

ENVIRONMENTAL IMPACT ASSESSMENT: PROPOSED BRINE TREATMENT WORKS AT TUTUKA POWER STATION, MPUMALANGA



AUGUST 2010



SUMMARY DOCUMENT: FINAL ENVIRONMENTAL IMPACT ASSESSMENT REPORT

Eskom is proposing to construct additional infrastructure at the existing Tutuka Power Station, approximately 22 km north east of Standerton, Mpumalanga for the treatment of brine (referred to hereinafter as reject). The treatment facility would consist of a reject concentration plant.

Current status

Underground mine water from the New Denmark Colliery, as a result of coal mining activities, has been sent to the Tutuka power station for treatment since 1989, as the power station had the facility to treat the mine water. The water is treated via a reverse osmosis (RO) treatment process at a rate of 22.4 megalitres (MI)/day (16.4 MI consists of mine water and 6 MI consists of cooling water from the power station). The treated water is split into two streams, namely a clean stream and a reject stream. The reject stream accounts for some 13.4 % of the water (3.0 MI of 22.4 MI per day). Of the 3 MI of reject produced per day, 1.07 MI is utilised on the ash dump for dust suppression, 0.54 MI is evaporated in boilers 1, 2 and 3 and the remaining 0.89 MI is returned to the mine for disposal.

The volume of reject used for dust suppression exceeds the optimal volume for dust suppression. When more reject is applied on the ash dump than what is evaporated, the field capacity is exceeded. This implies a flow through the ash dump which carries the pollutants towards the groundwater. It should be noted that the Tutuka Power Station is a dry ashing station. Consequently, continued disposal of reject on the ash dump is no longer considered to be a feasible solution, as it appears to result in the generation of leachate, causing groundwater pollution.

Some of the excess reject has been evaporated in three of the six boilers (boilers 1, 2 and 3). Eskom commenced with the evaporation of reject in 2003 at various stages of testing in three boilers. Eskom is proposing to further expand this evaporation to the remaining three boilers. This proposed expansion of the evaporation process would however form the subject of a separate EIA process.

The remaining 0.89 MI of brine, not evaporated or used for dust suppression, is returned to the New Denmark Colliery

Purpose of this document

This document provides a summary of the Draft Environmental Impact Assessment Report (EIAR) for the proposed reject concentration plant at Tutuka Power station, Mpumalanga. It provides a brief background and overview of the proposed project, a description of the public participation process undertaken thus far, the list of project alternatives and potential impacts that have been assessed.

~~In addition, you are also invited to attend a Focus Group Meeting, where the findings of the Draft EIAR will be presented and discussed, on Wednesday, 21 July 2010, 11h00-12h30 at the Thuthukani Community Centre, Thuthukani. Please RSVP to the public participation office should you wish to attend.~~

~~Please review this Summary Document and, preferably, the full EIAR, and submit your comments before Friday, 7 August 2010. To comment, write a letter, call or e-mail the Public Participation office. All EIA documents will be available on the Eskom and Aurecon (Pty) Ltd (Aurecon) websites (www.eskom.co.za/eia) and www.aurecongroup.com follow the South Africa and public participation links.)~~

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where it is stored in mined caverns. The caverns used for the storage of reject are located in impermeable rock so that there is less risk of groundwater contamination.

The mine holds a Directive from the Department of Water Affairs, which expires on 31 October 2011, for the disposal of the reject however the current storage volume is diminishing. The mine will therefore be applying for a new licence, in terms of the National Environmental Management Waste Act (No. 59 of 2008), in due course, for the disposal of the reject via other means. Their application process will also include a pipeline to transport the concentrated brine to the new disposal facilities to be established by the mine.

Proposed project

Eskom, Tutuka Power Station, proposes to upgrade its reverse osmosis (RO) plant, by constructing an additional reject concentration plant, within its premises. Through the proposed project, Eskom will treat the wastewater from the mine in its RO plant as per current practice, and then concentrate the resultant reject produced from 3 MI per day to 1 MI per day. All of the concentrated reject would then be returned to the mine, which will be responsible for final disposal in an acceptable manner. Therefore no reject would be irrigated on the ash dump.

Furthermore, groundwater within Tutuka Power Station and more specifically, in the vicinity of the above-ground ash disposal facility and other sources of groundwater pollution, has been contaminated by over-irrigation of the ash with reject. Consequently, Eskom was proposing to construct a treatment works to treat this contaminated groundwater. This would have involved the strategic placement of boreholes and pipelines to intercept the contaminated groundwater, the abstraction of such groundwater and its treatment at a proposed new treatment works and the reject concentration plant.

However, in the investigations undertaken after the Scoping Phase of the Environmental Impact Assessment (EIA) process, the Geohydrology Study found that the pollution plume would not spread if irrigation with reject was halted. It also indicated ~~uncertainty as to whether~~ that the abstraction of the entire plume would not be possible, based on the varied geology present beneath the ash dump. A number of recommendations were made in the report including, amongst others, continued monitoring, increase Cr6⁺ monitoring, ceasing brine irrigation, establishing a baseline for the area into which the ash dump is expanding, proper management of clean and dirty water systems, etc. Based on these findings further monitoring and investigations will be undertaken by Eskom and an appropriate management strategy to the pollution plume will be adopted. Once the best management strategy with regards to the groundwater pollution plume management has been decided, appropriate authorisation processes will be followed, if necessary.

