

Annex A
(informative)

Distribution Environmental Screening Document (DESD)
Reticulation Power lines and Ancillary Services

Ratified and accepted by
Environmental Practitioner
Environmental Specialist
Head of Engineering Survey
(One signature please)

Accepted by Land Owner/s/Users **See attached option list**.....
I have seen the completed document and accept the
Recommendations made

Assessor/s

Form completed by **Mahlatse Moeng (environmental officer)** Signature:
in consultation with: **Clever Leitseiso (Surveyor)** Signature:
CAPACITY (e.g. land owner, specialist): **Surveyor**

Date: March 2021

Instructions

1. Fill the report in as neatly and completely as possible.
2. Where the question / statement is not applicable mark N/A.
3. The form must be completed in consultation with someone who knows the area well and who can also predict if any future development is envisaged (e.g. a land owner, land user, specialist, etc.).
4. Indicate sensitive areas on a map and/or spanning plans.
5. When in doubt, consult the Environmental Practitioner in your region.

The purpose of this *DESD* is to:

1. Determine whether or not the project should be subject to R982, published in terms of the National Environmental Management Act No. 107 of 1998.
2. Identify and mitigate the negative impact of Eskom's activities to a minimum in line with both Legislation and Eskom's Environmental Policies.
3. This report is a guide to Route Selection, Construction and Field Services.

NOTE: Complete the report before the survey!!!

This is not an office exercise.

Extra sheets of paper may be added and referenced if insufficient space has been provided.

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(Informative)

1 Project description

Project name/Survey: [Beatrix DF-SMF 11kV interconnector](#)

Request Area [Theunissen](#)

Project number File number

Rural scheme/
Feeder Voltage: [11kV](#)

Supply from
(Scheme name, pole numbers for tee-off)

2. Properties traversed

Farm name: [Harmonie 579 \(remainder\)](#)

Registration number and Division: [remainder](#) Sub-division:

Compilation number Line length/Site area (m²): [approximately 5km](#)

Farm name

Registration number and Division Sub-division

Compilation number Line length/Site area (m²)

3 Brief description of the surrounding area

The project area is on the SibanyeStillwater mine's property. Majority of the area is largely transformed by mining activity with evaporation ponds, man-made furrows, rock material deposit heaps, a water treatment plant and dirt- tracks evident on the property. The vegetation is mostly grassland and terrain is predominantly flat.



Image 1: Overview of proposed line route in relation to surrounding environment (line route depicted by red line; numbers indicate proposed pole positions)

Could the proposed project have an impact on or be constrained by any of the following environmental aspects?

Encircle the appropriate aspect, giving a description of the present state as well as an indication of the possible negative impact. **Note that mitigating measures for these impacts are to be included in the Environmental Management Programme.**

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4. Physical environment

4.1 Water: streams rivers dams wetlands springs floodplains OTHER man-made furrow

Present condition: The powerline route crosses a man-made furrow that takes treated water from the mine's water treatment plant to a nearby spruit called Theronspruit. The powerline route will also be within 500m of a wetland area that is on the other side of the railway line.

