put into operation fairly quickly, while the remaining 2 will require redrilling. Testing of the boreholes and chemical analysis of the water will also be necessary to provide detailed information on the volume and quality of these groundwater sources.
- i) The approximate cost of the borehole pump tests and water quality testing for the 4 usable boreholes will be approximately **R 55,000.00 (excl. VAT)**. ***This work can be completed in approximately 7 – 10 days;***
 - ii) The approximate cost of the borehole pump tests and water quality testing for all 6 boreholes (including redrilling of 2 boreholes) will be approximately **R 166,000.00 (excl. VAT)**.
 - iii) The detailed costs of equipping the boreholes and installing pipework to the nearest waterworks will be estimated once Setsoto Local Municipality provides an approval in principle of this initiative.
7. A report on the cost and implementation programme for the raising of the dam wall on the Sandspruit River close to De Put dam for the submission of a drought relief application will be forwarded shortly.

We trust that you will find it in order. However should you have any queries, please do not hesitate to contact the undersigned.

Yours faithfully



 CN KIMARU Pr Eng

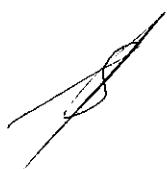
COPIES: 1) Mr M Kohrs, Technical Manager, Setsoto Local Municipality
 2) Mr L VD Merwe, Unit Technical Manager, Senekal/Matwabeng, Setsoto Local Municipality





PART C4.5

Technical Report for the Augmentation of the Raw Water Supply to Senekal and Matwabeng


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18 December 2007

Our Ref: P110042/L003/CN KIMARU

The Municipal Manager
Setsoto Local Municipality
Private Bag 116
FICKSBURG
9730

ATTENTION: MR. RS KAU

Sir,

AUGMENTATION OF THE RAW WATER SUPPLY TO SENEKAL AND MATWABENG

SUBMISSION OF TECHNICAL REPORT

Enclosed herewith is a Technical Report for the short and medium term measures to Augment the Raw Water Supply for Senekal and Matwabeng for your attention.

Please note that we have omitted the costs of the emergency works to repair the dam wall that was breached on the De Put dam as this has been addressed separately by Setsoto Local Municipality.

If you have any queries about this or other matters, please do not hesitate to contact the undersigned.

Yours faithfully

A handwritten signature in black ink, appearing to read 'C.N. Kimaru', written over a horizontal line.

C.N. KIMARU Pr Eng

COPIES: 1) Mr M Kohrs, Technical Manager, Setsoto Local Municipality
 2) Mr R Ntli, Department of Water Affairs and Forestry, Free State Province

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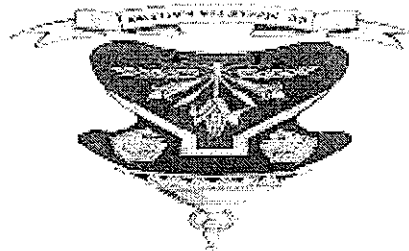
DECEMBER 2007

TECHNICAL REPORT

AUGMENTATION OF THE RAW WATER
SUPPLY FOR MATWABENG AND SENKAL

FREE STATE PROVINCE

(MATWABENG/SENKAL)



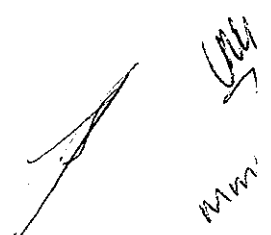
SETSOTO LOCAL MUNICIPALITY

SETSOTO LOCAL MUNICIPALITY
(MATWABENG/SENEKAL)

AUGMENTATION OF THE RAW WATER SUPPLY FOR
MATWABENG AND SENEKAL

TECHNICAL REPORT

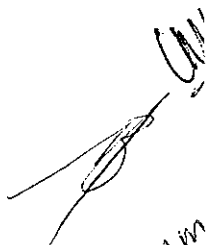
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LIST OF DRAWINGS

- P110042/001 : Locality Plan
- P110042/002 : Plan showing existing De Put Dam and existing Boreholes
- P110042/003 : Plan of proposed new layout of De Put dam after raising of the Dam wall on the Sandspruit River by 4m
- P110042/004 : Plan showing Boreholes which will be exploited in the near future – Borehole Farm No.1
- P110042/005 : Plan showing Boreholes which will be exploited in the near future – Borehole Farm No.2