As the proposed reject concentration plant would ensure that it would not be necessary to irrigate any of the brine on the ash dump, Eskom wishes to proceed with this component of the project urgently, in order to minimise the continuation of the pollution plume. Therefore the ground water treatment works will no longer form part of the current EIA process. Therefore the scope of this EIA Report (EIAR) is limited to the proposed construction and operation of the reject concentration plant at the existing RO plant.

Requirements in terms of the National Environmental Management Act and National Environmental Management: Waste Act

EIA Regulations (Regulations 386 and 387) promulgated in terms of the National Environmental Management Act (NEMA) (No. 107 of 1998) (amended), identify certain activities, which "could have a substantial detrimental effect on the environment". These listed activities require environmental authorisation from the competent environmental authority, i.e. the Department of Environmental Affairs (DEA) in the case of Eskom applications, prior to commencing.

Furthermore, the National Environmental Management: Waste Act (No. 59 of 2008) (NEMWA) provides various measures for the prevention of pollution and ecological degradation, as well as ecologically sustainable development in order to protect human health and the environment. In this regard, NEMWA lists certain activities which require a waste management licence, which requires environmental authorisation through the NEMA EIA process.

This proposed project triggers a number of listed activities in terms of NEMA and NEMWA and accordingly requires environmental authorisation and a waste management licence from DEA via the EIA process outlined in Regulation 385 of NEMA.

Aurecon has been appointed to undertake the required environmental authorisation and licencing processes on Eskom's behalf.

EIA Process

The EIA process consists of an Initial Application Phase, a Scoping Phase and an EIA Phase. The purpose of the Initial Application Phase is to commence the project *via* the submission of the relevant department's application forms. The purpose of the Scoping Phase is to identify and describe potential positive and negative environmental impacts, (both social and biophysical), associated with the proposed project, ~~and~~ to screen feasible alternatives to consider in further detail and to identify gaps in knowledge which require further investigation in the EIA phase. The Scoping Phase culminated in the compilation of a Final Scoping Report (FSR).

The FSR outlined the full range of potential environmental impacts and feasible project alternatives and how these were derived. Moreover, included with the FSR was a Plan of Study for EIA, which outlined in detail the elements to be taken through to the EIA phase and the proposed approach to the subsequent and final phase of the EIA process, the EIA Phase. The aforementioned documents were submitted to DEA on 19 April 2010, who subsequently accepted the proposed approach to the EIA Phase by approving the Plan of Study for EIA in a letter dated 11 May 2010. It is on the basis of this acceptance that Aurecon proceeded with the compilation of the EIA Report (EIAR).

The purpose of the EIA Phase, the findings of which are summarised here, is to assess the range of feasible alternatives identified during the Scoping Phase in terms of the potential environmental impacts. Note that only alternatives and impacts relating to the proposed reject concentration plant, as discussed in the FSR and Plan of Study for EIA, have been assessed in this phase. Ultimately the EIAR provides the basis for informed decision-making by the applicant (Eskom), with respect to which option to pursue, and by DEA with respect to the environmental acceptability of the applicant's chosen option.

Public Participation Process

Public participation is a key component of this EIA process and has taken place at various stages throughout the project. The public participation process to date has involved the following aspects:

The initial consultation phase occurred at the outset of the EIA process in January 2010, and its purpose was to present the applicant's motivation for the proposed project and elicit initial issues and comments that Interested and Affected Parties (I&APs) may have had in this regard. The Initial Phase comprised the following steps.

- Advertising the proposed project in the regional (Beeld and The Citizen) and local newspapers (Highveld Tribune and Standerton Advertiser) to initiate the EIA process and invite the public to register as Interested and Affected Parties (I&APs) (29 January 2010 – 2 February 2010);
- Distribution of Background Information Documents and response forms to I&APs on 25 January 2010; and
- A site notice was erected at the east and west security entrances and at the ash disposal entrance at Tutuka Power Station on 9 February 2010;

The Scoping Phase's primary purpose was to present the Draft Scoping Report (DSR) to registered I&APs, to illustrate how their comments to date had been incorporated into the report and to elicit additional issues of concern and/or comment. The Scoping Phase comprised the following steps:

- The DSR was made available to the public at the Thuthukani and Standerton Public Libraries, the security centre at Tutuka Power Station and online on Eskom's and Aurecon's website from 10 March 2010. All registered I&APs were informed of the lodging of the DSR for public comment and invited to open house / public meetings by means of a letter posted on 10 March 2010;
- Advertisements were placed in the Standerton Advertiser and the Highveld Tribune on 11 March 2010 and 16 March 2010 respectively, inviting the general public to attend the public meetings.
- A Focus Group Meeting was held on Wednesday, 24 March 2010, where the findings of the DSR were presented to invited authorities and key stakeholders. The meeting was held in the Thuthukani Community Centre Board Room.
- The Public Meeting / Open House was held on Wednesday, 24 March 2010 to present and discuss the findings of the DSR at the Thuthukani Community Centre;
- All comments received were summarised in a Comments and Responses Report (CRR) (version 1) and responses were included by the project team;
- The Final Scoping Report (FSR) was made available to the public at the Thuthukani and Standerton Public Libraries, the security centre at Tutuka Power Station and online on Eskom's and Aurecon's website from 19 April 2010. All registered I&APs were informed of the lodging of the FSR for public comment by means of a letter posted on 19 April 2010;
- The FSR was submitted to DEA on 19 April 2010; and
- Approval for the Plan of Study was issued by DEA: Waste on 11 May 2010 and by DEA: Integrated Environmental Management on 14 June 2010.