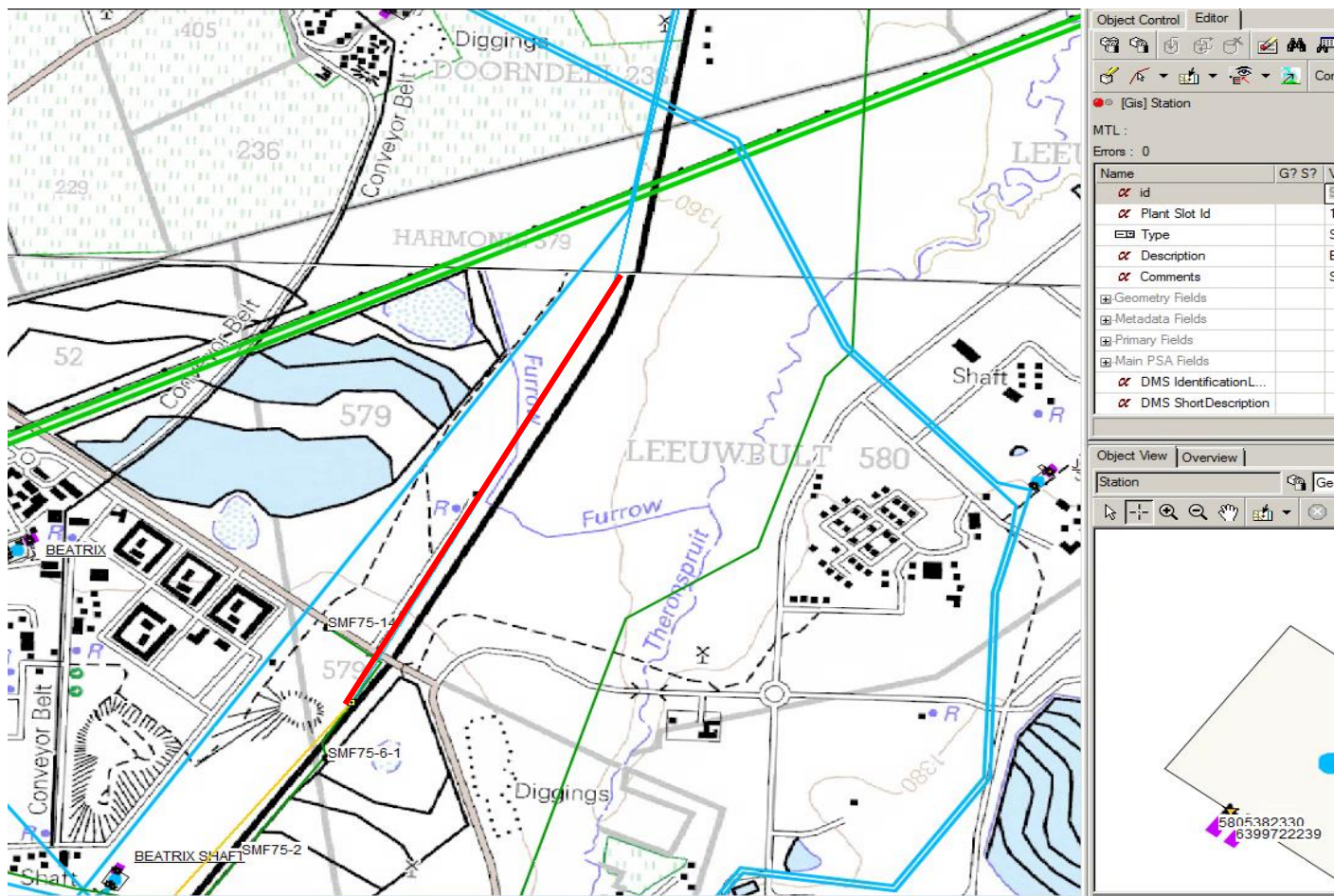


Image 2: Red line depicts powerline orientation as it spans the furrow

Potential impact (e.g. threat of pollution) The powerline routing is envisaged to place a low pollution risk to the watercourses. The powerline will span the furrow but the main pollution risk is related to the construction stage where soil and other loose construction related waste can be pushed into it through vehicular movement in the area and other related activities.

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Legal implications: as there will pylons that will be planted within 500m from the edge of a wetland which is a regulated area according to the National Water Act regulations, a general water use authorization (commonly referred to as a GA) will need to be obtained from the Department of Water and Sanitation.

The environmental officer to undertake the application process towards obtaining this permit

