

Figure 1: Large Scale Locality Map, showing the town of Klaarstrooms and surrounding towns



Figure 2: Locality Map indicating locality of the existing Klaarstroom WWTW

Appendix A\_ Locality Map & Layout Plans



Figure 3: Locality Map indicating locality of the existing Klarstroom WWTW

Appendix A\_ Locality Map & Layout Plans



Figure 4: Proposed WWTP Upgrade

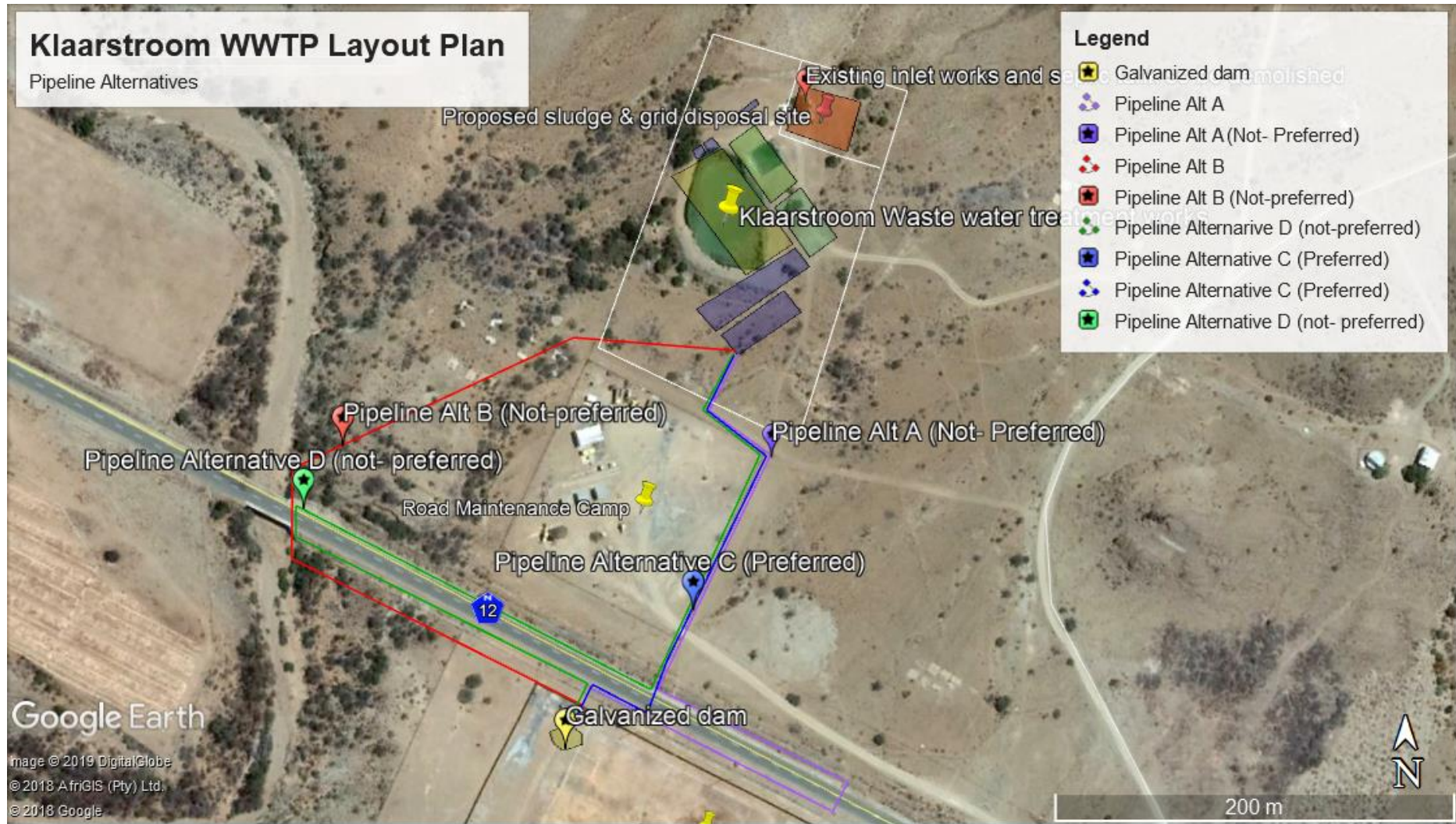


Figure 5: Proposed layout plan for the Klaarstroom WWTP focusing on proposed pipeline routes investigated.

