

EXECUTIVE SUMMARY
TMG AQUIFER FEASIBILITY STUDY AND PILOT PROJECT:
EXPLORATORY PHASE

FINAL SCOPING REPORT

This Executive Summary provides an overview of the project, explains the environmental requirements and highlights the findings of the Scoping Report for the Exploratory Phase of the TMG Aquifer Feasibility Study and Pilot Project. The purpose of the report is to provide information and an initial scoping of issues to inform public comment, the proponent's application and the environmental authority's decision-making process.

Introduction

It is well known that due to limited supply and increasing demand and the variability of rainfall, water availability is and always will be a critical factor for the City of Cape Town. Alternative options for the City to obtain additional water and to decrease demand were contemplated mainly in three studies, namely the Western Cape Systems Analysis (1989-1995), the Integrated Water Resource Planning Study (1999-2001); and the Cape Metropolitan Area Bulk Water Supply Study (2001-2002). One of the options highlighted in the later study was the possible use of water from the Table Mountain Group¹ (TMG) Aquifer. Due to the lack of certainty regarding the potential of the aquifer, it was recommended that a feasibility study including the monitoring of environmental impacts, was needed to allow the City to compare this relatively poorly understood option with other water resource options.

The TMG Aquifer Feasibility Study and Pilot Project is a long term planning initiative to investigate the groundwater potential of the TMG Aquifer system in the fold mountains of the south-western Western Cape Province. The goal of this five-year study is to determine the feasibility of using the TMG Aquifer as a water source to augment Cape Town's water supply. The study area runs along the Cape Fold Mountains and extends from Cape Hangklip in the south to Tulbagh in the north. In terms of an agreement with the competent environmental authority, the Western Cape Department of Environmental Affairs and Development Planning (DEA&DP), the environmental authorisation process for the study has been separated into two stages, i.e.

- The exploratory drilling phase, intended to verify the predicted hydrogeological characteristics of the TMG Aquifer system, to obtain more monitoring data, and to refine the siting of the potential pilot wellfield/s – **no abstraction of water will take place during this phase**; and
- The pilot wellfield phase, during which environmental monitoring will continue and a number of pilot production boreholes will be drilled to develop one or more wellfields with a combined target yield of 3 to 5 million m³/annum for three years.

This report deals only with the Exploratory Phase. The Pilot Wellfield Phase will be subject to a separate EIA process at a later stage, should the study proceed.

The Environmental Scoping Process

On 5 September 1997 the Environmental Impact Assessment (EIA) Regulations were promulgated in terms of the Environment Conservation Act (No.73 of 1989). Regulation 1182 (as amended) identifies certain activities, which “could have a substantial detrimental effect on the environment”. These activities require authorisation from DEA&DP. For this particular phase of the project, the activities requiring authorisation include the construction or upgrading of tracks, using conservation, open space or agricultural land for exploration for groundwater and the storage and handling of hazardous substances (diesel, petrol etc.) on site.

¹ The Table Mountain Group is a group of rocks which occurs throughout the Cape Fold Mountains and does not refer to “Table Mountain” itself.

Accordingly, the City of Cape Town (CCT) appointed Ninham Shand, as part of the TMG Aquifer Alliance, to assist with satisfying the applicable environmental requirements. The purpose of this Scoping Report is to provide sufficient project information for the public to make informed comment on the project, to ensure that the City of Cape Town meets its legal obligations regarding the environment and to allow the responsible authorities to make an informed decision.