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1. INTRODUCTION

Setsoto Local Municipality is in the process of upgrading the living standards of the communities of Senekal and Matwabeng by providing, among other services, additional serviced residential erven in Matwabeng as a result of the population growth. Among the services being currently provided, is sanitation infrastructure (as part of the Department of Water Affairs and Forestry's Bucket Eradication Programme) and 1,154 new residential erven in the south-eastern part of Matwabeng. In order to provide these services adequately sufficient additional quantities of raw water are urgently required to provide the for the increased potable water demand. In order to do this, the following short to medium term measures are proposed:-

- i) A comprehensive geological survey and drilling programme followed by the drilling of a series of production boreholes close to the two existing water treatment works in the aquifers of the Sandspruit and Sand rivers respectively;
- ii) The raising of the dam wall on the Sandspruit river, to provide additional storage capacity at the De Put dam;
- iii) Upgrading of the old Senekal Water Treatment plant;
- iv) Construction of additional potable water reservoirs

2. GENERAL

2.1 Locality

The town of Senekal/Matwabeng is located in the eastern Free State and is approximately 74 km east of Welkom and 178 km north east of Bloemfontein and is accessible via the N5 between Winburg and Harrismith, please refer to the attached locality plan P110042/001.

It forms part of Setsoto Local Municipality which also includes the towns of Ficksburg/Meqheleng, Clocolan/Hloholwane and Marquard/Moemeneng. It is also within the jurisdiction of Thabo Mofutsanyane District Municipality.

The Setsoto Local Municipality is located in the heart of flourishing and progressing agricultural region. Apart from grain production, the production of meat and dairy products also features prominently. Senekal is also home to some historical monuments including buildings, fossilised remains of plants and relics from Anglo Boer War.

The Sand River flows from east to west towards the Allemanskraal Dam to the west of Senekal and the topography of the area is varied with moderate slopes in some areas and steep slopes in others, hence the prevalence of number of natural watersheds.

2.2 Nature and Extent of Problem

Over the last thirteen years, Matwabeng/Senekal has experienced a steady growth in the number of residents as a result of people moving off farms and settling within the municipality as well as due to the natural population increase. The population has increased from approximately 34,879 to the present 45,550, a growth rate of approximately 2.40% per year (please refer to Table 2 for details). This large influx of people has put Setsoto Local Municipality under tremendous pressure to provide basic services, especially water.

The additional challenge to Setsoto Municipality is to provide improved water and sanitation services to it's people in line with the government's minimum service levels for water and sanitation, while also addressing the legacy of apartheid by eliminating the unhygienic and undesirable bucket sanitation system currently in place in most of Matwabeng.

The legacy of apartheid regarding the inequitable provision of sanitation is manifested in the large numbers of previously disadvantaged residents of Matwabeng who still use the bucket system of sanitation. Specifically, 2,811 of the 6,786 sites (41%) in Matwabeng still use the bucket system of sanitation.

Over the last few years due to the unpredictability of global weather patterns, which in turn has resulted in irregular rainfall patterns, the run off into the two rivers from which Senekal and Matwabeng obtain their raw water (the Sand and Sandspruit rivers), has been significantly less than when these surface water sources (dam) were constructed.

As recently as September 2007, the level of water in the Cyferfontein dam was less than 1/4 of it's capacity with the Sand River inlet channel level too low to allow for the pumping of water into it. The De Put dam close to the Sandspruit River was in a similar position with the water level less than 1/3 of the storage capacity.

The previous position of the existing surface water sources has necessitated a look into alternative sources of raw water for Senekal and Matwabeng in September 2007. ISA & Partners were requested by Setsoto Local Municipality to further investigate the viability of the exploitation of alternative raw water sources primarily to ensure the viability of installing water-borne sanitation for the residents of Matwabeng who were currently utilising the bucket system. ISA & Partners engaged the services of a professional geohydrologist and a registered dam engineer as part of the investigations to identify viable alternative raw water sources from Senekal and Matwabeng.

3. EXISTING WATER RESOURCES AND INFRASTRUCTURE

3.1 RAW WATER SUPPLY – SURFACE WATER SOURCES

Senekal and Matwabeng obtain raw water from two dams, namely the Cyferfontein of channel storage dam on the Sand River and the De Put off – channel storage dam on the Sandspruit River.