The current EIA Phase aims to present the Draft EIAR to I&APs. This phase comprised:

- Lodging the Draft EIAR at the Thuthukani and Standerton Public Libraries, the security centre at Tutuka Power Station and online on Eskom's and Aurecon's website (www.eskom.co.za/eia and www.aurecongroup.com -follow the public participation links) on **6 July 2010** for public review;
- Holding a Focus Group Meeting to present the Draft EIAR on **21 July 2010**. Notifying I&APs of the meeting and providing them with copy of the Draft EIAR Summary Document; and
- Finalising the EIAR by incorporating all public comment received into a Comments and Responses Report (Version 3).

An appeal period, where I&APs have the opportunity to appeal against the Environmental Decision issued by DEA, will follow the EIA Phase.

Project alternatives

The following feasible alternatives were assessed in the EIAR:

- Activity alternatives:
 - Concentration of reject via a reject concentration plant;
 - "No-go" alternative to reject concentration plant;
- Location alternatives:
 - Three locations for the pre-treatment component of the proposed reject concentration plant including pipeline route corridors; and
 - Three locations for the reject treatment/RO component of the proposed reject concentration plant.
 - ~~Three locations for the proposed reject plant.~~

Assessment of identified impacts

The EIAR has provided a comprehensive assessment of the potential environmental impacts, identified by the EIA team and I&APs, associated with the proposed reject concentration plant. The significance of the potential environmental (biophysical and social) impacts associated with the construction and operation phases of the proposed project are summarised in Table 1 below.

Table 1 Summary of significance of the potential impacts associated with the proposed development

IMPACT		Reject Concentration Plant*		"No-go" alternative	
		No Mit	With Mit	No Mit	With Mit
OPERATIONAL PHASE IMPACTS					
1	Impact on groundwater resources	M+	N/A	M -	L -
2	Impact on visual aesthetics	VL -	VL -	N/A	N/A
3	Impact on economy	N/A	N/A	M -	N
4	Impact on noise	N -	N	N/A	N/A
CONSTRUCTION PHASE IMPACTS					
5	Composite assessment	L -	VL-L -	N/A	N/A

* This assessment is the same for each of the three site alternatives for both the pre-treatment and treatment/RO components as well as the pipeline route corridors.

KEY	Color	Significance	Color	Significance
	Red	H - High Significance	Green	VL - Very Low Significance
	Yellow	M-H - Medium to High Significance	White	N Neutral Significance
	Orange	M - Medium Significance	Purple	H+ High positive significance
	Light Blue	L-M - Low to Medium Significance	Light Purple	M+ Medium positive significance
	Light Green	L - Low Significance	Lightest Purple	L+ Low positive significance
	Lightest Green	VL-L - Very Low to Low Significance		

Operational Phase impacts

The most significant (medium (-)) operational phase impacts on the biophysical and social environment, without mitigation was for the potential impacts of the “no-go” alternative on groundwater and the economy. This is due to the continued irrigation of reject on the ash dump and the expansion of the pollution plume. Alternately reject would have to be sent back to the mine, should it not be irrigated on the ash dump, which would result in the mine being unable to undertake mining operations, and hence the power station would have to operate at lower efficiency rates or Eskom would have to buy in coal to continue at current efficiency rates. Furthermore, this would reduce Eskom’s ability to provide power to the country.

With the implementation of the recommended mitigation measures the impact on the economy would decrease to neutral however the impact on groundwater would remain the same. It should be noted that the only potential positive impact is that of the proposed reject concentration plant on groundwater, which would halt the spread of the pollution plume.

In terms of the potential impacts of the site alternatives and pipeline routes no differences would result.

Construction Phase impacts

None of the construction phase impacts from the proposed reject concentration plant were deemed to have a significant impact on the environment, given their duration (approximately 24 months) and localised extent. The construction impacts were assessed to be of **low (-)** significance, without mitigation measures. With the implementation of an Environmental Management Plan the significance of construction phase impacts is likely to reduce to **very low (-)**.

Recommendations

In comparing the proposed reject concentration plant and the “no-go” alternatives it can be seen that the “no-go” alternative results in negative impacts of **medium (-)** significance on the biophysical and socio-economic environment whilst the proposed brine concentration works results in **medium (+)** impacts and **low (-)** impacts on the biophysical and socio-economic environment. As such the proposed reject concentration plant is the preferred activity alternative.

With regards to the site alternatives for the proposed reject concentration plant, the three alternatives have the same impacts, all of which are of **low (-)** or lower significance. As such there is no site preference from an environmental perspective.

Based on the above, Aurecon are of the opinion that the proposed reject concentration plant and its three site alternatives being applied for be authorised as the benefits outweigh the localised, short term negative impacts. The significance of negative impacts can be reduced with effective and appropriate mitigation through a construction EMP, as described in this report. If authorised, unless financially or technically unfeasible, the implementation of all measures in the EMP should be included as a condition of approval.