CCT and DEA&DP agreed Authorisation Process for Exploratory Phase of the Project

- *The study team would delineate several target areas of not more than 100ha each.*
- *An Application Form and Scoping Checklist together with a Plan of Study for Scoping would be submitted defining these target areas together with relevant information.*
- *Sensitivity mapping would be undertaken on the target areas by a botanist and an aquatic ecologist. Where necessary, a heritage specialist would also be consulted.*
- *A series of public meetings would be held in towns adjacent to the target areas.*
- *A Scoping Report would be submitted providing information on the sensitivity mapping, public inputs and a project Environmental Management Plan (EMP) for drill sites. The Scoping Report would use the sensitivity mapping to define and delineate “sensitive” areas which would require site specific EMPs and “general” areas which would be managed by a project EMP.*
- *A field visit to the site/s would be arranged if requested by DEA&DP.*
- *A Record of Decision would be issued by DEA&DP for the target areas.*
- *Any authorisation which may be granted for target areas would be subject to the project EMP being implemented on site.*
- *Final borehole selection would then be undertaken.*
 - *If borehole sites were to occur in a portion of an authorised target area which was deemed to be a “general” area, drilling would be controlled under the project EMP and occur under the supervision of an Environmental Control Officer.*
 - *If the borehole site were to occur within a “sensitive” area, a site-specific EMP would be developed and submitted to DEA&DP.*
 - *Within 14 days of DEA&DP receiving a site-specific EMP, a decision would be taken regarding whether or not the borehole could be drilled in this specific location.*
 - *If the site specific EMP was approved the activities could commence.*

This Scoping process is strictly limited to identifying the environmental implications of the Exploratory Phase. Authorisation is being sought by the City of Cape Town for 27 areas within which the borehole drilling and pump testing of exploratory boreholes may be undertaken². Authorisation for the abstraction³ of water is not being sought. This stage will therefore not consider potential abstraction-related impacts, but recognises that the eventual goal of the study entails assessing the feasibility of utilising the groundwater potential of the TMG Aquifer system for bulk supply to Cape Town.

The relatively large size of the Target Site Subareas (TSS) was determined by the need for flexibility because there is uncertainty regarding the nature of the geological structures below ground. If the findings of a borehole are different to what was anticipated, it may result in a drill rig being moved tens or hundreds of metres to a better geological position or may result in the site being abandoned.

² The location of any future pilot well field will be informed by the information gained during the exploratory phase but will not necessarily be limited to those sites drilled during the exploratory phase.

³ Defined by the Dept of Water Affairs and Forestry as taking water for use. Pump testing of boreholes to determine the viability of the borehole is not considered to be abstraction.

The Exploratory Phase

During the Exploratory Phase the proposed activities would entail drilling boreholes within defined areas, selected in terms of their hydrogeological attributes, to obtain rock cores, undertake limited pump testing, and establish monitoring equipment.

Terminology

The study has used various scientific methods to select areas of hydrogeological potential via a successive process of obtaining increasing levels of information for areas which show potential.

Target Zones

*During the Preliminary Phase of the study **Target Zones** were identified. These broke the study area up into large-scale geological formations of interest. These zones were given upper case letters to distinguish them from each other.*

The target zones were:

<i>Target Zone K</i>	<i>Kogelberg</i>	<i>Target Zone W</i>	<i>Wemmershoek</i>
<i>Target Zone H</i>	<i>Hottentots Holland</i>	<i>Target Zone V</i>	<i>Voelvlei</i>
<i>Target Zone T</i>	<i>Theewaterskloof</i>	<i>Target Zone A</i>	<i>Agter-Witzenberg</i>
<i>Target Zone B</i>	<i>Brandvlei</i>		

These areas are mapped in Figure 1

Target Site Areas

*Within the Target Zones a series of **Target Site Areas (TSA)** were identified and investigated in more detail. Each TSA was given the letter of its zone and a sequential number. For example: **W7**.*

During the Preliminary Phase, the TSAs were prioritised based on the hydrogeological characteristics and the potential for scientific learning. Only 10 of the TSAs were selected for further investigation. Those selected TSAs retained their original site identification name so that the study findings could be tracked throughout its history.

The TSAs which were selected for detailed investigation are listed below:

<i>TSA B1</i>	<i>TSA H8</i>	<i>TSA T2</i>	<i>TSA T4</i>	<i>TSA V3</i>
<i>TSA H6</i>	<i>TSA K1</i>	<i>TSA T3</i>	<i>TSA T6</i>	<i>TSA W7</i>

These areas are mapped in Figure 1

Target Site Sub-areas

*Within the Target Site Areas a series of **Target Site Sub-areas (TSS)** each of less than 100ha were identified and investigated in more detail. This is the unit which is being investigated in this Scoping process. Each TSS was given the letter of its zone, the number of its TSA and a sequential lower case letter. For example: **W7a**.*

In preparation for the Exploratory Phase, the TSSs were prioritised based on their hydrogeological characteristics. Only 27 TSSs were selected for further investigation. Those selected TSSs retained their original site identification name. The TSSs for which authorisation is being applied for are listed below:

<i>TSS B1a</i>	<i>TSS T2a</i>	<i>TSS T4b</i>	<i>TSS T6c</i>	<i>TSS W7h</i>
<i>TSS B1c</i>	<i>TSS T2d</i>	<i>TSS T4c</i>	<i>TSS T6d</i>	<i>TSS W7i</i>
<i>TSS H6a</i>	<i>TSS T2f</i>	<i>TSS T4d</i>	<i>TSS V3a</i>	<i>TSS W7k</i>
<i>TSS H6b</i>	<i>TSS T3g</i>	<i>TSS T4e</i>	<i>TSS V3b</i>	
<i>TSS H8</i>	<i>TSS T3h</i>	<i>TSS T6a</i>	<i>TSS W7d</i>	
<i>TSS K1</i>	<i>TSS T4a</i>	<i>TSS T6b</i>	<i>TSS W7f</i>	

These areas are described and mapped in Chapter7 of the report.

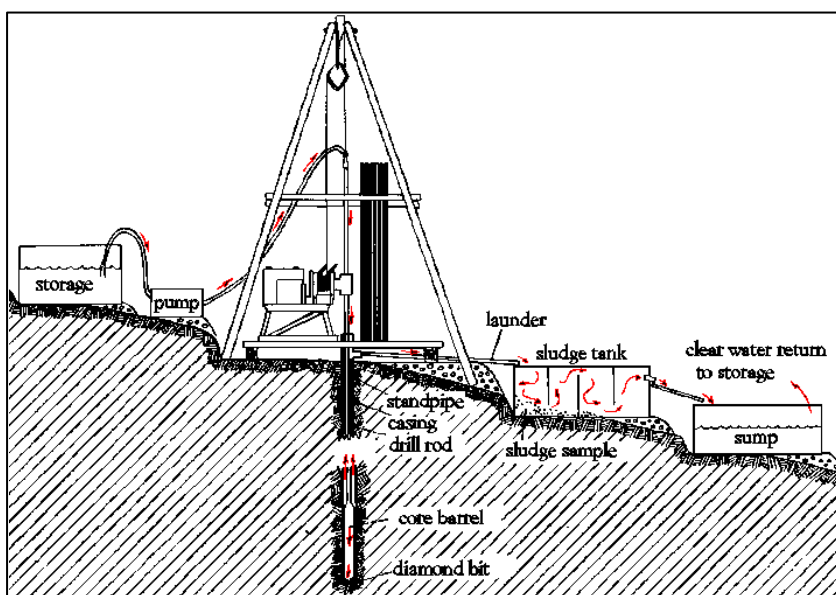
Borehole site *Within each approved TSS one or more boreholes may be drilled. The positioning of these borehole sites has not yet occurred and will be informed by the EIA process. The City of Cape Town wishes to allow for up to 7000m (approximately 15-20 borehole sites) to be drilled during the Exploratory Phase of the Project.*

FIGURE 1: INSERT MAP OF TSAs

Limited pump testing would take place to ascertain the hydrological properties of the aquifer at certain sites. Once completed, the boreholes would either be sealed or equipped for monitoring groundwater levels and water chemistry. Each borehole sites would disturb an area not exceeding 600 m² (excluding access tracks). These sites generally would house a diamond-tipped or percussion drilling rig, winch, drilling rods, storage facilities for rock core samples, fuel containers (bowser or drums), lubricants, drilling fluid and a portable toilet. Some form of sump and/ or channel will be required to catch and drain potential artesian flow and recirculate water used for lubrication from the drill site.

Where possible, existing access tracks and roads will be used to gain access to the borehole sites. Where such access does not exist, tracks will have to be constructed. On some sites, related activities or structures may include the need to construct causeways across watercourses, secure unstable or sensitive surfaces (such as unconsolidated sand or seep areas) against driving-induced damage and erosion. Existing roads may need upgrading, damage repaired and erosion minimised.

Figure 2: Diagram of a typical drill site



The drilling activities will last for about 10 months in total with approximately 4 - 8 weeks per borehole.