3.1.1 Cyferfontein Dam

From the weir on the Sand River, the Cyferfontein Dam has water pumped into it when the level of water in the Sand River is above a certain level. The storage capacity of the Cyferfontein dam is approximately 25 million cubic metres (m³). During the times of drought and low rainfall, the level of the in the Sand river is too low to allow any water to be pumped into the Cyferfontein dam. The wall on the Sand River was constructed in 1969 and the Cyferfontein dam was constructed in the early 1980s.

3.1.2 De Put Dam

From the weir on the Sandspruit River the De Put dam has water pumped into it only when there is rainfall and there is water flowing over the weir. The storage capacity of the weir is approximately 12,000 cubic metres (m³) and thus delivers a very limited amount of water. The De Put dam was constructed in the early 1980s.

The original weir was designed for height of 4 metres higher than the earth banks but it was only built to the height of the earth banks because of the massive sediment yield that was coming from the catchments area. Through a programme by the Department of Agriculture the construction of fifteen (15) retaining wall in the most critical dongas (eroded gullies) and the establishment of plant growth, the transportation of large amounts of sediment to the weir were greatly reduced.

3.1.3 Assessment of Surface Water Sources

Both the Cyferfontein dam and the De Put dam are dependant on the levels of water in the adjacent rivers for them to be effective. With the unpredictability of global weather patterns which in turn has affected the traditional rainfall patterns, the ability of these two dams to store sufficient quantities of raw water for Matwabeng and Senekal is no longer assured. This lack of assurance and reliability of the primary raw water storage facilities has put significant pressure on Setsoto Local Municipality.

3.2 RAW WATER SUPPLY – GROUND WATER SOURCES

Historically, Senekal and Matwabeng were supplied with water from 6 boreholes (ground water) within a radius of 3 km. These boreholes were able to provide sufficient quantities of water until the increase in the population of Matwabeng led to dramatic increase in the demand for potable water. The development of the surface water sources was then chosen as the preferred raw water source for Senekal and Matwabeng and the boreholes were subsequently abandoned.

The recently concluded boreholes assessment exercise (Phase 1) revealed that only 2 of the 6 boreholes that were previously used could be recommissioned. It is however possible to develop the groundwater sources to provide significant volumes of raw water to Senekal and Matwabeng fairly quickly, refer to item 6.1.

3.3 WATER TREATMENT WORKS

There are 2 water treatment works that provide potable water for Senekal and Matwabeng, the older one is located in Senekal (please refer to the attached for P110042/002) and treats water from the De Put dam and the newer one is located on the banks of the Sand River and it treats water from the Cyferfontein dam and the Sand River weir approximately 15kms from Senekal (please refer to the attached plan P110042/005)

The capacity of the two water treatment works is approximately 9Mℓ/day which is insufficient to meet the present and future potable water demand, please refer to Table 4 and 5 for details.

3.4 POTABLE WATER RESERVOIRS

There are three reinforced concrete potable water reservoirs with a combined storage capacity of 9.54 Mℓ serving both Senekal and Matwabeng. The capacity of these reservoirs is significantly below the 36 hour storage capacity recommended for a town like Senekal/Matwabeng.

3.5 RAW WATER PUMPSTATIONS

There are two raw water pumpstations at the Sand River weir site, one on the weir and the other on the inlet channel for the Cyferfontein dam. The latter pumps water both from the Sand River into the Cyferfontein dam and from the Cyferfontein dam to the water treatment works.

There are also two raw water pumpstations at the Sandspruit river weir site, one on the inlet channel close to the weir pumping water into the De Put dam and the other pumping raw water from the De Put dam to the old Senekal water treatment works.

The electrical and mechanical installations at both these installations are in a reasonable state of maintenance and they are adequate for their purpose.

3.6 WATER RETICULATION NETWORK

All the 1,294 residential, business and industrial erven in Senekal have got individual yard connections and water meters

Of the 6,786 residential erven in Matwabeng, 5,156 erven have got individual yard connections (and of these only 1,491 erven have got water meters). The remaining 1,630 erven make use of communal standpipes.

3.7 WATER DEMAND MANAGEMENT

Over the last few years Setso Local Municipality has been forced to implement water restrictions in Senekal and Matwabeng as a result of the demand of potable water exceeding the available supply. Thus far the education campaign on wise water usage and limitations on non-essential items (e.g. watering of lawns) has enabled Setso Local Municipality to provide all residents with potable water.

There thus exists a good platform for the water demand management programme to be further improved through further education and the installation additional technical monitoring measures namely, installation of zone meters, individual erf meters, replacement of old asbestos and steel pipelines with new PVC pipelines and an ongoing leak detection inspection programme.