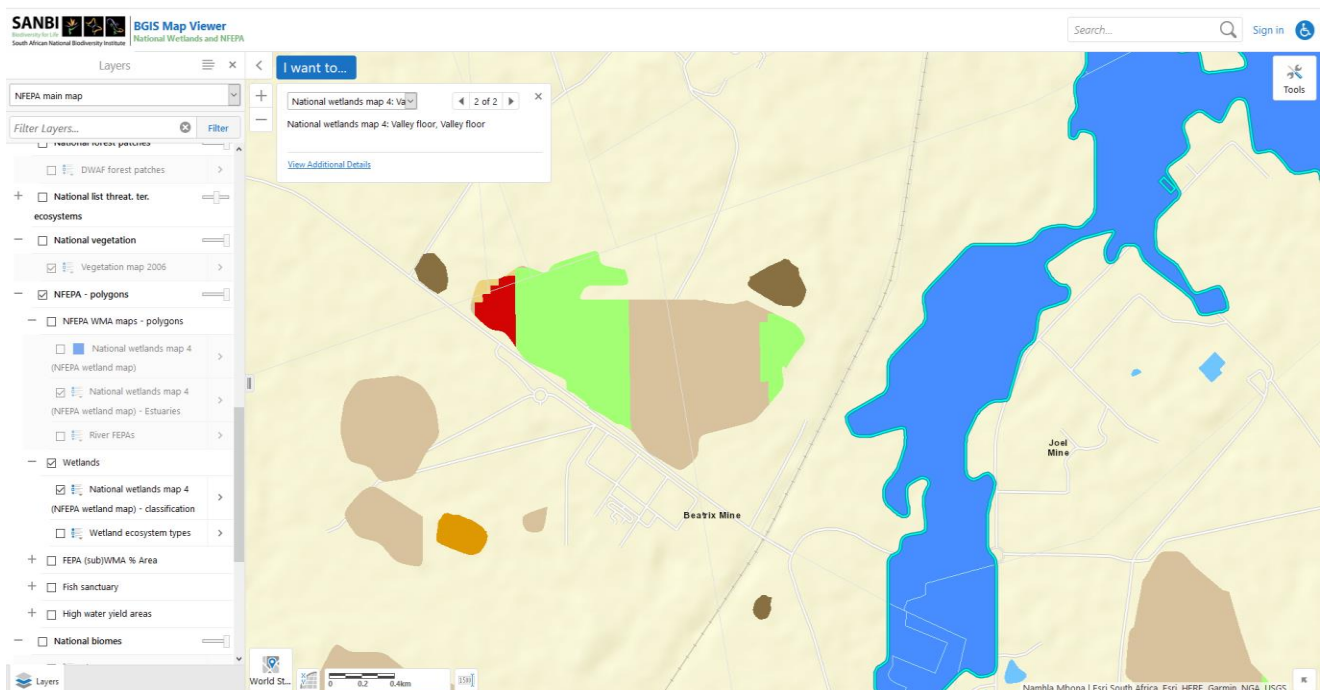


Image 3: Imagery showing wetlands presence in the project area (irregular polygons are mapped wetlands from national wetland map 4)

Comments/mitigating measures: Vehicles to be driven on established tracks/roads and not indiscriminately through watercourse areas. All waste generated should immediately be placed in suitable refuse bags and bins that will be removed from site to a waste disposal site registered to receive the relevant waste.

4.2 Soil: Sandy rocky clayey OTHER
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Present condition:

The soil in the area is generally sandy in nature and mostly stabilized by the vegetation.

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Potential impact (e.g. of erosion): There is a low risk of erosion in the area as the soil is quite well covered by vegetation and the construction of the line will not require any bushclearing that could destabilise the soil.

Comments/mitigating measures: Vegetation should not be disturbed unnecessarily if it does not pose a risk to the line's operations or restricts construction activities to minimize the risk of destabilizing the soil.

4.3 Topography: mountain ridges hills valleys ravines dongas OTHER
s undulating
topography

Present condition: Terrain is generally flat with a few areas with natural gentle slopes. There are however furrows made in the area to channel water from different mine operations.

Potential impact (e.g. of erosion): The topography in the area presents a minimal risk of erosion due to the relatively flat terrain and well stabilized soil.

Comments/mitigating measures: care must be taken to position pylons away from furrow areas to avoid pylon collapse and triggering any erosion of the furrow edges

5 Natural Environments

5.1 Flora: indigenous protected exotic OTHER.....

Brief description and conservation status (e.g. rare, etc., mention trees/bush/grass): The predominant vegetation in the area is grassland with a couple of small trees of the following species :

- a) Tamarisk (Tamarix Ramossima)
- b) Buffalo Thorn (Ziziphus Mucronata)
- c) Sweethorn (Acacia Karoo)
- d) Karee tree
- e) Cluster-Leaf Asparagus (Asparagus laricinus)

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Image 4: Tamarix Ramossima plant on site

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Image 5: Cluster-leaf asparagus with small, round red fruit found along route

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Image 6: Some of the sweet-thorn trees along the route

Potential impact (e.g. permit applications): None of the trees identified above on the line-route are protected under either the National Forests Act or the Free State Nature Conservation ordinance. Therefore, a tree cutting permit won't need to be obtained for the cutting or removal of any of the tree species. It will however not be necessary to completely remove any of the trees as they pose a minimal risk to the operation of the line or restrict access. Thus only trimming may be needed to improve the clearance distances between the conductor and tree branches. Trimming to be done according to Eskom's latest vegetation management procedure

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Comments/mitigating measures: Trees that do not pose a risk to the safe-clearance distance of the line or restrict access for line construction or maintenance should not be trimmed or cut unnecessarily. All trimming of trees should be done according to the latest version of Eskom's Vegetation Management Procedure 32-247.