Environmental Management Plans (EMPs)

Two kinds of Environment Plans were anticipated in the process agreed between the CCT and DEA&DP, namely a project EMP and a Site-specific EMP. The project EMP contains information regarding how the drilling site would need to be established,

managed and closed in order to minimise potential impacts. This project EMP would be incorporated into the tender documents for drilling contracts and would be implemented for all sites.⁴

The Site-specific EMP would be imposed in addition to the project EMP to ensure that, in sensitive areas, the specific site conditions of a borehole site had been taken into account and where necessary tailored actions specified to protect that area. This cannot be prepared until the borehole locations within the TSSs have been finalised.

Receiving Environment

The study area falls within the Cape Floristic Region which is known for its high levels of plant endemism and vulnerability to processes that threaten its biodiversity. The study area also broadly incorporates the Boland Mountain Complex, one of the eight protected areas forming part of the Cape Floristic Region which was declared a World Heritage Site by the UN Committee in June 2004. A specialist study was undertaken to map the habitat types of each TSS. This enabled an average ecological sensitivity rating to be assigned to each of the 27 TSSs based on distribution of habitat type over the study area and within the TSS, sensitivity to erosion, vulnerability to invasion and the sensitivity to location of the disturbance within a habitat (edge effect). (Table 1)

⁴ The Project EMP is included in **Chapter 9** of the report

TABLE 1: Target Site Sub-areas

TSS Name	Location/Landuse	Co-ordinates of centre point	Size (ha)	Elevation (m)	Ave. Ecological Sensitivity Rating
Brandvlei					
B1a	Mountain Catchment Area	Lat: 34.00 Long: 18.22	49.98	410	Sensitive
B1c	Mountain Catchment Area, SOS youth camp hut	Lat: 34.01 Long: 19.22	78.30	393	Sensitive
Hottentots Holland					
H6a	Mountain Catchment Area (Steenbras Dam) & Kogelberg Biosphere Reserve	Lat: 34.20 Long: 18.87	16.48	374	Highly Sensitive
H6b	Mountain Catchment Area (Steenbras Dam) & Kogelberg Biosphere Reserve	Lat: 34.21 Long: 18.85	35.12	434	Highly Sensitive
H8	Mountain Catchment Area (Steenbras Dam) & Kogelberg Biosphere Reserve	Lat: 34.19 Long: 18.90	95.64	425	Sensitive
Kogelberg					
K1	Kogelberg Biosphere Reserve	Lat: 34.28 Long: 18.90	27.60	103	Highly Sensitive
Theewaterskloof					
T2a	Hottentots -Holland Nature Reserve	Lat: 34.10 Long: 19.01	36.26	489	Highly Sensitive
T2d	Hottentots -Holland Nature Reserve	Lat: 34.11 Long: 19.01	47.11	387	Sensitive
T2f	Hottentots -Holland Nature Reserve	Lat: 34.10 Long: 19.03	51.81	391	Sensitive
T3g	Hottentots -Holland Nature Reserve	Lat: 34.09 Long: 19.03	57.30	550	Not Sensitive
T3h	Hottentots -Holland Nature Reserve	Lat: 34.08 Long: 19.04	35.28	770	Not Sensitive
T4a	Hottentots -Holland Nature Reserve	Lat: 34.05 Long: 19.03	31.93	724	Highly Sensitive
T4b	Hottentots -Holland Nature Reserve	Lat: 34.05 Long: 19.04	58.93	630	Highly Sensitive
T4c	Hottentots -Holland Nature Reserve	Lat: 34.06 Long: 19.05	52.67	594	Sensitive
T4d	Hottentots -Holland Nature Reserve	Lat: 34.07 Long: 19.05	48.39	559	Not Sensitive
T4e	Hottentots -Holland Nature Reserve	Lat: 34.07 Long: 19.06	92.19	574	Not Sensitive
T6a	Hottentots -Holland Nature Reserve	Lat: 34.00 Long: 19.09	27.80	374	Highly Sensitive
T6b	Hottentots -Holland Nature Reserve	Lat: 34.00 Long: 19.11	21.27	393	Highly Sensitive
T6c	Hottentots -Holland Nature Reserve	Lat: 34.00 Long: 19.10	14.92	348	Highly Sensitive
T6d	Hottentots -Holland Nature Reserve	Lat: 34.01 Long: 19.11	34.94	387	Sensitive
Voelvlei					
V3a	Waterval Nature Reserve & Voelvlei Conservancy/ Elandskloof Farm	Lat: 33.46 Long: 19.11	43.51	456	Highly Sensitive
V3b	Waterval Nature Reserve & Voelvlei Conservancy/ Elandskloof Farm	Lat: 33.47 Long: 19.13	56.32	378	Sensitive
Wemmershoek					
W7d	Wemmershoek Mountain Catchment Area & Limietberg -Haweqas Nature Reserve & Plantation	Lat: 33.81 Long: 19.06	91.13	351	Sensitive
W7f	Wemmershoek Mountain Catchment Area	Lat: 33.81 Long: 19.08	91.53	324	Sensitive
W7h	Wemmershoek Mountain Catchment Area & Limietberg -Haweqas Nature Reserve & Plantation	Lat: 33.83 Long: 19.06	62.74	227	Not Sensitive
W7i	Wemmershoek Mountain Catchment Area, Dam & Wemmershoek WTW	Lat: 33.84 Long: 19.06	56.03	219	Not Sensitive
W7k	Wemmershoek Mountain Catchment Area & Plantation	Lat: 33.83 Long: 19.04	80.88	290	Sensitive

