ARCADIS

SEWER NETWORK CAPACITY ASSESSMENT

54 GEORGE ALEXANDER WAY, COOMERA

COOMERA GA PTY LTD ATF THE COOMERA GA UNIT TRUST

IMPROVING QUALITY OF **LIFE**

54 GEORGE ALEXANDER WAY - WEST

SEWER NETWORK CAPACITY ASSESSMENT

Author	Mike Cazeres
Checker	Ashley Shepherd
Approver	Richard Mulligan RPEQ7850

Project No	30157884
Report No	GA0005
Revision	01
Date	16/05/2025

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Revision	Date	Description
01	16/05/2025	Issue for Approval

Should you require any further information, please contact our Gold Coast office and ask to speak to the report author denoted above.

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CONTENTS

APPENDICES

1 EXECUTIVE SUMMARY

Coomera GA Pty Ltd ATF The Coomera GA Unit Trust has commissioned Arcadis to undertake a Sewer Network Capacity Assessment (SNCA) for a residential development application for the site located over the following allotment located on George Alexander Way, Coomera:

- Lot 96 on RP187418 (54 George Alexander Way, Coomera, 4209).

The proposed development intended for the site is for the creation of 3 residential apartment buildings and 10 townhouses.

With the use of the software InfoSWMM, a hydraulic assessment of the proposed development's impact on the surrounding wastewater network has been undertaken. One connection is proposed to Gold Coast Water and Waste (GCWW) wastewater network, being the existing DN150 gravity sewer network located at the north-eastern site boundary.

The following SNCA compares the existing local sewer network performance under the 'existing' and 'developed' network demand for the relevant planning horizons against GCWW's Desired Standard of Service (DSS) as specified by the South-East Queensland Design and Construction Code for Water Supply and Sewerage (SEQ WS&S D&C Code). Under both scenarios, various other planned/approved but generally not built development is included in the model. The purpose of this assessment is to determine whether there is sufficient capacity in the local network to service the proposed development or whether the proposed development triggers the requirement for a wastewater infrastructure upgrade within the Sewer Pump Station (SPS) PA10 sub-catchment.

Gravity Network

- Minimum freeboard non-compliances are observed across both the existing and developed scenarios in all scenarios. Three recurring non-compliances are observed to occur due to shallow existing manhole depths (<1.2m depth), with flow being contained within the downstream gravity mains and no accumulation occurring within the manholes above the obverts of the downstream sewer mains.
- It was identified that a portion of the LGIP upgrade GPI23 was required to be brought forward in both the existing and the developed outcomes, comprising ≈2/3rds of the total GPI23 alignment. The existing case required the upgrade to be brought forward from the 2036 horizon to the 2031 horizon, whereas the developed scenario required it to be brought forward from the 2036 to the 2026 horizon.

An assessment of SPS PA10 was undertaken, with the following conclusions:

Pump Capacity

- There is inadequate pump capacity across all assessed planning horizons for both scenarios. It is recommended CoGC tailor augmentations to pump capacity to suit the ultimate PWWF requirements of the SPS PA10 catchment.

Operational Storage

- There is inadequate operational storage across all assessed planning horizon for both scenarios. It is suggested that Council investigate an upgrade for the operational storage volume to occur in the 2021 planning horizons to meet the required ultimate requirement of the conservative existing 2066 planning horizon.

Emergency Storage

- There is adequate emergency storage volume across all assessed planning horizons for both scenarios.

Rising Main Velocity Assessment

- No assessment was undertaken as the proposed development in isolation does not trigger an upgrade from the more conservative existing 2066 scenario.

Based on the results from this report, no network upgrades are proposed as a result of this proposed development.

2 SITE CHARACTERISTICS

2.1 Location Details

The subject site is located within George Alexander Way, Coomera, Australia over the following allotment:

- Lot 96 on RP 187418 (54 George Alexander Way, Coomera, QLD, 4209)

The site is bounded by George Alexander Way to the west, a rural residential allotment to the south and residential dwellings to the north and east.

The Gold Coast City Council is the local government authority.

The total area of the site is approximately 30,100m².

An existing approval (OPW/2023/1508) bounds the eastern portion of the site. This approval is for 22 residential lots and supporting infrastructure. This report seeks to support a development application for the balance of the land.

2.2 Land Usage

In its current state, the project site consists of a residential dwelling and its associated driveway. Figure 2-1 below provides a current locality plan of the site.

Figure 2-1 Site Locality Plan (Aerial Imagery Courtesy of NearMap)

3 PROPOSED DEVELOPMENT

The proposed development involves the construction of residential units, including:

- 3 x medium-rise residential buildings.
- 10 x townhouses.
- Municipal and private road network.
- Basement parking.
- Open communal space.
- Stormwater management area

A rendered plan extract of the proposed development has been provided in Figure 3-1.

A full set of development proposal plans are provided within the development application package and should be referred to for further information.

Figure 3-1 Proposed Development Render (Courtesy of Archipelago)

3.1 Proposed Development Loading

For the purposes of this report, the development has been assessed under two loading cases to better determine the anticipated impact to be had on the surrounding network. These cases are as follows:

- **Existing Case with other Over-Planning-Scheme Density Sites** – A demand assigned to the site via the infrastructure Demand Model (IDM) 2018 provided by GCWW with additional loads included of other proposed developments (refer to section 4 & 5 for further details) as instructed by GCWW. All planning horizons were assessed; and
- **Developed Case with other Over-Planning-Scheme Density Sites** – The calculated demand for the property based on proposed architect plans and conversion rates from the Water Supply & Sewerage Infrastructure Plan Demand Table. Additional loads included of other proposed development's (refer to section 4 for further details) as instructed by GCWW.

Where applicable, the proposed development may be assessed against the existing network, in isolation of any other planned sites to better ascertain responsibility and network augmentations.

Table 3-1 shows the Equivalent Persons (EP) for the existing site based specified for removal for this modelling exercise comprising the demand assigned to the proposed development site. Table 3-2 shows the calculated EP for the proposed development as per CoGC's 'Water and sewage demand table'.