5.2 Fauna: **mammals** **Birds** OTHER

Brief description and conservation status:
(E.g. rare, protected, etc., mention giraffe, elephants, eagles, vultures, etc., mention migratory paths)

There are ground squirrels in the area and small birds observed on site. At one end of the powerline route there is a farmstead where there are domesticated pets ie dogs present



Image 7: Small bird (in blue circle) observed on site

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Potential impact (e.g. threat of electrocution, collision, etc): **The small birds observed in the area are generally considered at a lower risk of colliding with the line or getting electrocuted .Due to their shorter wingspan, their chances of bridging between 2 phases is small. A bird friendly structure will also be used to further minimize negative bird interactions. In terms of other animals, there were no animals observed on site that are at immediate risk of collision or electrocution from the line. During construction there is a risk of small animals falling into open excavations.**

Comments/mitigating measures:

Bird friendly structures to be utilized. Line inspections to be conducted frequently once line is operational to monitor if there has been any birds that may have collided or been electrocuted by the line. All open excavations during construction to be adequately barricaded or covered to minimize animals from falling inside.

6. Social environment

6.1 Restricted areas:	nature/game reserves	hiking trails	tourism routes	parks	recreational areas
residential-areas	green belts	sacred/holy grounds	OTHER :		

Brief description: **No restricted areas identified along the line route**

Potential impact e.g. threat of encroachment, etc.:**N/A**

Comments/mitigating measures:**N/A**

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6.2 Visual aesthetics: **easily seen** hidden Partially.....

Brief description: The line route is planned along existing gravel tracks and parallel to a railway line for the majority of its length. Given that it will be on the mine's property, the line will be seen mostly by people who visit the mine for various purposes and use those gravel tracks.

Potential impact: The powerline route is surrounded by other existing land-uses such as water treatment works, railways, mining activities, other powerline, substation etc. therefore the visual characteristic of the area has already been altered and the powerline's presence will not have a notable negative effect on the visual landscape.

Comments/mitigating measures:

N/A

6.3 Sensitive areas: historical sites archaeological monuments natural heritage sites
graves landmarks ruins OTHER

Present condition: No sensitive areas identified along the powerline route

Potential impact: N/A

Comments/mitigating measures: N/A

7 Economic environments

7.1 Land use: crops orchards **grazing** crop spraying
game farming forestry areas **mining** OTHER **water**
treatments works

Brief description: The area is used for various mining operations including an on-site water treatment works/plant. There is a portion of the route that runs through a farmstead where the land is used for grazing purposes

Potential impact: There is little negative environmental impact that the presence of the powerline will have on the mining operations and on the water treatment works

Comments/mitigating measures: N/A

7.1.1 Commercial: factories shops OTHER : **mining**

Brief description: The main commercial activity on the site is mining activities

Potential impact: Little impact by the powerline on the mining activity and the mining activity on the powerline construction foreseen

Comments/mitigating measures: N/A

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7.1.2 Infrastructure: roads railways communications power lines air fields
pipelines sewage OTHER Water
treatment
works

Brief description: The proposed route is along an existing gravel road and crosses few other gravel paths. At one point the powerline will cross a tarred road (A169) that's also on Sibanye Stillwater mine property. Secondly there is railway line that is located to the right of the powerline route for the majority of the route-length. The powerline will also connect to an existing powerline on the premises.

Potential impact: In terms of roads, there is a possibility of disturbance to movement of vehicles during construction specifically when stringing over the road crossing.

Comments/mitigating measures: the relevant authorities responsible for the mine to be notified in advance of construction commencement so arrangements can be made for traffic control

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7.1.3 Impact

What impact will this project have on elements 4 to 7?

1. Physical

No impact (0)	Medium impact (2)	High impact (4)
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2. Natural

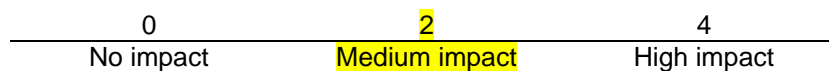
No impact (0)	Medium impact (2)	High impact (4)
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3. Social

No impact (0)	Medium impact (2)	High impact (4)
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Overall impact:

This section addresses the overall environmental impact of the project. The impacts as assessed in the above three spheres (physical, natural and social) need to be considered to determine the overall impact



Alternatives

Have alternative routes been discussed with the relevant land owner/s or users?