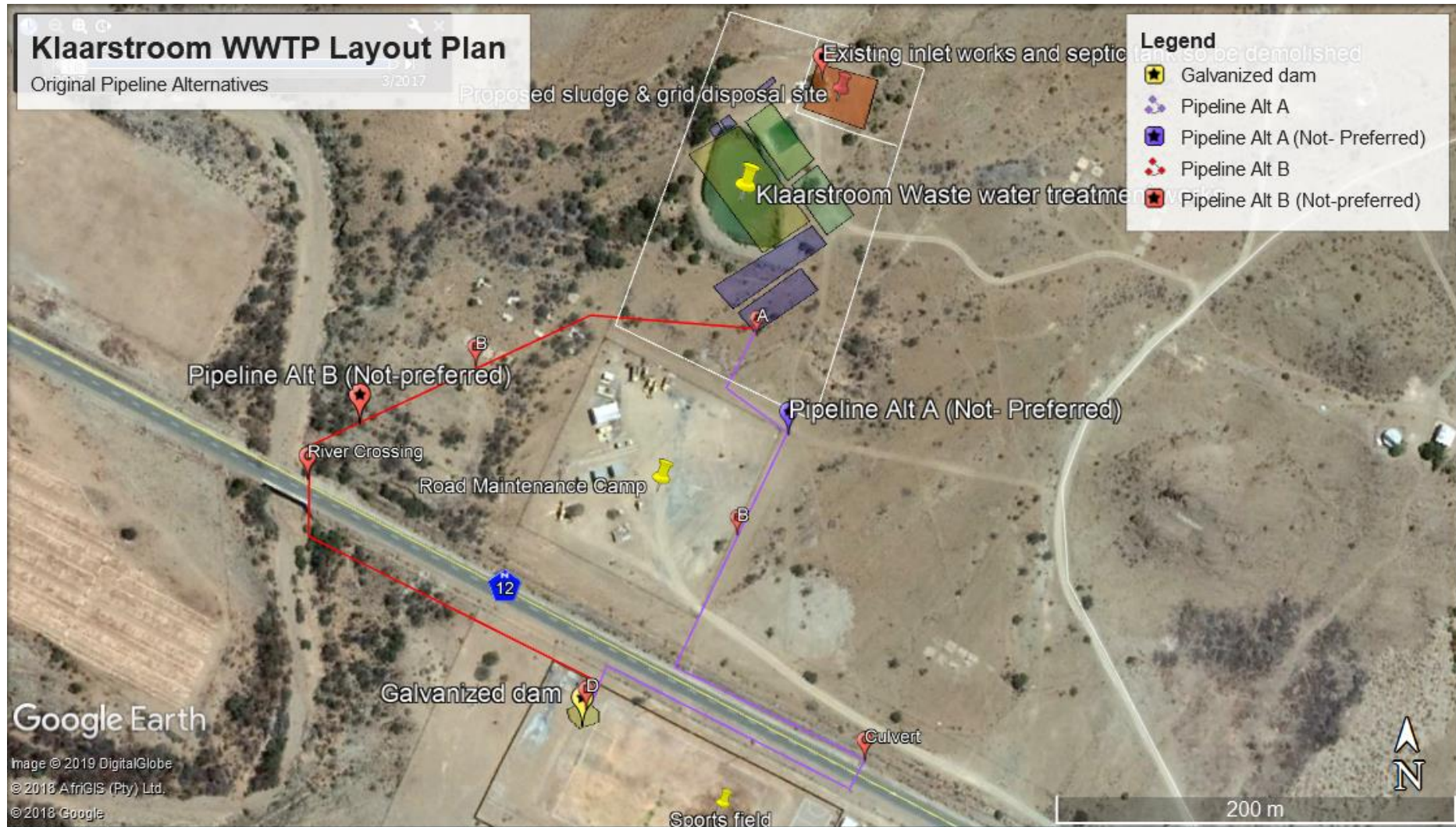


Figure 6: Proposed pipeline alternatives investigated. Originally, Alternative A was considered the preferred alternative, it was proposed that the pipeline will cross the N12 via an existing culvert. PGWC confirmed that this will not be a viable option as culverts may not be obstructed. Pipeline Alternative B, was investigated. This pipeline route will cross the N12 via an existing bridge on private land.



Figure 7: New proposed pipeline alternatives. Alternative C is considered the preferred alternative. It is proposed the pipeline cross the N12 by means of horizontal directional drilling. Alternative D was also considered, the proposed pipeline to follow the route of Alternative A and C up until point C to the north of the N12, from here it is proposed the pipeline follow the N12 road reserve to the existing bridge to the west. The pipeline to cross the N12 over the bridge. Pipeline to follow the road reserve to the south of the N12 where it will terminate in the proposed dam on the sports field.

Appendix A\_ Locality Map & Layout Plans



Figure 8: Locality map indicating the proposed sludge and grid disposal site which is to be fenced off.



Appendix A\_ Locality Map & Layout Plans

Coordinates:

<b>Waste Water Treatment Plant Centre Point (RE32 of Farm Klaarstroom 178, Prince Albert)</b>	
Latitude (S)	33°19'20.09"S
Longitude (E)	22°31'43.44"E
<b>Pipeline Start Point A</b>	
Latitude (S)	33°19'25.33"S
Longitude (E)	22°31'43.55"E
<b>Pipeline Route Alternative A – Not Viable Point B</b>	
Latitude (S)	33°19'25.98"S
Longitude (E)	22°31'43.17"E