Table 3-1 Existing Modelled Demand

Planning Horizon	Modelled Existing Demand (EP)
2021	0
2026	0
2031	0
2036	959.4
2041	970.3
2066	970.3

Table 3-2 Development Loading – Site Area

Category	Quantity	Conversion Rate	Proposed Demand (EP)
Multi-Unit Dwelling 1 bedroom	35	1.31	45.9
Multi-Unit Dwelling 2 bedroom	129	1.76	227.0
Multi-Unit Dwelling 3 bedroom	19	2.51	47.7
Attached Dwelling	10	2.51	25.1
		Total	345.7

As per Figure 3-1 the site area does not encompass the entire 54 George Alexander Way lot area and corresponding existing modelled demand. As such, the demand for the adjacent area OPW/2023/1508 area has been determined in Table 3-3 below and included in this modelling exercise, applied at their corresponding new junctions in Talpa Street adjacent to the site boundary.

Table 3-4 below compares the total proposed development demand for the 54 George Alexander Way lot to the demand assigned to the lot by CoGC and the base sewer network model.

Table 3-3 Approved Development Loading – OPW/2023/1508 Area

Category	Quantity	Conversion Rate	Proposed Demand (EP)
Detached Dwelling	22	2.79	61.4

Table 3-4 Proposed Demand Vs Existing Assigned Demand Comparison

Planning Horizon	Modelled Existing Demand (EP)	Proposed Development Demand (EP)	Total Additional EPs Applied to Lot Area
2021	0	407.1	407.1
2026	0	407.1	407.1
2031	0	407.1	407.1
2036	959.4	407.1	-552.26
2041	970.3	407.1	-563.16
2066	970.3	407.1	-563.16

The proposed demand presents an increase in EPs between the 2021 to 2031 planning horizons compared to existing modelled demand assigned to the development site. The proposed demand presents a significant decrease in EPs between the 2036 to 2066 planning horizons compared to existing modelled demand assigned to the development site of -552/-563 EPs.

4 RECENT NETWORK ADDITION

An additional portion of the existing recently constructed sewer network not included in the issued 2019 CoGC network model was identified, which consists of the proposed connection points in Talpa St for the proposed development site and the adjacent approved OPW site.

For the purposes of this assessment, this recently constructed network within Talpa St adjacent to the development site and adjacent approved OPW site has been included into the CoGC sewer network model as per Figure 4-1 below. Invert levels for the model elements were sourced from the CoGC online GIS database which specifies pipe material and pipe/manhole diameters and invert/surface levels.

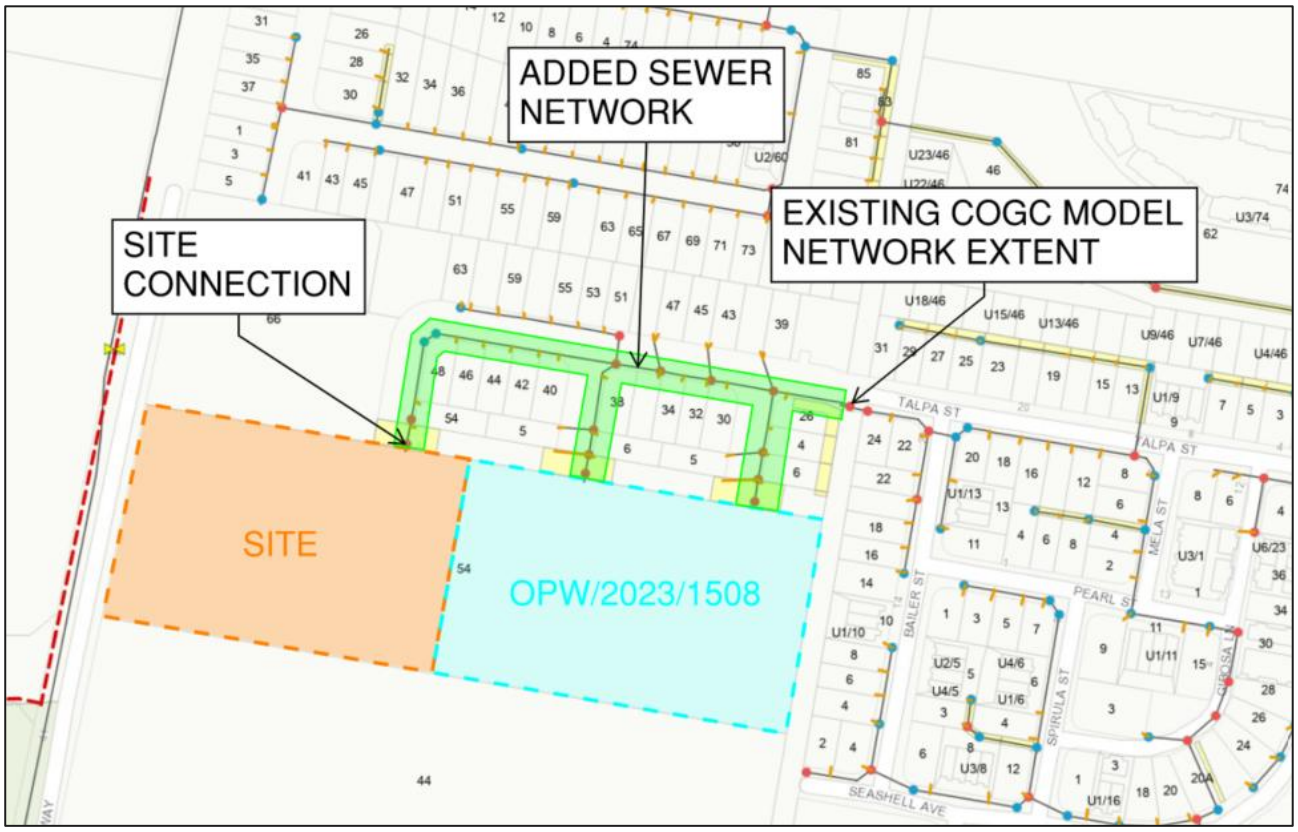


Figure 4-1 Recent Sewer Network Addition Layout Plan

5 MODELLING ASSUMPTIONS

The sewer network surrounding the proposed development site was modelled using the wastewater model 'MW_20190613' for the Merrimac West catchment using the software "InfoSWMM". The modelling files were supplied by CoGC in January 2025. The demand due to the proposed development has been applied in the developed scenario planning horizons.

The proposed development demand sees a reduction in EPs in the 2036, 2041 and 2066 planning horizons compared to the demand assigned to the site by CoGC and reflected in the sewer network model. As such, this assessment has been undertaken modelling assessment for the 2021, 2026 and 2031 horizons only as the development proposes to significantly reduce the assigned site demand in the later horizons and CoGC's existing modelling conclusions will remain applicable and sufficient. All horizons were assessed for the pump station assessment.