Way forward

~~The next stage of this EIA process involves lodging this Draft EIAR at a suite of public venues and hosting a Focus Group Meeting. The opportunities for public involvement are as follows:~~

- ~~• Commenting on the Draft EIAR, which is lodged at the Thuthukani and Standerton Public Libraries, the security centre at Tutuka Power Station and on the Eskom (www.eskom.co.za/eia) and Aurecon websites (www.aurecongroup.com)(follow the Africa Middle East and public participation links). The public will have until 6 August 2010 to submit written comment on the Draft EIAR to Aurecon;~~
- ~~• All registered I&APs were notified of the availability of the Draft EIAR by means of a letter which includes a copy of the Draft EIAR Executive Summary.~~

~~Once~~ The Final EIAR has been completed, and all I&AP comments have been incorporated into the report, it will be submitted to DEA for review and decision-making.

Copies of the Final EIAR can be viewed at the same locations as the Draft EIAR until 14 September 2010. Any comments received will not be included in a Comments and Response Report and will instead be collated and forwarded directly to DEA. If you would like to comment on the Final EIAR, please submit your comments on or before 14 September 2010 to:

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Once DEA has reviewed the Final EIAR, they will need to ascertain whether the EIA process undertaken met the legal requirements and whether there is adequate information to make an informed decision. Should the above requirements be met, they will then need to decide on the environmental acceptability of the proposed project. Their decision will be documented in an Environmental Authorisation, which will detail the decision, the reasons therefore, and any related conditions. Following the issuing of the Environmental Authorisation, DEA’s decision will be communicated by means of a letter to all registered I&APs and the appeal process will commence, during which any party concerned will have the opportunity to appeal the decision to the Minister of Environmental Affairs in terms of NEMA and NEMWA.

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OMGEWINGSINVLOEDBEPALING: BEOOGDE PEKEL-BEHANDELINGSAAANLEG BY TUTUKA KRAGSENTRALE, MPUMALANGA



AUGUSTUS 2010



OPSOMMENDE DOKUMENT: FINALE OMGEWINGSINVLOEDBEPALINGSVERSLAG

Eskom is van voorneme om bykomende infrastruktuur by die bestaande Tutuka Kragentrale, ongeveer 22 km noord-oos van Standerton, Mpumalanga, op te rig vir die behandeling van pekel. Die behandelingsaanleg sal uit 'n pekel-konsentreeraanleg bestaan.

Huidige status

As gevolg van steenkool-mynbedrywighede, en aangesien die Tutuka kragentrale die vermoë het om mynwater te behandel, word ondergrondse mynwater vanaf die New Denmark-steenkoolmyn sedert 1989 vir suiwing na die kragentrale geneem. Die water word by wyse van 'n trusmose-behandelingsproses (TO) teen 22.4 megaliter (MI)/dag gesuiwer (16.4 MI is mynwater en 6 MI is afkomstig van die kragentrale se verkoelingswater). Die behandelde water word in twee strome verdeel, naamlik 'n stroom skoon water en 'n stroom pekel. Ongeveer 13.4 % van die water is pekel (3.0 MI of 22.4 MI per dag). 1.07 MI van hierdie daaglikse 3 MI pekel word vir stofbekamping by die ashoop gebruik; 0.54 MI word in stoomketels 1, 2 en 3 verdamp; en die oorblywende 0.89 MI word na die myn teruggeneem vir die wegdoen daarvan.

Die volume pekel wat vir stofbekamping gebruik word, is meer as die optimale hoeveelheid wat hiervoor benodig word. Sodra meer pekel op die as gespuut word as wat kan verdamp, word die veld se kapasiteit oorskry. Dit beteken dat die water dan deur die as vloei en besoedelende stowwe na die grondwater vervoer. Daar moet kennis geneem word dat die Tutuka kragentrale 'n droë-as kragentrale is. Die voortgesette besproeiing van die ashoop met pekel word dus nie meer as haalbaar beskou nie omdat dit loogstowwe voortbring wat die grondwater besoedel.

Sommige van die oortollige pekel word in drie van die ses stoomketels (stoomketels 1, 2 en 3) verdamp. Eskom het in 2003 met die verdamping van die pekel begin deur die 3 stoomketels op verskillende vlakke te toets. Eskom beoog om hierdie proses na die ander drie stoomketels uit te brei, maar dit sal aan 'n aparte OIB-proses onderwerp word.

Die oorblywende 0.89 MI pekel wat nie verdamp of vir stofbekamping aangewend word nie, word na die New Denmark-steenkoolmyn teruggeneem waar dit in gemynde

Doel van hierdie dokument

Hierdie dokument is 'n opsomming van die Omgewingsinvloedbepalingsverslag (OIBV) vir die beoogde pekel-behandelingsaanleg by die Tutuka kragentrale, Mpumalanga. Dit gee 'n kort agtergrond oor die beoogde projek, beskryf die proses van openbare deelname tot op datum, en bevat 'n lys van die alternatiewe tot en moontlike impakte van die projek wat (tesame met die toepaslike spesialisstudies) tydens die OIB-fase verder ondersoek moet word.

~~U word ook uitgenooi om 'n Fokusgroepvergadering, waartydens die bevindinge van die KOIBV aangebied en bespreek sal word, op **Woensdag, 21 Julie 2010** vanaf **11h00-12h30** by die **Thuthukani Gemeenskapsentrum, Thuthukani** by te woon. RSVP asb. indien u hierdie geleentheid wil bywoon.~~

~~Lees asseblief hierdie Opsompende Dokument, en verkieslik die volledige KOIBV, doeglik deur en lewer voor **Vrydag, 7 Augustus 2010** daarop kommentaar. Skryf 'n brief, of bel of stuur 'n e-pos aan die Kantoor vir Openbare Deelname. Alle OIB-dokumente is beskikbaar op die webtuiste van Eskom www.eskom.co.za/eia en Aurecon (Edms.) Bpk. (Aurecon) (www.aurecongroup.com – volg die “South Africa” en “public participation” skakels)~~

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spelonke geberg word. Hierdie spelonke wat vir die berging van pekel gebruik word, is in ondeurlaatbare rots geleë om die risiko van grondwaterbesoedeling te verlaag.