<b>Pipeline Route Alternative A – Not Viable Point C - Crossing the N12 through an existing culvert,</b>	
Latitude (S)	33°19'28.76"S
Longitude (E)	22°31'46.02"E
<b>Pipeline Route Alternative B – Not preferred Point B</b>	
Latitude (S)	33°19'22.99"S
Longitude (E)	22°31'37.86"E
<b>Pipeline Route Alternative B – Not Preferred Point C (Crossing of Groot Rivier over an existing bridge on private land)</b>	
Latitude (S)	33°19'24.38"S
Longitude (E)	22°31'35.11"E
<b>Pipeline Route Alternative C – Preferred Alternative Point B</b>	
Latitude (S)	33°19'25.98"S
Longitude (E)	22°31'43.17"E
<b>Pipeline Route Alternative C – Preferred Alternative Point C (Pipeline to cross N12 by means of Horizontal Directional Drilling)</b>	
Latitude (S)	33°19'27.67"S
Longitude (E)	22°31'42.09"E
<b>Pipeline Route Alternative D – Not preferred Point B</b>	
Latitude (S)	33°19'25.98"S
Longitude (E)	22°31'43.17"E

Appendix A\_ Locality Map & Layout Plans

Pipeline Route Alternative D – Not preferred	
Point C – pipeline to remain to the North of the N12 within the road reserve towards the bridge to the West. Pipeline to be attached to the bridge to cross the river. Pipeline to remain within the road reserve to the South of the N12 towards the proposed galvanized dam.	
Latitude (S)	33°19'25.23"S
Longitude (E)	22°31'35.22"E
<b>Pipeline End Point D and location of Galvanised dam on sports field RE 34 of Farm Klaarstroom 178, Prince Albert</b>	
Latitude (S)	33°19'28.40"S
Longitude (E)	22°31'40.64"E
Area proposed for disposal of existing sludge from decommissioning of existing pond & daily disposal of non-biodegradable solids (grid & screening) from inlet works	
Latitude (S)	33°19'18.38"S
Longitude (E)	22°31'44.94"E