This analysis was undertaken adopting the following assumptions and design criteria (Note: All design criteria are in accordance with Table 10 – Sewerage Network Design Criteria (Gold Coast) of the SEQ D & C Code and GCWW DSS) and advice by CoGC W&W:

- The extent of the network studied is to the downstream pump station SPS PA10.
- Average Dry Weather Flow (ADWF) = 200 L/EP/d
- Average Dry Weather Flow for 2066 Horizon (ADWF) = 180 L/EP/d
- Peak Dry Weather Flow (PDWF) = C2 x ADWF.
- C2 = 4.7 x EP-0.105.
- Peak Wet Weather Flow (PWWF) = 5 × ADWF.
- EP/ET Conversion = 2.79.
- Manning's flow equation is used to calculate flows.
- Manning's roughness coefficient is taken as 0.013.
- Depth of flow @ PWWF – Existing system = Up to 1.0m below MH cover level and no spillage through overflow structures (as confirmed by Council Officers).
- Depth of flow @ PWWF – Proposed new sewers = Max flow depth shall not exceed ¾ pipe internal diameter.
- Pump Station Parameters.
- Emergency Storage: 4 Hours @ ADWF.
- GCWW advised that there was one other above planning-scheme-density site to be included as part of the assessment for both the existing and developed scenarios. Refer Appendix A.
- GCWW advised that there are two nodes assumed to receive loading for the site area. Refer Appendix A.
- GCWW advised via email correspondence the existing pump capacity, emergency storage values and operating storage volume for SPS PA10. Refer Appendix A.

6 MODELLING METHODOLOGY

The InfoSWMM model 'MW_20190613' provided by CoGC on January 2025 was first run by applying the existing loads of the CoGC Infrastructure Demand Model (IDM) at the specified junction points to provide a baseline to compare the impacts of the proposed development. The impact on the existing network was assessed by verifying and comparing the flow velocities and depth of flow of the developed network against the existing network. One reach of pipe was assessed, from the proposed connection point to the respective downstream pump station. The reach of pipe assessed is shown in Figure 6-1.

6.1 Depth of Flow

The depth of flow was assessed for all manholes included in the assessment for the 2021, 2026 and 2031 horizons in the existing and developed scenarios. In the developed scenario, the additional loads were applied to the specified connection point and the models were then compared to the results obtained in the existing scenario and GCWW DSS. The maximum depth of flow was assessed over a 24-hour period against the maximum depths for pipes in the existing and developed scenarios.

6.2 Pump Capacity

The pump capacity was assessed for all assessed planning horizons in the existing and developed scenarios. The pump capacity is obtained from the relevant LGIP catchment report. The pump capacity is then assessed against the PWWF generated by the assessed pump station's local catchment (Local EP) and all upstream catchments (Cumulative EP) feeding into the assessed local catchment.

6.3 Operational Wet Well Volume

The operational wet well volume was assessed for all relevant planning horizons in the existing and developed scenarios. Existing operational wet well volume is determined through the relevant LGIP catchment report. The required operational well volume is calculated by obtaining the ADWF (L/s) and multiplying it by Variable C1 then dividing it by average pump starts per hours (N = 5 has been adopted for this assessment given motors >200kW) and multiplying it by 0.9. This is then compared to the calculated existing operational wet well volume.

6.4 Emergency Storage

The emergency storage was assessed for all planning horizons in the existing and developed scenarios. Emergency storage is calculated by assessing the volume of wastewater generated over four hours at ADWF. This volume is calculated from local catchment EP load for both existing and developed scenarios.

6.5 Rising Main Assessment

A rising main assessment is to be undertaken from the pump station to the next gravity outlet should the proposed development in isolation necessitate an upgrade to the pump capacity. However, in this instance, the proposed development in isolation does not necessitate an upgrade to the pump capacity, therefore a rising main assessment has not been undertaken.