Die myn beskik oor 'n Direktief van die Departement van Waterwese (wat 31 Oktober 2011 verval) vir die wegdoen van die pekel, maar die bestaande bergingsplek is besig om minder te word. Die myn sal dus mettertyd vir 'n nuwe lisensie in terme van die Wet op die Omgewing: Afvalbestuur (Wet Nr. 59 van 2008) aansoek moet doen vir die wegdoen van die pekel. Die myn se aansoekproses sal ook 'n pyplyn insluit vir die vervoer van gekonsentreerde pekel na die nuwe verwyderingsfasiliteite wat by die myn gevestig sal word.

Beoogde projek

Eskom, Tutuka kragentrale, beoog om sy tru-osmose-aanleg (TO) op te gradeer en 'n bykomende pekel-konsentreeraanleg op terrein te bou. Dit sal Eskom in staat stel om die ondergrondse mynwater – soos tans die geval – in sy TO-aanleg te behandel en die pekel gevolglik vanaf 3 MI per dag na 1 MI per dag te konsentreer. Al die gekonsentreerde pekel sal dan na die myn teruggeneem word, waar dit op 'n aanvaarbare manier finaal weggedoen sal word. Geen pekel sal dus meer op die ashoop gespuit word nie.

Die grondwater by die Tutuka Kragentrale, en meer spesifiek in die omgewing van die bogrondse ashoop, word deur die bedrywighede op terrein besoedel. Eskom was daarom van voorneme om 'n nuwe behandelingsaanleg te bou om die besoedelde grondwater te behandel. Dit sou bestaan het uit die strategiese plasing van boorgate en pyplyne om die besoedelde grondwater te ondervang, die grondwater te onttrek en dan in die nuwe behandelingsaanleg en die pekel-konsentreeraanleg te behandel.

Tydens die Omvangbepalingsfase van die Omgewingsinvloedbepaling (OIB) het die Geohidrologiese Studie egter bevind dat die besoedelingspluim nie verder sal versprei indien die besproeiing met pekel gestaak word nie. As gevolg van die gevarieerde geologie onder die ashoop, ~~is daar ook bedenkinge oor die moontlikheid is dit nie moontlik~~ om die hele pluim te onttrek nie. 'n Aantal aanbevelings was voorgesit in die verslag, onder andere, voortdurende monitering, monitering van toeneme in Cr6⁺, staaking van besproeiing met pekel, vestiging van 'n grondlyn vir die area waarin die ashoop sal uitbrei, behoorlike bestuur van skoon en vuil water sisteems ensovoorts.

Op grond van hierdie bevindinge sal Eskom verdere monitering en ondersoek uitvoer, ander benaderings vir die besoedelingspluim ondersoek, en die mees doeltreffende benadering toepas. Sodra daar besluit is oor die beste benaderings strategie vir die grondwater besoedelingspluim sal Eskom dalk 'n ander goedkeurings proses moet begin.

Aangesien die beoogde pekel-konsentreeraanleg sal beteken dat geen pekel meer op die ashoop gespuit word nie en dat die besoedelingspluim sodoende verminder sal word, wil Eskom graag dringend met hierdie komponent van die projek voortgaan. Die grondwater-behandelingsaanleg is dus nie meer deel van die huidige OIB-proses nie. Sodra daar besluit is op die beste metode om die grondwater-besoedelingspluim te behandel, sal Eskom 'n aparte OIB-proses hiervoor van stapel stuur. Die omvang van hierdie OIB-verslag (OIBV) is dus beperk tot die beoogde bou en bedryf van die pekel-konsentreeraanleg by die bestaande TO-aanleg.

Vereistes kragtens die Wet op Nasionale Omgewingsbestuur en die Wet op Nasionale Omgewing: Afvalbestuur

Die OIB-regulasies (Regulasies 386 en 387) wat kragtens die Wet op Nasionale Omgewingsbestuur (WNOB) (Wet Nr. 107 van 1998) (soos gewysig) afgekondig is, identifiseer sekere bedrywighede wat 'n "beduidende nadelige invloed op die omgewing" kan hê. Hierdie gelyste bedrywighede moet deur die

bevoegde omgewingsowerheid, naamlik die Departement van Omgewingsake (DOS) in die geval van Eskom, gemagtig word voordat daarmee begin kan word.

Die Wet op die Nasionale Omgewing: Afvalbestuur (Wet Nr. 59 van 2008) (WNO:AB) skryf ook verskeie maatreëls voor vir die voorkoming van besoedeling en ekologiese agteruitgang, sowel as vir ekologies-volhoubare ontwikkeling wat die mens se gesondheid en die omgewing beskerm. In hierdie opsig lys WNO:AB sekere bedrywighede wat 'n afvalbestuurslisensie benodig, en dus 'n omgewingsmagtiging by wyse van 'n WNOB OIB-proses moet verkry.