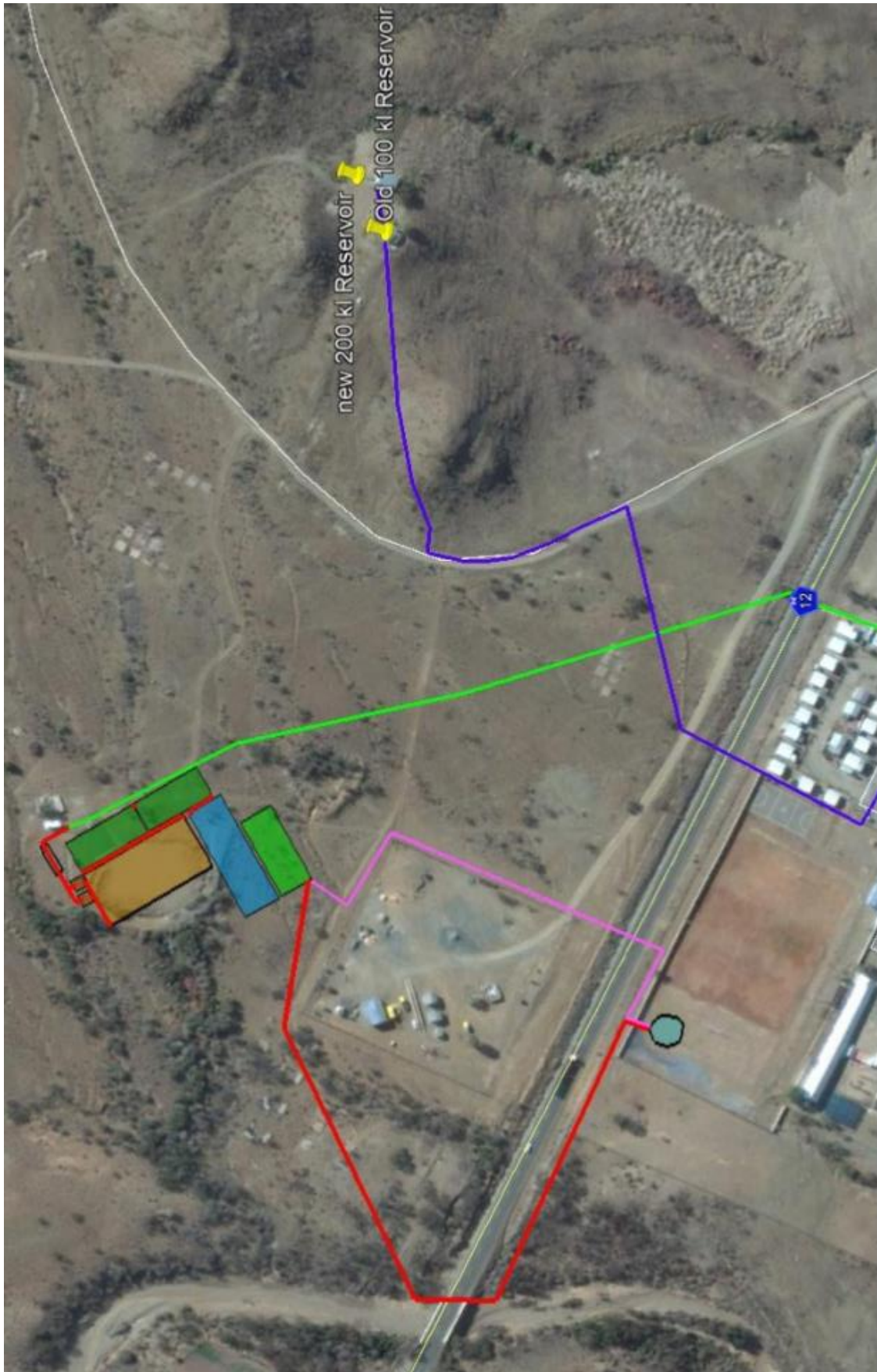


Figure 9: Existing pipelines represented in green and blue

## Appendix A\_ Locality Map & Layout Plans

Stormwater management