7 RESULTS AND DISCUSSION

7.1 Gravity Line Assessment

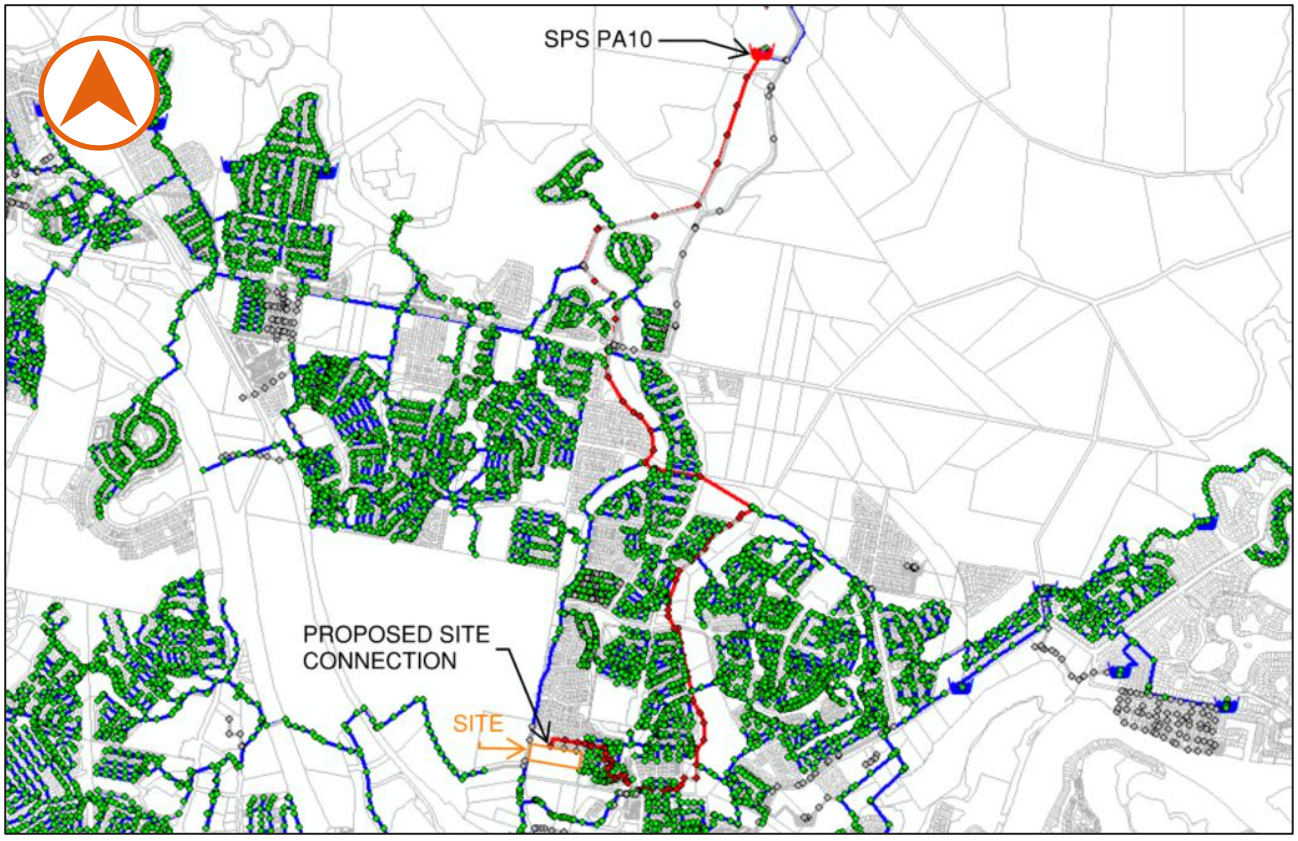


Figure 7-1 Assessed Gravity Line

7.1.1 Existing System Performance

One reach of pipe has been assessed, being the existing sewer line from new added manhole 'JCT-11215' located at the end of Talpa St at the boundary of the project site described in Section 4. This line terminates at SPS PA10 along a 7km sewer main alignment as illustrated in red in Figure 7-1. The demands have been assigned as per IDM 2018.

The results attached in Appendix B show the detailed outputs of each manhole assessed, including longitudinal sections showing the depth of flow and hydraulic grade line.

The existing planning horizon results show that minimum freeboard non-compliances are present within the existing sewer network.

Three minimum freeboard non-compliances are observed in the 2021, 2026 and 2031 planning horizons, with these non-compliances being identified within shallow manholes at 1.2m full depth. These three manholes are located downstream of the assessed line 4.7km along the assessed gravity line with downstream gravity main sizing of DN1200 sewer mains. Flow at these junctions is fully contained within the downstream sewer mains with no accumulation observed within the manhole with insufficient freeboard flagged due to the manhole depth at these junctions matching the downstream gravity main sizing.

An additional three minimum freeboard non-compliances are observed in the 2031 horizon, occurring at junctions SEMH_PA10_9000101205, SEMH_PA10_9000312526 and SEMH_PA10_9000218141 illustrated in Figure 7-2 below located 800m downstream along the assessed gravity line. The existing results are noted as a baseline reference for comparison once the developed loadings are applied to the network.

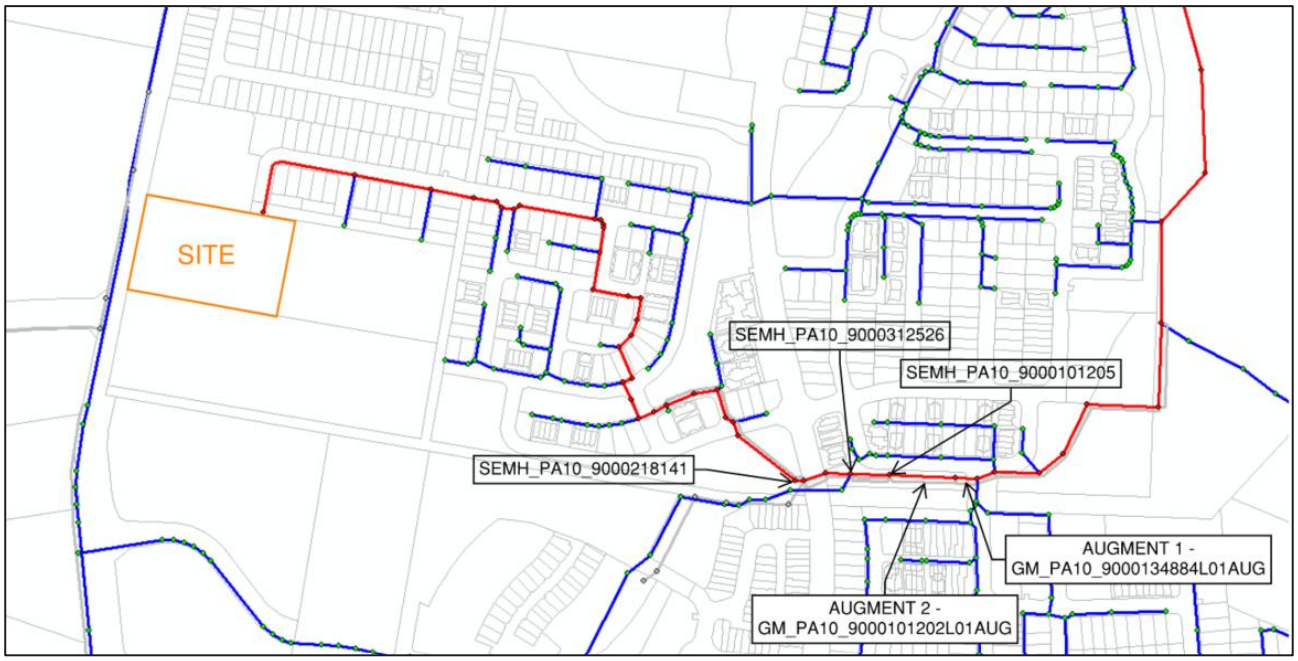


Figure 7-2 Model Element & Augmentation Mapping

7.1.2 Existing Augmented System Performance

To mitigate the additional three minimum freeboard non-compliances observed in the existing 2031 horizon, base CoGC augmentations noted below and illustrated in Figure 7-2 are required to be brought forward from their planned implementation year in 2036 and consist of additional DN450 sewer mains.

- Augment 1 – 2036 to 2031
- Augment 2 – 2036 to 2031

These LGIP augmentations are noted as GPI23 in CoGC's City plan, with the length in question comprising ≈2/3rds of the total GPI23 alignment.

The tabulated results attached in Appendix C show the detailed outputs of each pipe and manhole assessed, including longitudinal sections showing the depth of flow and hydraulic grade line following implementation of these two augmentations.

7.1.3 Developed System Performance

For the developed scenario, the same existing reach of pipe has been assessed for the 2021, 2026 and 2031 planning horizons. Loads have been assigned as per the proposed loads of the development.

The developed planning horizons are non-compliant in minimum freeboard within the same three shallow manholes identified in the existing scenarios of the assessed reach with flow being contained within the downstream gravity mains and no accumulation occurring within the manholes above the obverts of the downstream sewer mains.