Public Participation Process

The first stage of the public consultation component of the study consisted of the following aspects:

- Establishing a Key Stakeholder Forum representing civil society to guide the entire TMG Aquifer study (Sept 2002); the KSF has met 6 times.
- Inviting over 1000 individuals and organisations previously listed on the City's water resource database to participate (February 2004);
- Placing English, Afrikaans and Xhosa press adverts in Die Burger; Cape Times; Vukani; Ceres Herald; Worcester Standard, Paarl Post, Times of Hermanus and Helderberg Sun (1st week of April 2004) advertising the study and public meeting dates and calling for comments;
- Sending an Information Pamphlet and letter to I&APs notifying them of public meetings (19 April 2004) and providing Background Information Documents as requested;
- Erecting posters in Somerset West, Grabouw, Paarl and Tulbagh advertising the public meetings;
- Sending press statements to local radio stations, inviting representatives to attend the public meetings and to inform their listeners of the project and the proposed meetings;
- Providing information regarding the project in interviews on Radio Tygerberg and SAFM;
- Providing all project documentation on a project website (www.tmg-aquifer.co.za);
- Hosting four public meetings from 18h30 to 20h00 on 28 April in Somerset West, on 29 April in Grabouw, on 5 May in Paarl and 6 May in Tulbagh; and
- Arranging Focus Group Meetings with Western Cape Nature Conservation Board (22 April 2004); Kogelberg Biosphere Association (28 April 2004); and South African Natural Bottled Water Association (5 May 2004).
- Notification of the Draft Scoping Report, Executive Summary and notice of public meeting sent to all registered I&APs by means of letters posted on 28 September 2004.
- Lodging the Draft Scoping Report (12 August 2004) at the Somerset West, Paarl, Grabouw, Tulbagh, Betty's Bay and Cape Town Public Libraries and on the project website (www.tmg-aquifer.co.za).
- Copies of the Draft Scoping Report were provided to DEA&DP, Heritage Western Cape (HWC) and CapeNature (previously Western Cape Nature Conservation Board).
- A public meeting was held at Stellenbosch University on Saturday 21 August 2004. The minutes were distributed to the attendees.
- The public had the opportunity to submit any written comments by 20 September 2004 (extended from 3 September 2004 due to requests from various stakeholder groups).
- All comments received are included in the Report and summarised in the Issues Trail.

The major issues raised by interested and affected parties (I&APs) can briefly be summarised as follows:

- Impact on rare, endangered or endemic species;
- Alternatives to the abstraction of groundwater including water demand management, increased tariffs and desalination;
- Impact on the water table;
- Whether water abstracted could be used for agriculture and local municipalities/ towns;
- Impact on existing boreholes, springs, seeps, rivers, dams and estuaries;
- Long term running costs;
- Value of using previous experience gained from other schemes;
- Viewing the project in a holistic manner;
- Possible collapse/ subsidence due to abstraction;
- Concern regarding the number of boreholes and volumes abstracted during the exploratory phase;
- Recharge of the aquifer;
- The source and age of water in the aquifer;
- Contamination of the aquifer;