4. POPULATION

4.1 Erven Distribution

The total number of erven in Senekal and Matwabeng are shown in Table 1 below:

Table 1: Erven Distribution

	High Income	Low Income	Occupied	Backlog	Total
Senekal	1,294	0	1,294	0	1,294
Matwabeng	0	5,632	5,632	0	5,632
New Sites	0	1,154	1,154	1,040	2,194
TOTAL	1,294	6,786	8,080	1,040	9,120

*This information on the backlog of erven was obtained from the Special Development Plan of Setsoto Local Municipality

4.2 Historical Population Figures

The available historical population figure for Senekal and Matwabeng are shown in Table 2 below.

Table 2: Historical Population figures

Year	Senekal		Matwabeng		Senekal/Matwabeng	
	Population	% growth rate/year	Population	% growth rate/year	Total Population	% growth rate/year
1996	4,335		30,544		34,879	
2001	4,556	1.00	34,714	2.61	39,270	2.40
2007*	4,836	1.00	40,474	2.60	45,350	2.40

The population figures for Senekal and Matwabeng were obtained from the National Population Census of 1996 and 2001 and the 2007 population figures were obtained from the 2002-2007 Setsoto Municipality IDP document and updated by the Technical Services Department of Setsoto Local Municipality.

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4.3 Estimated Future Population Figures

The high growth rate per year of 2.60% (refer to table 2 above) between 1996 and 2007 is largely due to the migration of farm dwellers to Matwabeng in pursuit of better living conditions and amenities and this trend is likely to continue in the foreseeable future, although at a much lower rate of approximately 1.0 – 2.0% per year.

An initial population growth rate of 1.0 % per year is assumed for Matwabeng while for Senekal, a population growth rate of 0.2 % per year is assumed. Please refer to Table 3 below for details of the estimated future population figures.

Table 3: Estimated Future Population figures.

Year	Senekal		Matwabeng		Senekal/Matwabeng	
	Population	% growth rate/year	Population	% growth rate/year	Total Population	% growth rate/year
2007	4,788		40,716		45,504	
2012	4,836	0.20	46,956	1.00	51,792	0.92
2017	4,885	0.20	49,251	1.00	54,236	0.92
2022	4,934	0.20	51,869	1.00	56,802	0.92
2027	4,983	0.20	54,514	1.00	59,497	0.92
2032	5,033	0.20	57,295	1.00	62,328	0.92

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5. CURRENT AND FUTURE WATER DEMAND

5.1 WATER SUPPLY DESIGN PARAMETERS

The Department of Water Affairs and Forestry (DWAF) guidelines recommend that a water usage 60 ℓ/c/d be utilised for all water infrastructure projects. However, based on the usage patterns observed over the years in similar towns and utilising research information from the Water Institute of South Africa (WISA) we have also provided an analysis based on a water usage of 120 ℓ/c/d, which we believe is more realistic and mirrors the actual situation in Senekal and Matwabeng.

The following design parameters have been utilised for the analysis of the current and future water demand:-

- (i) Residential water usage
 - (a) Scenario 1 – 60 ℓ/c/d
 - (b) Scenario 2 – 120 ℓ/c/d
- (ii) Design loss factors
 - (a) Water treatment Works – 10% (LFw)
 - (b) Total Conveyance Losses – 10% (LFw)
- (iii) Summer Peak Factor (SPF) – 1.5
- (iv) Gross Average Annual Daily Demand (GAADD) (Average Daily Peak Demand) = $60/120 \text{ ℓ/c/d} \times \text{LFw} \times \text{LFw} \times \text{SPF}$

5.2 Senekal and Matwabeng residential users

The residential water usage from Senekal and Matwabeng is calculated from the population figures obtained from Table 2 and 3 the water supply design parameters in item 5.1 above. It will be assumed that Setsoto Local Municipality intends to complete the installation of the water reticulation network in the back erven in Matwabeng by 2012.

5.3 Business, Institutional and Industrial users

There are several businesses, institutions and a few industrial users in Senekal and Matwabeng.

The most significant of these is the abattoir which utilises approximately 750m³/d of water.

The remainder of the institutes businesses and schools, do not use as much water as the abattoir and an additional total water amount of 200m³/d was allowed from the business, institutional and school users.