An additional three minimum freeboard non-compliances are observed in the 2021, 2026 and 2031 horizon occurring at junctions SEMH_PA10_9000101205, SEMH_PA10_9000312526 and SEMH_PA10_9000218141 illustrated in Figure 7-2. Augmentation requirements to mitigate these observed non-compliances in the developed scenario are detailed in Section 7.1.4 below.

The tabulated results attached in Appendix D show the detailed outputs of each pipe and manhole assessed, including longitudinal sections showing the depth of flow and hydraulic grade line.

7.1.4 Developed Augmented System Performance

To mitigate the additional three minimum freeboard non-compliances observed in the developed 2021, 2026 and 2031 horizon, base CoGC augmentations noted below and illustrated in Figure 7-2 are required to be

brought forward from their planned implementation year in 2036 to the horizons specified below and consist of additional DN450 sewer mains:

- Augment 1 – 2036 to 2026 horizon
- Augment 2 – 2036 to 2031 horizon

These LGIP augmentations are noted as GPI23 in CoGC's City plan, with the length in question comprising ≈2/3rds of the total GPI23 alignment.

The tabulated results attached in Appendix E show the detailed outputs of each pipe and manhole assessed, including longitudinal sections showing the depth of flow and hydraulic grade line following implementation of these two augmentations.

7.2 Pump Station Assessment

7.2.1 Pump Station PA10

In addition to assessing the adequacy of downstream pipe infrastructure, the required operating wet well volume, pump capacity, rising main and emergency storage volume of SPS PA10 has also been assessed. The local EPs have been determined from the sewerage catchment which is serviced by the pump station. These loads have been determined from the IDM 2018 and surrounding approved developments supplied. The ultimate proposed development demand has been adopted for this assessment.

7.2.1.1 Pump Capacity Assessment

Table 7-1 below encompasses all the information relevant to the pump capacity of SPS PA10. Council advised that there are no proposed upgrades for the pump capacity.

Table 7-1 Pump Capacity Assessment

SPS PA10	Cumulative EP	PWWF (L/s)	Pump Capacity (L/s)
2066 Existing	217033.1	2260.76	1370.6
2066 Developed	216496.6	2255.17	
2041 Existing	175289.2	2028.81	
2041 Developed	174752.7	2022.60	
2036 Existing	151980.9	1759.04	
2036 Developed	151455.4	1752.96	
2031 Existing	123606.4	1430.63	
2031 Developed	124040.4	1435.65	
2026 Existing	98841.8	1144.00	
2026 Developed	99275.7	1149.02	
2021 Existing	77066.7	891.98	
2021 Developed	77500.6	897.00	

As shown above in Table 7-1, there is adequate pump capacity in both the existing and developed scenarios in the 2021 and 2026 planning horizons. From the 2031 horizon onward, there is inadequate existing pump capacity to meet the required PWWF of the SPS PA10 catchment in both the existing and developed scenarios.

To mitigate the non-compliances, an augmentation to existing pump capacity will be required in the 2031 horizon. The proposed development is not a trigger for the upgrade. . It is recommended to Council tailor this augmentation to suit the ultimate PWWF requirements of the SPS PA10 catchment.

Refer to Appendix A for Council correspondence that includes pump information.

7.2.1.2 Operational Wet Well Assessment

Table 7-2 below encompasses all the information relevant to the operational wet well volume of SPS PA10. Council's infrastructure plan shows that there are no proposed upgrades. Council provided advice that there are no proposed upgrades to the operational wet well volume for pump station SPS PA10 for the assessed planning horizons.

No upgrade is deemed necessary for pump capacity, therefore N = 5 was maintained (>100kW).

Table 7-2 Operational Wet Well Volume

SPS PA10	Required Volume (m^3)	Existing Op. Storage Volume (m^3)
2066 Existing	406.9	156.2
2066 Developed	405.9	
2041 Existing	365.2	
2041 Developed	364.1	
2036 Existing	316.6	
2036 Developed	315.5	
2031 Existing	257.5	
2031 Developed	258.4	
2026 Existing	205.9	
2026 Developed	206.8	
2021 Existing	160.6	
2021 Developed	161.5	

As shown above in Table 7-2, there is inadequate operational storage across all assessed planning scenarios. It is suggested that Council investigate an upgrade for the operational storage volume to occur in the 2021 planning horizon to match the existing 2066 planning horizon requirements, being the most conservative assessment scenario. This constitutes an additional 250.7m^3 of operational storage volume required.

The proposed development is not the trigger for this upgrade as this non-compliance is also observed under existing demand scenarios. It is noted that the development in isolation presents +0.9m^3 of operational storage in the 2021 to 2031 planning horizons and a reduction in the subsequent horizons due to the reduction in demand assigned to the site.

Refer to Appendix A for Council correspondence that includes operational storage information.

7.2.1.3 Emergency Storage Volume Assessment

Table 7-3 below encompasses all the information relevant to the Emergency Storage Volume of the local SPS PA10 catchment advised by Council (refer Appendix A for correspondence).

Table 7-3 Emergency Storage Volume

SPS PA10	Local EP	Existing System Volume (m^3)	Required System Volume (m^3)
2066 Existing	81246.1	5865.2	2437.4
2066 Developed	80709.6		2421.3
2041 Existing	70530.4	5970.5	2351.0
2041 Developed	69993.9		2333.1
2036 Existing	59063.4	6127.8	1968.8
2036 Developed	58537.9		1951.3
2031 Existing	50535.8	6348.4	1684.5
2031 Developed	50969.7		1699.0
2026 Existing	41605.2	6545.6	1386.8
2026 Developed	42039.2		1401.3

SPS PA10	Local EP	Existing System Volume (m^3)	Required System Volume (m^3)
2021 Existing	36082.2	6717.9	1202.7
2021 Developed	36516.2		1217.2

As shown above in Table 7-3, all assessed planning horizons have sufficient emergency storage volume in both scenarios.

Refer to Appendix A for Council correspondence that includes emergency storage volume information.

7.2.1.4 Rising Main Velocity Assessment

No assessment was undertaken on the rising mains as the proposed development in isolation does not trigger an upgrade to the pump capacity.

8 CONCLUSION

This report provides the summary of a Sewer Network Capacity Assessment (SNCA) undertaken to assess potential impacts of the proposed development on the existing sewer network.

Gravity Network

- Minimum freeboard non-compliances are observed across both the existing and developed scenarios in all scenarios. Three recurring non-compliances are observed to occur due to shallow existing manhole depths (<1.2m depth), with flow being contained within the downstream gravity mains and no accumulation occurring within the manholes above the obverts of the downstream sewer mains.