Yes

No:

Detailed study

Is an environmental scoping required in terms of regulation R982?

Yes

No:

Should the SAHRA be notified? **Yes; the line is longer than 300m**

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Environmental Management Plan

1 General conditions

- 1.1** The Eskom project manager or co-ordinator shall be responsible for ensuring that the land owners have been informed before any work is carried out on site. Contractors shall find out if the land owners have been informed before moving onto site.
- 1.2** No fences, gates or locks shall be damaged to obtain access onto a line route. Arrangements shall be made in advance to obtain permission for access.
- 1.3** Use of private roads shall be arranged in advance. Any damage to private roads shall be repaired at the contractor's expense and to the satisfaction of the land owner. This shall be the responsibility of the project manager or coordinator.
- 1.4** Gates shall be left as they are found, i.e. closed gates shall be kept closed and open gates shall be left open. Gates to adjacent properties or onto public roads shall be closed at all times. Any Eskom gates installed on the line route shall be kept closed and locked except while stringing is taking place.
- 1.5** Permission shall be obtained from land owners before any water is used.
- 1.6** No fires shall be lit on private property. If fires are lit on Eskom's property or in the construction camp, provision shall be made that no accidental fires are started. No fire wood shall be collected in the veldt.
- 1.7** If activities that can cause a fire are carried out, fire extinguishers shall be available on site and in the construction camp.
- 1.8** No property may be accessed after normal working hours except with the permission of the land owner. Privacy shall be respected at all times.
- 1.9** Eskom, Eskom's contractors and their employees shall at all times be courteous towards land owners, tenants and the local community.

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- 1.10** Eskom, Eskom's contractors and their employees shall not cause damage to property, crops or animals. Activities that may cause conflict with land owners, the local work force or the local community should be avoided. Should conflict arise it shall be immediately reported to the Eskom project manager or coordinator.
- 1.11** Vehicles shall be driven at a moderate speed (at least 40km/hour) on private roads and stay within the statutory speed limit on public roads.
- 1.12** All movement of vehicles shall take place on the established Eskom servitude road or on private roads as agreed in advance. Keep to existing tracks. No movement shall take place through the veldt. Special care shall be taken to prevent excess damage during wet weather.
- 1.13** If any vehicle should get stuck, the damage shall be repaired immediately so that no deep ruts remain.
- 1.14** Any damage to private property shall immediately be reported to Eskom and the owner. The damage shall be rectified immediately if possible and/or appropriate compensation shall be paid to the owner at the discretion of the project manager/co-ordinator in consultation with the property owner. A record of damages and rectifying action shall be kept. The land owner's satisfaction with the outcome of rectifying action shall be obtained in writing.
- 1.15** A proper system of waste management shall be instituted in the construction camp if necessary. This entails that sufficient waste bins are available on site and in the construction camp. The waste shall be dumped at an approved waste disposal site. No containers, scrap metal, conductor etc. shall be left on site.
- All scrap shall be removed and taken to an appropriate disposal site. No oil, diesel or other chemicals shall be spilled or discarded anywhere. If an accidental spill occurs, it shall be reported immediately and cleaned to the satisfaction of Eskom and the land owner. No waste shall be left in the veldt or on the line route.
- 1.16** Washing and toilet facilities shall be provided on site and in the construction camp. The facilities shall comply with Eskom standards and shall have the approval of the land owner.

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- 1.17** No human excrement shall be left in the veldt. If no toilet facilities are available such waste shall be buried immediately.
- 1.18** Herbicides shall only be applied with Eskom's permission and in accordance with relevant Eskom policies and procedures.
- 1.19** Camp and office sites shall be dismantled and removed after completion of the construction phase of the project. The site shall be rehabilitated to as close as possible to its original condition to the satisfaction of the land owner. Landowner approval of rehabilitation shall be in writing.
- 1.20** All excavations shall be enclosed to prevent animals or people from accidentally falling into excavations.
- 1.21** No trees shall be cut or removed without prior permission from the landowner. Permits shall be obtained for the cutting and removal protected trees (protected trees shall be dealt with in 2, **Special conditions**).

2 Special conditions

(Specific issues identified during the scoping as needing attention i.e. erosion berms, bird flappers, protected trees. etc.).