- Interaction between ground- and surface water;
- Compensation for loss of water to farmers;
- Damage to pristine areas during the exploratory drilling;
- Location of monitoring holes e.g. far field monitoring;
- Development of site specific EMPs;
- Involvement of all relevant authorities;
- Time frames for the study;
- Authorisation and permits required;
- Water quality of the aquifer;
- Utilisation of the Cape Flats Aquifer;
- Concerns regarding the environmental impacts as seen in the Kammanassie;
- Funding of the scheme;
- Involvement of key stakeholder groups; and
- Continued communication with I&APs.
- Concerns regarding abstraction, pump-testing impacts and artesian flow on vegetation and riverine systems
- Methodology adopted by the hydrogeological report and phasing of the environmental process
- Concern regarding inclusion of sensitive sites as potential borehole sites
- Concern regarding timeframe and extent of monitoring
- Concerns regarding physical collapse of the area due to dewatering
- Concern regarding the focus on footprint impacts and the lack of consideration of abstraction impacts
- Suggestions for additions to the project Environmental Management Plan

Comments and concerns raised by I&APs with regard to the proposed activities have been incorporated into a detailed “Issues Trail”. The Issues Trail records all the issues and concerns and provides the responses of the CCT and project team, and references as to where in the report each particular issue is addressed.

Screening

This Scoping Report has provided the background to the project and CCTs motivation of the need for this study. Further, it has provided information on the technical criteria used for the determination of sites and the extensive elimination process which lead to the selection of the 27 Target Site Sub-areas documented in this report. Information has been provided regarding the environmental context within which these sites occur as well as detailing the activity itself. An extensive public process including a Key Stakeholder Forum and general public engagement is documented and the issues raised by the public highlighted. An ecological analysis was undertaken to highlight sensitivities of the TSSs to allow some degree of prioritisation of the sites ecologically. A discussion of the potential impacts was undertaken and an Environmental Management Plan included as a practical way of partially mitigating these impacts.

Technical considerations

Each of the 27 TSSs has been selected because of the different hydrogeological opportunities they offer and they cannot be considered to be geologically equivalent. An extensive process was undertaken in a previous phase of the study to reduce the size and number of these sites to those included in this document. None of the 27 sites can be eliminated on technical grounds. Although drilling site requirements were described in general, the drilling conditions will differ depending on the exact borehole location and the potential resulting impacts need to be controlled by the Environmental Management Plan or the Site specific EMP as required.

Natural environment

Most of the proposed TSSs are within the boundaries of proclaimed protected areas including the Kogelberg Biosphere Reserve. Cape Action Plan for the Environment (C.A.P.E) identified many of the areas in question as being highly irreplaceable due to their critical contribution to meeting targets for the conservation of biodiversity and ecological processes in the Cape Floral Kingdom. In light of this, ecological sensitivity plays an important role in determining which TSSs are appropriate for this activity.

The following TSSs were found to be **highly sensitive**, being undisturbed examples of high altitude (except for K1, which is near the coast) fynbos ecosystems of high conservation importance:

H6a	T2a	T6a
H6b	T4a	T6b
K1	T4b	T6c
		V3a

The following TSSs were classified as **sensitive**:

B1a	T2f	W7d
B1c	T4c	W7f
H8	T6d	W7k
T2d	V3b	

The following TSSs were considered **relatively insensitive** or heavily impacted:

T3g	T4d	W7i
T3h	T4e	W7h

An appropriate monitoring programme is pivotal to the determination and minimisation of ecological impacts. It is critical that monitoring is implemented throughout the project lifespan and into the future, as impacts may not be immediately apparent.

Social environment

Due to the relatively remote nature of the TSSs, the proposed activities will not disturb human settlements. Human activities will however be temporarily disrupted by visual, noise and disruption of sense of place impacts during the drilling operation. No specific heritage resources have been identified in the TSSs but provisions will be in place to manage any finds during site establishment, through the EMP. It should be noted however the study area falls within a recently declared World Heritage Site and therefore is sensitive to land use. No site can be specifically excluded on the basis of these impacts.