  It was identified that a portion of the LGIP upgrade GPI23 was required to be brought forward in both the existing and the developed outcomes, comprising ≈2/3rds of the total GPI23 alignment. The existing case required the upgrade to be brought forward from the 2036 horizon to the 2031 horizon, whereas the developed scenario required it to be brought forward from the 2036 to the 2026 horizon.

An assessment of SPS PA10 was undertaken, with the following conclusions:

Pump Capacity

- There is inadequate pump capacity across all assessed planning horizons for both scenarios. It is recommended CoGC tailor augmentations to pump capacity to suit the ultimate PWWF requirements of the SPS PA10 catchment.

Operational Storage

- There is inadequate operational storage across all assessed planning horizon for both scenarios. It is suggested that Council investigate an upgrade for the operational storage volume to occur in the 2021 planning horizons to meet the required ultimate requirement of the conservative existing 2066 planning horizon.

Emergency Storage

- There is adequate emergency storage volume across all assessed planning horizons for both scenarios.

Rising Main Velocity Assessment

- No assessment was undertaken as the proposed development in isolation does not trigger an upgrade from the more conservative existing 2066 scenario.

Based on the results from this report, no network upgrades are proposed as a result of this proposed development.

APPENDIX A
CoGC Correspondence

Cazeres, Mike

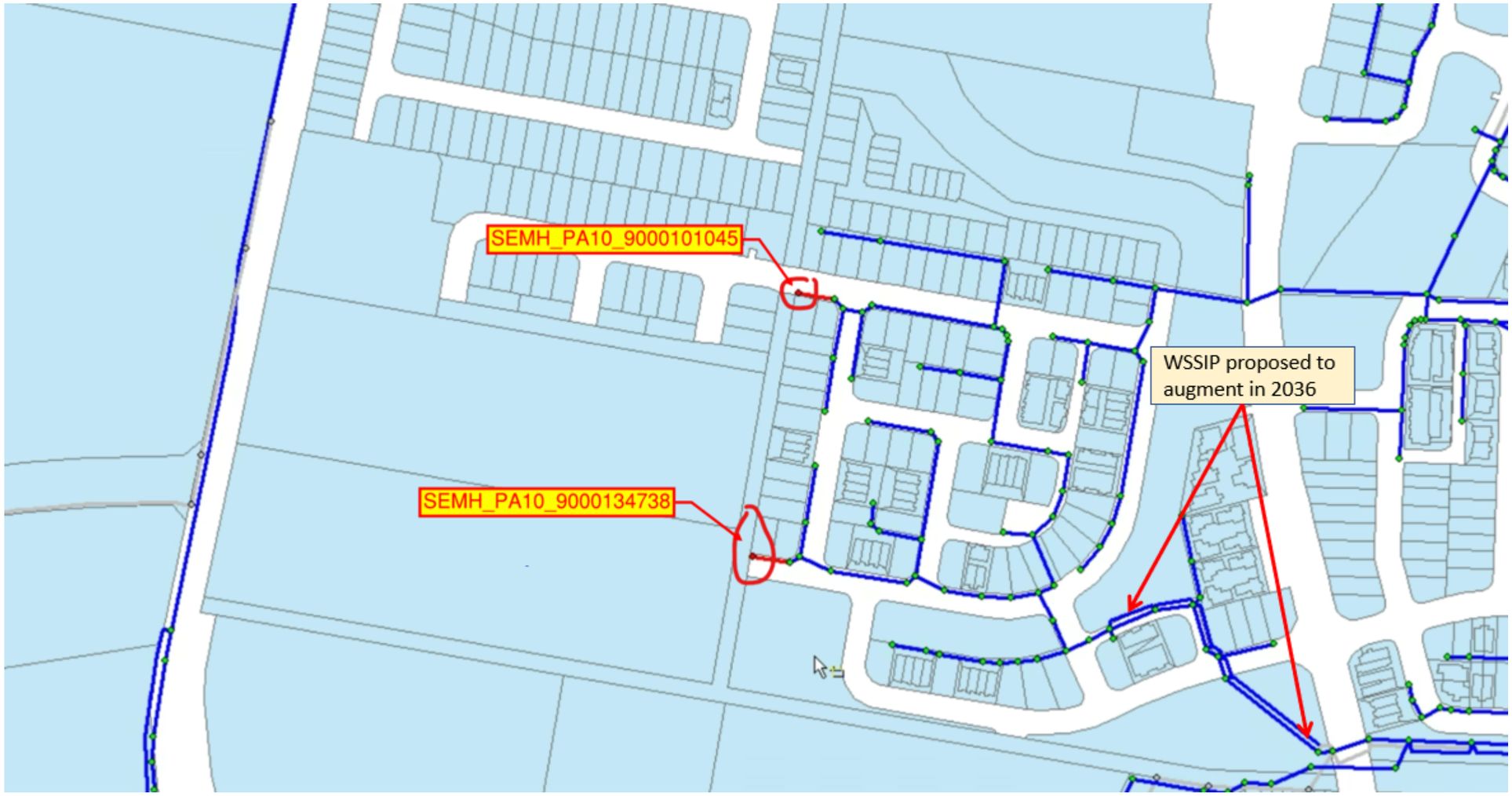
From: SIKDER Swapan <SSIKDER@goldcoast.qld.gov.au>
Sent: Friday, 7 March 2025 9:26 AM
To: Shepherd, Ashley
Cc: SAHA Uttam; GUERIN Phillip; JAHAN Syeda; ADINA Anton; 30157884 - 54 George Alexander Way - DA &; Menzies, Gary; Cazeres, Mike
Subject: RE: George Alexander Way

Hi Ashley,

The allocated EPs in IDM for the subject lot are as below:

	2021	2026	2031	2036	2041	2066
EP allocated in IDM	0.0	0.0	0.0	959.4	970.4	970.4

The subject site has EP allocated, more than the development load, only from 2036 and WSSIP2019 proposed to augment several downstream gravity sewers in 2036.



Therefore, if the development plans to connect to City's sewer network before 2036, sewer network capacity assessment **would be required** to identify whether those gravity sewer augmentations would need to be brought forward because of the proposed development.