Die voorgestelde projek het 'n aantal gelyste bedrywighede in terme van WNOB en WNO:AB tot gevolg, en verg dus 'n omgewingsmagtiging vanaf die DOS in terme van die OIB-regulasies wat in Regulasie 385 van die WNOB uiteengesit is.

Aurecon is aangestel om die vereiste omgewingsmagtiging en die lisensiëringsproses namens Eskom te hanteer.

OIB-proses

Die OIB-proses bestaan uit 'n Aanvanklike Aansoekfase, 'n Omvangbepalingsfase en 'n OIB-fase. Die doel van die Aanvanklike Aansoekfase is om die met die projek te begin deur die indiening van die nodige departementele aansoekvorms. Die doel van die Omvangbepalingsfase is om moontlike positiewe en negatiewe omgewingsimpakte (beide maatskaplik en biofisies) van die beoogde projek te identifiseer en te beskryf, en daardie haalbare alternatiewe te identifiseer wat meer omvattend ondersoek moet word. Die Omvangbepalingsfase het gekulmineer in die samestelling van 'n Finale Omvangbepalingsverslag (FOBV).

Die volledige reeks moontlike omgewingsimpakte en uitvoerbare projek-alternatiewe, asook hoe hulle bepaal is, word in die FOBV uiteengesit. 'n Studieplan vir die OIB, waarin die beplande benadering tot die volgende en finale fase van die OIB-proses uiteengesit is, was ook deel van die FOBV. Hierdie dokumente is op 19 April by die DOS ingedien. In 'n brief gedateer 11 Mei 2010 het die DOS die beplande benadering en die Studieplan vir die OIB goedgekeur. Op grond hiervan het Aurecon voortgegaan met die samestelling van die OIB-verslag (OIBV).

Die doel van die OIB-fase, waarvan die bevindinge in hierdie versag opgesom is, is om die reeks uitvoerbare alternatiewe wat tydens die Omvangbepalingsfase vir die moontlike omgewingsimpakte geïdentifiseer is, te beoordeel. Neem asseblief kennis slegs daardie alternatiewe en impakte wat op die pekel-konsentreeraanleg van toepassing is (soos in die FOBV en die Studieplan vir die OIB uiteengesit) beoordeel is. Die OIBV sal uiteindelik die basis vorm waarop die applikant (Eskom) 'n ingeligte besluit sal neem oor die opsie waarmee hulle wil voortgaan; asook die DOS 'n besluit sal neem oor die omgewingsaanvaarbaarheid van die applikant se voorkeuropsie.

Proses van Openbare Deelname

Die proses van openbare deelname is 'n sleutelkomponent van hierdie OIB-proses en het op verskillende stadiums van die proses plaasgevind. Die volgende aspekte was tot op datum deel van die proses van openbare deelname:

Die aanvanklike konsultasiefase het met die aanvang van die OIB-proses in Januarie 2010 begin – met die doel om die applikant se motivering vir die beoogde projek bekend te maak en aanvanklike kommentaar vanaf Belanghebbende en Geaffekteerde Partye (B&GPe) te bekom. Die Aanvanklike Fase het uit die volgende stappe bestaan:

- Advertering van die beoogde projek in streekskoerante (Beeld en The Citizen) en plaaslike koerante (Highveld Tribune en Standerton Advertiser) om die begin van die OIB-proses aan te kondig en die publiek uit te nooi om as Belanghebbende en Geaffekteerde Partye (B&GPe) te registreer (29 Januarie 2010 – 2 Februarie 2010);

- Verspreiding van Agtergrond-inligtingsdokumente en 'n Antwoordblad aan B&GPe op 25 Januarie 2010; en
- Aanbring van plakkate by die oostelike en westelike sekuriteitsingang van Tutuka Kragssentrale op 9 Februarie 2010, asook by die ingang na die ashoop.

Die primêre doel van die Omvangbepalingsfase was om die Konsep Omvangbepalingsverslag (KOBV) aan B&GPe beskikbaar te stel, aan te dui hoe hulle kommentaar tot op datum in die verslag opgeneem is, en om verdere kwessies en kommentaar te bekom. Die Omvangbepalingsfase het uit die volgende stappe bestaan:

- Die KOBV was vanaf 10 Maart 2010 beskikbaar gestel by die Thuthukani en Standerton Openbare Biblioteke, die sekuriteitsentrum by Tutuka Kragssentrale, en aanlyn op die webblaaie van Eskom en Aurecon. Alle geregistreerde B&GPe is by wyse van 'n brief wat op 10 Maart 2010 gepos is, in kennis gestel van die beskikbaarheid van die KOBV vir openbare kommentaar, en uitgenooi om 'n ope dag / openbare vergadering by te woon;
- Advertensies waarin die algemene publiek uitgenooi is om die vergaderings by te woon is onderskeidelik op 11 Maart 2010 en 16 Maart 2010 in die Standerton Advertiser en die Highveld Tribune geplaas;
- 'n Fokusgroepvergadering, waartydens die bevindinge van die KOBV aan uitgenooide owerhede en sleutelrolspelers uiteengesit is, is op Woensdag 24 Maart 2010 in die Raadsaal van die Thuthukani Gemeenskapsentrum gehou;
- Die Openbare Vergadering / Ope Dag om die bevindinge van die KOBV te bespreek, is op Woensdag 24 Maart 2010 by die Thuthukani Gemeenskapsentrum gehou;
- Alle kommentaar wat ontvang is, is in 'n Kommentaar- en Antwoordverslag (K&AV) opgesom, tesame met die projekspan se antwoorde daarop;
- Die Finale Omvangbepalingsverslag (FOBV) was vanaf 19 April 2010 aan die publiek beskikbaar gestel by die Openbare Biblioteke te Thuthukani en Standerton, die sekuriteitsentrum by die Tutuka Kragssentrale, en aanlyn op Eskom en Aurecon se webtuistes. Alle geregistreerde B&GPe is by wyse van 'n brief wat op 19 April 2010 gepos is, in kennis gestel van die beskikbaarheid van die FOBV vir openbare kommentaar;
- Die FOBV is op 19 April 2010 by die DOS ingedien; en
- Die Studieplan is op 11 Mei 2010 deur die DOS: Afvalbestuur en op 14 Junie 2010 deur die DOS: Geïntegreerde Omgewingsbestuur goedgekeur.