TABLE 4: CURRENT AND PROJECTED FUTURE WATER CONSUMPTION - SCENARIO 1 (60 l/c/d)

YEAR	RESIDENTIAL / HOUSEHOLD		INDUS-TRIAL	INSTITUTION SCHOOLS HOSP. ECT.	MUNICIPAL AND LOSSES	TOTAL CONSUMPTION		AVERAGE DAILY PEAK DEMAND	GROWTH RATE	
	NUMBER	AVERAGE DAILY CONSUMPTION				DAY	YEAR			
		l/c								m ³ /d
2007	8080	60	2,730	750	200	920	4,600	1,679,104	6,900	1
2012	9124	60	3,108	750	200	1,014	5,072	1,851,240	7,608	1
2017	9124	60	3,254	750	200	1,051	5,255	1,918,138	7,883	1
2022	9124	60	3,408	750	200	1,090	5,448	1,988,395	8,171	1
2027	9124	60	3,570	750	200	1,130	5,650	2,062,180	8,475	1
2032	9124	60	3,740	750	200	1,172	5,862	2,139,674	8,793	1

TABLE 5: CURRENT AND PROJECTED FUTURE WATER CONSUMPTION - SCENARIO 2 (120 l/c/d)

YEAR	RESIDENTIAL / HOUSEHOLD		INDUS-TRIAL	INSTITUTION SCHOOLS HOSP. ECT.	MUNICIPAL AND LOSSES	TOTAL CONSUMPTION		AVERAGE DAILY PEAK DEMAND	GROWTH RATE	
	NUMBER	AVERAGE DAILY CONSUMPTION				DAY	YEAR			
		l/c								m ³ /d
2007	8080	120	5,460	750	200	1,603	8,013	2,924,771	12,020	1
2012	9124	120	6,215	750	200	1,791	8,956	3,269,042	13,434	1
2017	9124	120	6,508	750	200	1,865	9,323	3,402,839	13,984	1
2022	9124	120	6,816	750	200	1,942	9,708	3,543,352	14,562	1
2027	9124	120	7,140	750	200	2,022	10,112	3,690,923	15,168	1
2032	9124	120	7,479	750	200	2,107	10,537	3,845,910	15,805	1

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From Table 5 above, utilising Scenario 2, and from observations of the shortages experienced during the recent water restrictions in July – October 2007, we can conclude the following:-

- (i) There is insufficient water treatment capacity to meet the current water demand
- (ii) There is insufficient capacity at the potable water reservoirs to provide the recommended 36hrs storage capacity at the current water demand levels
- (iii) The reduced reliability of the surface water sources due to the unpredictable weather patterns which have impacted on the rainfall patterns demands that alternative raw water sources be developed to provide sufficient quantities of raw water to minimize the present raw water deficiency risk.

6. PROPOSED WORKS

Based on the considerations set out in the preceding chapters, we propose that the following elements should be constructed as part of the proposed project for the Augmentation of the Water Supply to Senekal and Matwabeng.

6.1 DEVELOPMENT OF GROUNDWATER SOURCES (BOREHOLES)

It is proposed that two boreholes farms (refer to the attached plans P110042/004 and P110042/005) with approximately 15 boreholes each be developed. The development of the boreholes will done in four phases as follows:

- (i) Phase 1 (Complete) - Initial geological investigations and drilling
- (ii) Phase 2 (not started) - Detailed geomagnetic surveys, drilling and testing of approximately 30 boreholes in 2 boreholes farms
- (ii) Phase 3 (not started) -
 - Installing Mechanical and Electrical Equipment for the 30 boreholes
 - Modifications at the 2 existing water treatment works for the utilisation of the groundwater
- (iv) Phase 4 (not started) - Long Term sustainability Management Programme of boreholes

The development of these 30 boreholes will provide approximately 4.5 M ℓ /day of good quality raw water for Senekal and Matwabeng

6.2 RAISING OF THE DAM WALL ON THE SANDSPRUIT RIVER

The raising of the dam wall on the Sandspuit river by 4 metres will provide an additional 2.8 million cubic metres (m³) of raw water, increasing the available surface storage capacity for Senekal and Matwabeng by 100% (please refer to the attached plan P110042/003 for details). The full exploitation of this additional capacity will only be possible with the upgrading of the old Senekal water treatment works.

6.3 UPGRADING OF THE OLD SENEKAL WATER TREATMENT WORKS

If the dam wall on the Sandspruit River is raised and the De Put dam's capacity is increased as proposed, the old Senekal Water Treatment Works will be the most economical to upgrade. Based on the water consumption figures on Table 5, the water treatment capacity required to meet the Summer Daily Demand for Senekal and Matwabeng is currently 12 Mℓ /d against any total installed capacity of 9 Mℓ/d.