Kind regards,
Swapan

From: Shepherd, Ashley <Ashley.Shepherd@arcadis.com>
Sent: Thursday, 6 March 2025 12:35 PM
To: SIKDER Swapan <SSIKDER@goldcoast.qld.gov.au>
Cc: SAHA Uttam <USAHA@goldcoast.qld.gov.au>; GUERIN Phillip <PGUERIN@goldcoast.qld.gov.au>; JAHAN Syeda <SJAHAN@goldcoast.qld.gov.au>; ADINA Anton <AADINA@goldcoast.qld.gov.au>; 30157884 - 54 George Alexander Way - DA & <project-30157884@arcadis.com>; Menzies, Gary <Gary.Menzies@arcadis.com>; Cazeres, Mike <Mike.Cazeres@arcadis.com>
Subject: RE: George Alexander Way

Hi Swapan,

I trust you have been well and are keeping safe!

With regard to the advice provided by Council, I understand that the Council Sewer Model allocates a total of 971 EP for the subject site (96RP187418), distributed across two junctions as noted in Image 1 below.

Specifically, junction SEMH_PA10_9000101045 has an ultimate horizon allowance of 523.646 EP. The proposed development load is 480 EP, as outlined in Table 1 below. The development intends to connect upstream of junction SEMH_PA10_9000101045.

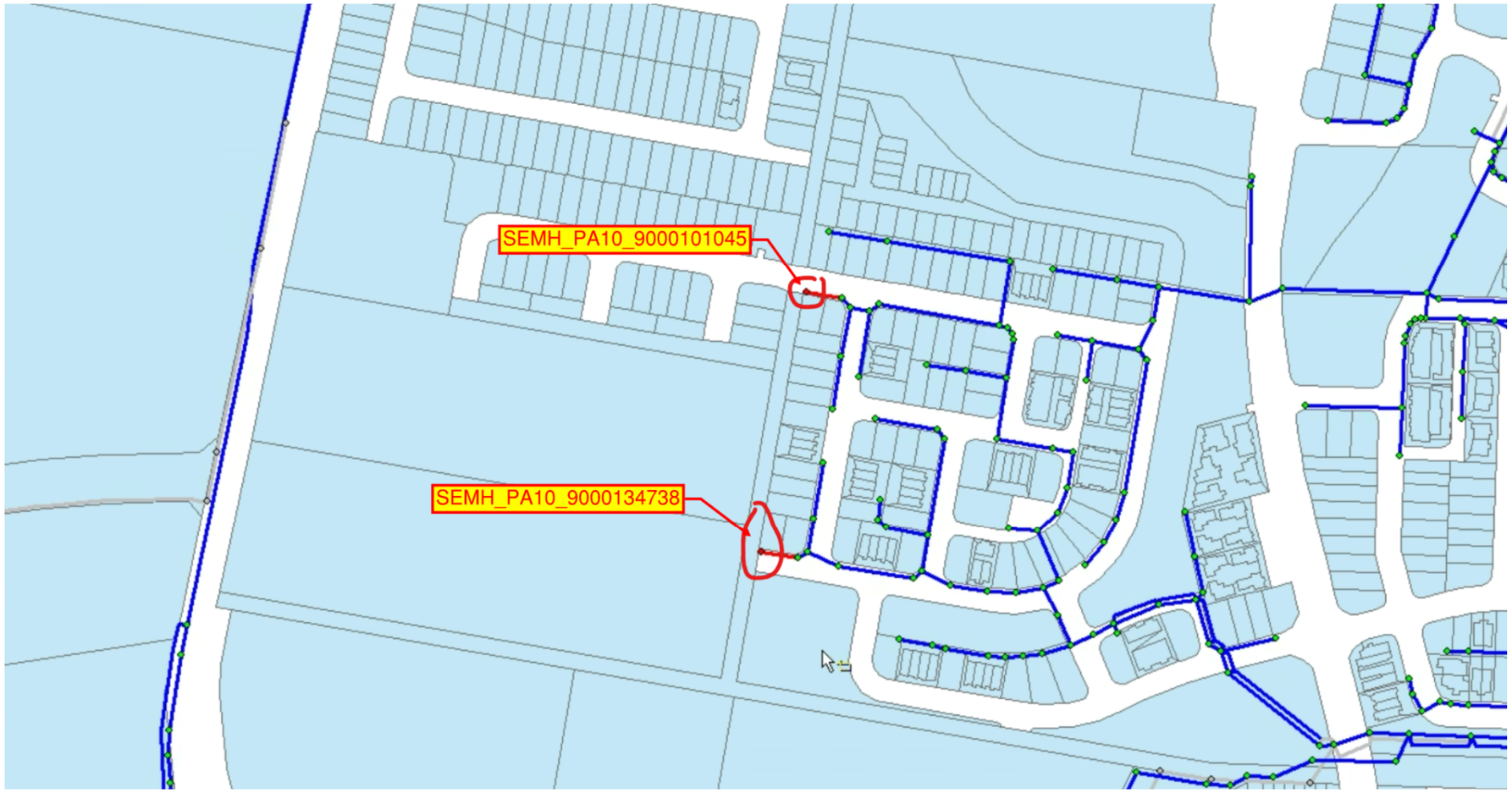
Considering the proposed reduction at the point of connection and the overall reduction to the network in the ultimate horizon, could you kindly confirm if a sewer capacity assessment is still deemed necessary by Council?

Please don't hesitate to reach out if you have any questions or require further clarification.

Table 1 - Proposed Loading Development Loading

Proposed Development (Application Ref.)	**EP**
Freehold Proposal (COM/2023/16)	86.1
Multi-unit & Townhouse Proposal (COM/2024/236)	393.43
Total	**480**

IMAGE 1 - SEWER MODEL CONNECTION POINTS



Kind Regards,

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From: SIKDER Swapan <SSIKDER@goldcoast.qld.gov.au>
Sent: Monday, 24 February 2025 4:49 PM
To: Djelovic, Gabby <Gabby.Djelovic@arcadis.com>
Cc: SAHA Uttam <USAHA@goldcoast.qld.gov.au>; GUERIN Phillip <PGUERIN@goldcoast.qld.gov.au>; JAHAN Syeda <SJAHAN@goldcoast.qld.gov.au>; ADINA Anton <AADINA@goldcoast.qld.gov.au>
Subject: RE: George Alexander Way

Hi Gabby,

Please find below the information needed for your modelling assessment.

Water Supply and Sewerage Infrastructure Plan 2019 report is available under:

https://www.goldcoast.qld.gov.au/water-supply-sewerage-infrastructure-plan-24413.html

Note: Assessment is required from 2021 to 2066 planning horizons only (i.e, 2021, 2026, 2031, 2036, 2041, 2066).