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TYPICAL MITIGATION MEASURES

ENVIRONMENTAL CONCERNS	MITIGATION MEASURES
AGRICULTURE	
Loss of standing crop due to access road and tower work site.	<ul style="list-style-type: none"> - Limit width of access and size of tower site. - Avoidance of crop areas. - Monetary compensation for crop loss. - Time construction to avoid growing season.
Soil Compaction	<ul style="list-style-type: none"> - Scheduling activities to times of the year when soils are least susceptible to compaction. - Stop activities when ground conditions are poor. - Use of equipment with low bearing capacity. - Chisel ploughing.
Construction of new lines	<ul style="list-style-type: none"> - locate access roads along Existing traffic routs.
Topsoil – subsoil mixing/soil rutting	<ul style="list-style-type: none"> - Scheduling activities. - Stop activity when ground conditions are poor. - Use of equipment with low bearing capacity. - Use of gravel roads. - Addition of manures to offset fertility loss. - Compensation for reduced soil productivity. - Removal of spoil and/or bentonite from foundation operations. - Segregation of topsoil and subsoil.
Disturbance to farm operations	<ul style="list-style-type: none"> - maintain contact with landowner/tenant regarding Preferences.
Loss of livestock	<ul style="list-style-type: none"> - Employ noise control measures near sensitive livestock. - Construction of farm gates. - Securing farm gates. - Clean-up construction materials which could be ingested. - Compensation for lost, injured livestock.
SOCIAL IMPACTS	
Noise and Vibration	<ul style="list-style-type: none"> - Limit this type of work to daylight hours. - Observe protocol or applicable municipal by-laws. - Use of appropriate methods where available.
Mud and Dust	<ul style="list-style-type: none"> - Wetting down dry soils. - Chemical control of dust.

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	<ul style="list-style-type: none"> - Cleaning roads to remove mud. - Temporary planting of grasses.
Aesthetics	<ul style="list-style-type: none"> - Screen with natural or planted vegetation restoration. - Avoid linear access down the right-of-way. - Addition of topsoil to gravel access roads. - Hoarding construction sites. - Installation of landscaping in advance of site completion.
Inconvenience	<ul style="list-style-type: none"> - Select route and method of installation to suit landowners' conditions. - select timing of activity.
Heritage resources	<ul style="list-style-type: none"> - Avoidance/isolation. - Design measures to make facility less obtrusive. - Screening. - Alternate methods of equipment. - Protection by use of enclosures, barrier fencing, covering. - Salvage in conjunction with SAHRA. - Relocation in conjunction with SAHRA.
Tourism and recreation resources	<ul style="list-style-type: none"> - Design measures to make facility less obtrusive or disruptive. - Screening and restoration. - Minimize noise and dust. - Safety precautions to protect the public. - Scheduling to avoid peak use periods.
WATER QUALITY	
Sedimentation of streams due to erosion from the right-of way.	<ul style="list-style-type: none"> - Minimize use of slopes adjacent to streams during soils testing, construction and maintenance. - Maintain a cover crop. - Retain buffers.
Stream bank erosion.	<ul style="list-style-type: none"> - Mechanical erosion control. - Retain shrubby stream bank vegetation and selectively cut or prune trees during line clearing/maintenance. - Selective spraying of herbicides. - Mechanical erosion control.
Impedance of natural flow streams/others surface waters.	<ul style="list-style-type: none"> - Use and maintenance of appropriate stream crossing device.
Ponding or channelization of surface waters due to rutting.	<ul style="list-style-type: none"> - Timing activities to stable ground conditions. - Use of gravel roads.
Contamination of surface or ground waters through spills or leaks of toxic substances.	<ul style="list-style-type: none"> - Spill control material and procedures readily available. - Site selection where possible.
Soil compaction/topsoil-subsoil mixing.	<ul style="list-style-type: none"> - Avoidance of rutting by vehicles where possible. - Construction timing. - Use of gravel roads. - Use of vehicles with low bearing pressures. - Stop activities when ground conditions are poor.

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Wind/water erosion.	<ul style="list-style-type: none">- Avoidance of areas with high erosion potential.- Timing activities to the most stable ground conditions.- Slope stabilisation.- Mechanical erosion control.- Vegetation erosion control.- Reoccupation of trenches.- Avoid trenching parallel to the fall of a slope.
Contamination by petrochemicals.	<ul style="list-style-type: none">- Spill control material and procedures made readily available.- restoration methods investigated.