To cater for the future demand up to 2030 it is proposed that an additional 6 Mℓ/d capacity be allowed for in the upgrading of the old Senekal Water Treatment Works.

6.4 CONSTRUCTION OF ADDITIONAL POTABLE WATER RESERVOIRS

The present combined potable water storage capacity in the form of 3 reinforced concrete reservoirs is insufficient with reference to Table 5 and utilising the recommended 36 hours storage period, the potable water storage capacity presently required is 18 Mℓ against an installed capacity of 9.54 Mℓ, which is only 19 hours storage capacity.

To cater for the future demand (up to 2030) it is proposed that an additional 13 Mℓ potable water storage capacity be allowed for by constructing additional reinforced concrete reservoirs

7. FINANCIAL IMPLICATIONS

The financial implications of the proposed works in the preceding Chapter 6 are as follows:-

7.1 Development of groundwater sources

Phase 1 – Initial investigations	R 55,000.00
Phase 2 – Detailed investigations and drilling	R 615,000.00
Phase 3 – Installation of more equipment	R 2,600,000.00
Phase 4 – Long term sustainability programme	R 360,000.00
Professional Fees	<u>R 545,000.00</u>

Sub-Total 1 R 4,175,000.00

7.2 Raising of the De Put dam weir wall

Dam wall construction	R 1,800,000.00
Ancillary Works	R 700,000.00
Professional Fees	<u>R 375,000.00</u>

Sub-Total 2 R 3,250,000.00

7.3 Upgrading of the Old Senekal Water Treatment Works

Civil Works	R 14,000,000.00
Electrical & Mechanical Works	R 9,000,000.00
Professional Fees	<u>R 3,450,000.00</u>

Sub-Total 3 R 26,450,000.00

7.4 Construction of Reinforced Concrete Reservoirs

Civil Works	R 24,000,000.00
Electrical & Mechanical Works	R 2,000,000.00
Professional Fees	<u>R 3,900,000.00</u>

Sub-Total 4 R 29,900,000.00

Sub-Total 5 (1 + 2 + 3 + 4) R 63,775,000.00

VAT (14%) R 8,928,500.00

GRAND TOTAL R 72,703,500.00

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It is proposed that Setsoto Local Municipality may implement these proposals in stages as funds are available, however, all the elements will have to be implemented in the near future as they are essential to address the water supply problems that Senekal and Matwabeng has experienced over the years.

8. OPERATIONS AND MAINTENANCE

Setsoto Municipality will continue to be responsible for the operation and maintenance of the new installations. They have the necessary technical personnel in Senekal and Matwabeng to adequately maintain and service the new infrastructure.

For the new groundwater sources, however, DWAF requires a long term sustainability Management Programme supervised by a Geohydrologist until the responsible authority is fully trained. For this reason a 3 year programme with a registered professional Geohydrologist has been allowed for in the budget.

9. CONCLUSION

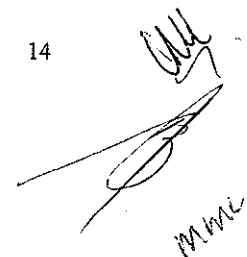
The purpose of this Technical Report is to analyse the options available to Setsoto Local Municipality to Augment the Raw Water Supply for Matwabeng and Senekal, with a view to implementing fairly quickly, short and medium term measures that will alleviate the problem of insufficient potable water that Senekal and Matwabeng has been grappling with for the lost few years.

We trust that this report sufficiently addresses the requirements of the Department of Water Affairs and Forestry, the Free State Provincial Government and Setsoto Local Municipality.

If additional information is required by Setsoto Local Municipality or any other authority, we will be available at all times to be of assistance.

Yours faithfully
For ISA & PARTNERS CONSULTING ENGINEERS

CN KIMARU Pr Eng
Director



Handwritten signature and initials, possibly 'MML'.

PREFACE

The Standard Professional Services Contract has been prepared for use by Employers when they engage firms or individuals (Service Providers) for the performance of knowledge-based expertise provided on the basis of trust.

This document is intended to be used with the procurement documents prepared in accordance with the provisions of SANS 10403: Formatting and Compilation of Construction Procurement Documents



Handwritten signatures and initials in the bottom right corner, including a large signature, the initials 'C.M.', and the name 'Morse'.