Die OIB-fase het ten doel om die Konsep OIBV aan alle B&GPe voor te lê. Hierdie fase het die volgende ingesluit:

- Indiening van die Konsep OIBV by die Openbare Biblioteke te Thuthukani en Standerton, die sekuriteitsentrum by die Tutuka Kragssentrale, en aanlyn op Eskom (www.eskom.co.za/eia) en Aurecon se webtuistes (www.aurecongroup.com – volg die skakels na “Africa-Middle East” en “public participation”) op **6 Julie 2010**;
- Hou van 'n finale fokusgroepvergadering op **21 Julie 2010** om die Konsep OIBV te bespreek. B&GPe is van die vergadering in kennis te stel en 'n afskrif van die Konsep OIBV Opsommende Dokument is aan hulle voorsien; en die
- Finalisering van die OIBV deur die insluiting van alle openbare kommentaar in 'n Kommentaar- en Antwoordverslag (Weergawe 3).

Na afloop van die OIB-fase volg daar 'n appèltydperk waartydens B&GPe die geleentheid het om teen die DOS se uitgereikte Omgewingsbesluit te appelleer.

Projek-alternatiewe

Die volgende haalbare alternatiewe is in die OIBV beoordeel:

- Alternatiewe bedrywighede:
 - Die pekel by wyse van 'n pekel-konsentreeraanleg te konsentreer;
 - “No-go”-alternatief (geen pekel-konsentreeraanleg nie);
- Alternatiewe terreine:

- Drie terreine vir die vooraf-behandelingskomponent van die beoogde pekelaanleg, wat korridors vir pyplynroetes insluit.
- Drie terreine vir die behandeling van pekel / tru-osmose-komponent van die beoogde pekelkonsentreeraanleg.
- Drie liggings vir die beoogde pekelaanleg.

Beoordeling van geïdentifiseerde impakte

Die OIBV is 'n omvattende beoordeling van die moontlike omgewingsimpakte wat op die beoogde pekel-konsentreeraanleg van toepassing is, soos deur die OIB-span en B&GPe geïdentifiseer. Die betekenisvolheid van die moontlike omgewingsimpakte (beide maatskaplik en biofisies) van die beoogde projek word in Tabel 1 opgesom.

Tabel 1: Opsomming van die betekenisvolheid van die moontlike impakte wat die beoogde ontwikkeling mag hê

IMPAK		Pekel-konsentreeraanleg*		"No-go"-alternatief	
		Geen Mit	Met Mit	Geen Mit	Met Mit
IMPAKTE TYDENS BEDRYFSFASE				-	-
1	Impak op grondwaterhulpbronne	M+	N.v.t.	M	L
2	Impak op visuele estetika	VL-	VL-	N.v.t.	N.v.t.
3	Impak op ekonomie	N.v.t.	N.v.t.	M	N
4	Impak op geraas	N	N	N.v.t.	N.v.t.
IMPAKTE TYDENS KONSTRUKSIEFASE					
5	Saamgestelde beoordeling	L	BL-L	N.v.t.	N.v.t.

* *Bogenoemde beoordeling is dieselfde vir al drie alternatiewe terreine, wat beide die vooraf-behandeling- en TO-behandelingskomponent en die korridors vir die pyplynroetes insluit.*

SLEUTEL	
H	Hoogs Betekenisvol
M-H	Medium tot Hoogs Betekenisvol
M	Medium Betekenisvol
L-M	Laag tot Medium Betekenisvol
L	Laag Betekenisvol
VL-L	Baie Laag tot Laag Betekenisvol
BL	Baie Laag Betekenisvol
N	Neutraal Betekenisvol
H+	Hoogs positief Betekenisvol
M+	Medium positief Betekenisvol
L+	Laag positief Betekenisvol

Impakte tydens die Bedryfsfase

Die mees betekenisvolle (medium (-)) impakte (sonder mitigasie) van die bedryfsfase op die biofisiese en maatskaplike omgewing was die moontlike impakte van die "no-go"-alternatief op grondwater en die ekonomie a.g.v. die voortgesette besproeiing van pekel op die ashoop en die gevolglike toename in die besoedelingspluim. Die pekel sou alternatiewelik na die myn teruggeneem moes word, wat sou beteken dat die myn nie ontgin kon word nie en dat die kragentrale teen 'n laer doeltreffendheidsvlak sal funksioneer, of dat Eskom steenkool sal moet aankoop om die huidige doeltreffendheidsvlak te behou.