Conclusions

The TSSs vary in size from 22ha to 92ha. Each drilling site is up to 600m² and it is anticipated that no more than three sites would be drilled in any one TSS. The scale of the impact together with the area's sensitivity to disturbance must be considered in determining how significant potential impacts would be. The impact significance has not been assessed in this report as it is highly dependent on the exact locations of the borehole within any given TSS. The known risks have been responded to by providing an appropriate borehole design together with the project EMP to provide practical mitigation measures to minimise impacts. Site specific issues need to be responded to by providing additional on site environmental management and adaptive management of the drilling procedure. The potential surface impacts are reversible in the short to medium term although depending on the habitat type, the footprint scar may be visible in the medium to long term. The significance of residual impacts after mitigation are expected to be negligible to low in the "relatively insensitive" sites increasing as ecological sensitivity increases.

Recommendations

At the TSS scale, at which the issues have been evaluated, it is impossible to differentiate on the basis of technical or social aspects and it is extremely difficult to characterise the TSSs ecologically. However, ecological sensitivity allows broad conclusions to be drawn. Based on the findings of the study, including the specialist investigations undertaken, and in response to the issues and concerns raised by key stakeholders and I&APs, the following recommendations are made:

1. Representatives of key parties such as the WCNCB, Heritage Western Cape and the landowner should be consulted when finalising boreholes sites and access routes.
2. To mitigate the potential impacts of the activities the Project EMP should be complied with and incorporated in the drilling tender documentation for all borehole sites. The EMPs should be legally binding on the contractor and enforced by an Environmental Control Officer (ECO).
3. Site-specific EMPs should be undertaken, as per the agreed process, and implemented for any borehole site which falls within **areas mapped** as being of “high”, “very high” or “extremely high” sensitivity **within any TSS**⁵.
4. Site-specific EMPs should be undertaken for all boreholes at which pump-tests will occur to ensure that excess water is appropriately controlled and disposed of.
5. Due to the level of ecological vulnerability and the conservation status of many of the sites, additional information to supplement the Scoping Report should be provided to the competent authority **for TSSs which rate as being “sensitive”** in the Average Ecological Sensitivity Rating. It is recommended that the following information be provided together with a Site Specific EMP:
 - a. Site plan of drill site and access route;
 - b. Vegetation survey of the access track and drill site location;
 - c. Identification of any sensitive features, and measures taken to protect them; and.
 - d. Evaluation of likely significance of residual impact
6. **TSSs** which rate as “highly sensitive” in the Average Ecological Sensitivity Rating category require additional environmental assessment on more focussed sites before impacts can be confidently ascertained. These TSSs should therefore proceed to an Environmental Impact Report for more detailed investigation, assessment and evaluation of potential impacts to determine their likely significance.
7. Exploratory boreholes should not be permitted to be used for pilot abstraction without further investigation and motivation once monitoring information is available.
8. The City should initiate the proposed monitoring timeously in order to collect adequate data, to increase understanding of the aquifer and to ensure that potential impacts, resulting from any possible future abstraction by the City from the TMGA, can be identified.

⁵ Mapped areas in recommendation 3 refer to map units within TSSs, whereas Ave Ecological Sensitivity Rating recommendation 5 and 6 refers to whole TSSs.

The Way Forward

The Final Scoping Report was submitted to the City of Cape Town for their review. On the basis of the findings of the Final Scoping Report, as well as financial and technical considerations, the City of Cape Town will decide which TSSs they wish to apply for and will submit the report, together with a letter motivating their selection, to DEA&DP.

This Final Scoping Report has been made available on the project website (www.tmg-aquifer.co.za) and has been lodged in the Somerset West, Paarl, Tulbagh, Grabouw, Stellenbosch, Betty's Bay and Cape Town public libraries.

DEA&DP will thereafter either:

- Issue a Record of Decision based on the information contained in the Final Scoping Report in which it can authorize some, or all, of the 27 TSSs applied for with conditions.
- Issue a Record of Decision refusing authorisation to all of the sites; or
- Indicate that further information is required for some or all sites in order to make an informed decision with regard to the proposed activities, in which event it may instruct the applicant to proceed to the Environmental Impact Report phase.

It should be noted that if a Record of Decision is issued, all identified interested and affected parties (I&APs) on the database would be notified by letter and advised of appeal procedures. I&APs have a 30-day opportunity in which to appeal DEA&DP's decision to the Provincial MEC of the Environment in terms of the Environment Conservation Act.