Met die toepassing van mitigasiemaatreëls verlaag die impak op die ekonomie na neutraal, alhoewel die impak op grondwater dieselfde bly. Daar moet kennis geneem word dat die beoogde pekel-behandelingsaanleg slegs 'n positiewe impak op grondwater het, omdat dit die toename in die besoedelingspluim sal stop.

Daar is geen verskil in die moontlike impakte van die verskillende terrein-alternatiewe en pyplynroetes nie.

Impakte tydens die Konstruksiefase

As gevolg van die plaaslike omvang van en die kort tydsduur vir die bou van die pekel-konsentreeraanleg (ongeveer 24 maande), behoort die konstruksiefase geen beduidende impak op die omgewing te hê nie. Die impakte tydens die konstruksiefase (sonder mitigasiemaatreëls) is as **laag (-)** betekenisvol beoordeel. Indien 'n Omgewingsbestuursplan (OBP) toegepas word, sal die impakte van die konstruksiefase waarskynlik **baie laag (-)** wees.

Aanbevelings

Wanneer die beoogde pekel-konsentreeraanleg en die “no-go”-alternatief met mekaar vergelyk word, is dit duidelik dat die “no-go”-alternatief **medium (-)** negatiewe betekenisvolle impakte op die biofisiese en sosio-ekonomiese omgewing tot gevolg het, terwyl die beoogde pekel-konsentreeraanleg 'n **medium (+)** en **lae (-)** impak op die omgewing het. Die beoogde pekel-konsentreeraanleg is dus die voorkeursopsie.

Wat die terrein-alternatiewe vir die beoogde pekel-konsentreeraanleg betref, is die impakte van die drie opsies dieselfde – almal **laag (-)** of minder betekenisvol. Vanuit 'n omgewingsoogpunt is daar dus geen voorkeurterrein nie.

Op grond van bogenoemde is Aurecon van mening dat die beoogde pekel-konsentreeraanleg en die drie terrein-alternatiewe waarvoor daar aansoek gedoen word, goedgekeur moet word omdat die voordele daarvan die nadele van die gelokaliseerde, korttermyn negatiewe impakte oortref. Betekenisvolle of negatiewe impakte kan verlaag word deur die toepassing van 'n doeltreffende en toepaslike OBP tydens die konstruksiefase, soos in hierdie verslag voorgestel. Indien die projek gemagtig word, moet die implementering van alle metodes in die OBP, tensy finansiële of tegniese onmoontlik, 'n voorwaarde vir die goedkeuring wees.

Pad Vorentoe

~~Die volgende stap in die OIB-proses is die beskikbaarstelling van hierdie Konsep OIBV op 'n verskeidenheid plekke en die hou van 'n fokusgroepvergadering. Daar is die volgende geleenthede vir openbare deelname:~~

- ~~• Kommentaar op die Konsep OIBV, wat beskikbaar is by die Openbare Biblioteke te Thuthukani en Standerton, die sekuriteitsentrum by die Tutuka Kragssentrale, en op Eskom (www.eskom.co.za/eia) en Aurecon se webtuistes (www.aurecongroup.com – volg die skakels na “South Africa” en “public participation”). Die publiek sal tot en met 6 Augustus 2010 die geleentheid hê om hulle skriftelike kommentaar op die Konsep OIBV by Aurecon in te dien;~~
- ~~• Alle geregistreerde B&GPe sal per brief in kennis gestel word van die beskikbaarheid van die Konsep OIBV, en 'n afskrif van die Opsommende Dokument van die Konsep OIBV ontvang.~~

~~Sedra Die Finale OIBV is voltooi en alle kommentaar vanaf B&GPe in die verslag ingewerk. Die verslag is dus sal dit by die DOS vir die nagaan daarvan en 'n besluit ingedien word.~~

~~Afskrifte van die Finale OIBV is tot en met 14 September 2010 op dieselfde plekke as die Konsep OIBV beskikbaar. Alle kommentaar wat nou ontvang word sal nie in 'n Kommentaar- en Antwoordverslag opgeneem word nie, maar direk aan die DOS gestuur word. Indien u op die Finale OIBV kommentaar wil lewer, word u versoek om dit voor 14 September 2010 te stuur aan:~~

~~Aurecon~~

~~Vir aandag: Louise Corbett~~

~~Faks: (021) 424-5588 /~~

~~E-pos: louise.corbett@af.aurecongroup.com /~~

~~Posbus 494, Kaapstad, 8000~~

Sodra die DOS die Finale OIBV deurgegaan het, moet hulle besluit of die OIB-proses aan al die wetlike vereistes voldoen het en of daar genoeg inligting is om 'n ingeligte besluit te neem. Indien bogenoemde vereistes nagekom is, moet hulle dan besluit of die beoogde projek uit 'n omgewingsoogpunt aanvaarbaar is. Hulle besluit word in 'n Omgewingsmagtiging uiteengesit waarin die besluit, die redes daarvoor en enige toepaslike voorwaardes, breedvoerig uiteengesit word. Nadat die DOS die Omgewingsmagtiging uitgereik het, sal die besluit per brief aan alle B&GPe oorgedra word. Hierna begin die appèltydperk waartydens enige party die geleentheid het om in terme van die WNOB en die WNO:AB by die Minister vir Omgewingsake teen die besluit te appelleer.

Kantoor vir Openbare Deelname

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