Scenarios from WSSIP2019 model to be used: L2_2021_PWWF_AUG, L2_2026_PWWF_AUG, L2_2031_PWWF_AUG, L2_2036_PWWF_AUG, L2_2041_PWWF_AUG, L2_2066_PWWF_AUG.

ADWF Loading = 200 L/EP/day up to 2041 planning horizons, thereafter 180 L/EP/day.

1 ET = 2.79 EP for all calculations.

Development Site: **54 George Alexander Way, Coomera (***Lot* 96 on RP 187418**)**

- **Scope of analysis**

Gravity mains capacity assessment from proposed development connection manhole in the existing gravity sewer network to SPS PA10.

SPS PA10 pump capacity, operational storage, emergency storage & rising main capacity assessments are required.

Pumps capacity for SPS PA10 should be verified by running whole model with proposed development and surrounding developments and to be provided in the report.

The following sewer network model to be used for the analysis:

The Pimpama sewer model (PI_WSSIP_2019)

- **LGIP sewer demands to be removed from the model**

The site details with Allocation Code and connection in the model are as below:

Address	LotPlan	Allocation Code	Manhole (on Model)
54 George Alexander Way, Coomera	96RP187418	207874	SEMH_PA10_9000134738
		207875	SEMH_PA10_9000101045

You then add the proposed development load at the proposed connection point.

- **PA10 Pumps**: 2 x 460 kW & 2 x 160 kW, wet well dia. = 3.73 m. Take other levels from the model.

For existing operational volume calculation, take pump start/stop level from model Pump 1. In SEQ Code, Q is duty (single) pump capacity (L/s)

Existing operating storage volume at PA10 is **156.2 m^3.**

Existing PA10 dual pumps capacity is 1370.6 L/s from WSSIP2019 Pimpama model. No Pumps upgrade is proposed up to 2066.

See below table for available emergency storage at PA10 for each planning horizon.

Pump Station	Available emergency storage 9kL) in 2021	Available emergency storage (kL) in 2026	Available emergency storage (kL) in 2031	Available emergency storage (kL) in 2036	Available emergency storage (kL) in 2041	Available emergency storage (kL) in 2066
PA10	6717.9	6545.6	6348.4	6127.8	5970.5	5865.2

- **Any other considerations that need to be accounted for (e.g. demands from recently approved developments)**

There are several approved surrounding developments within SPS PA10 in our database.

Additional EP (Proposed development EP – IDM 2016 EP) for each development is provided below in the table. Consultant should add these demands in the model before analysis is undertaken.

Address	LotPlan	Connection Manhole	Pump Station Catchment	2021 Additional EP	2026 Additional EP	2031 Additional EP	2036 Additional EP	2041 Additional EP	2066 Additional EP
38 Gawthern Drive, Pimpama	16RP835833	SEMH_PA10_9000328567	PA10	267.8	267.8	102.05	0	0	0
40 Gawthern Drive, Pimpama	17RP835834	SEMH_PA10_9000328575	PA10	255.5	255.5	255.5	119.38	0	0
4 Oakey Creek Road, Coomera	8RP172962	GM_PIC_01AUG	PA10	342.7	0	0	0	0	0
1 Karingal Drive, Pimpama	18RP152381	SEMH_PA10_9000313894	PA10	175	175	59.625	0	0	0
2 Karingal Drive, Pimpama	19 RP152380	SEMH_PA10_9000313897	PA10	174	174	174	174	170.68	76.6
207 Foxwell Road		GM_PA10_25AUG	PA10	678.2	564.2	481.3	479.1	476.8	476.8
41 Cox Road, Pimp	13RP835832	SEMH_PA10_9000305925	PA10	194.0	194.0	194.0	194.0	190.7	190.7
215 to 233 Foxwell Rd, Coomera	24SP194261 and 23SP194262	GM_PA10_04AUG	PA10	2175	2175	2175	2175	2175	2175

Please respond to the following for water.

Regards Uttam

From: SAHA Uttam
Sent: Tuesday, 18 February 2025 2:31 PM
To: GUERIN Phillip <PGUERIN@goldcoast.qld.gov.au>
Subject: FW: George Alexander Way

Hi Phillip,

Can you please prepare information for the following request?

G:\SHARE\9 IP\06 ACTIVITIES\A-2014-1010\Development Assessment\54 George Alexander Way, COOMERA\water

Regards Uttam

From: Djelovic, Gabby <Gabby.Djelovic@arcadis.com>
Sent: Tuesday, 18 February 2025 11:45 AM
To: SIKDER Swapan <SSIKDER@goldcoast.qld.gov.au>; SAHA Uttam <USAHA@goldcoast.qld.gov.au>
Subject: George Alexander Way

Good afternoon,

We have been requested by Council to do a network capacity assessment for water and sewer, see the attached IR.

Could we please request the sewer and water information required to undertake capacity assessments for the following address?

- Lot 96 on RP 187418 (54 George Alexander Way, Coomera, QLD, 4209)

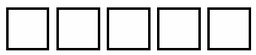
Let me know if there are any concerns.

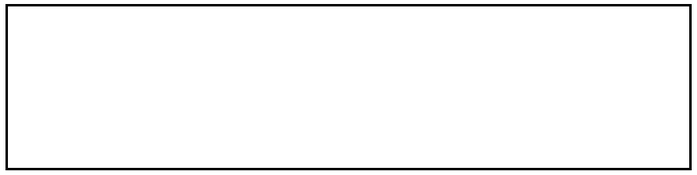
Kind regards,

Gabby Djelovic
Civil Engineer – Urban Development & Regeneration
Arcadis Australia Pacific
Level 7 Seabank Building, 12-14 Marine Parade, Southport, QLD | 4215 | Australia
T +61 (0) 7 5503 4828 | M. + 61 (0) 420 345 367
Postal address – PO Box 1653, Southport QLD | 4215 | Australia
www.arcadis.com

I acknowledge and pay my respects to the Traditional Owners, Custodians and Elders past, present and emerging of the Indigenous Nations of Australia on whose lands I work

precautions have been taken to ensure that no software or viruses are present in our emails, we cannot guarantee that this email or any attachment is virus free or has not been intercepted or changed. Any opinions or other information in this email that do not relate to the official business of Arcadis are neither given nor endorsed by it.





Council of the City of Gold Coast - confidential communication

APPENDIX B
Existing Scenario Results

Long Section 1 Results - Existing Scenario

Year Model **2021**
Time Setting Base
Domain Map

Standard Run - Node Results

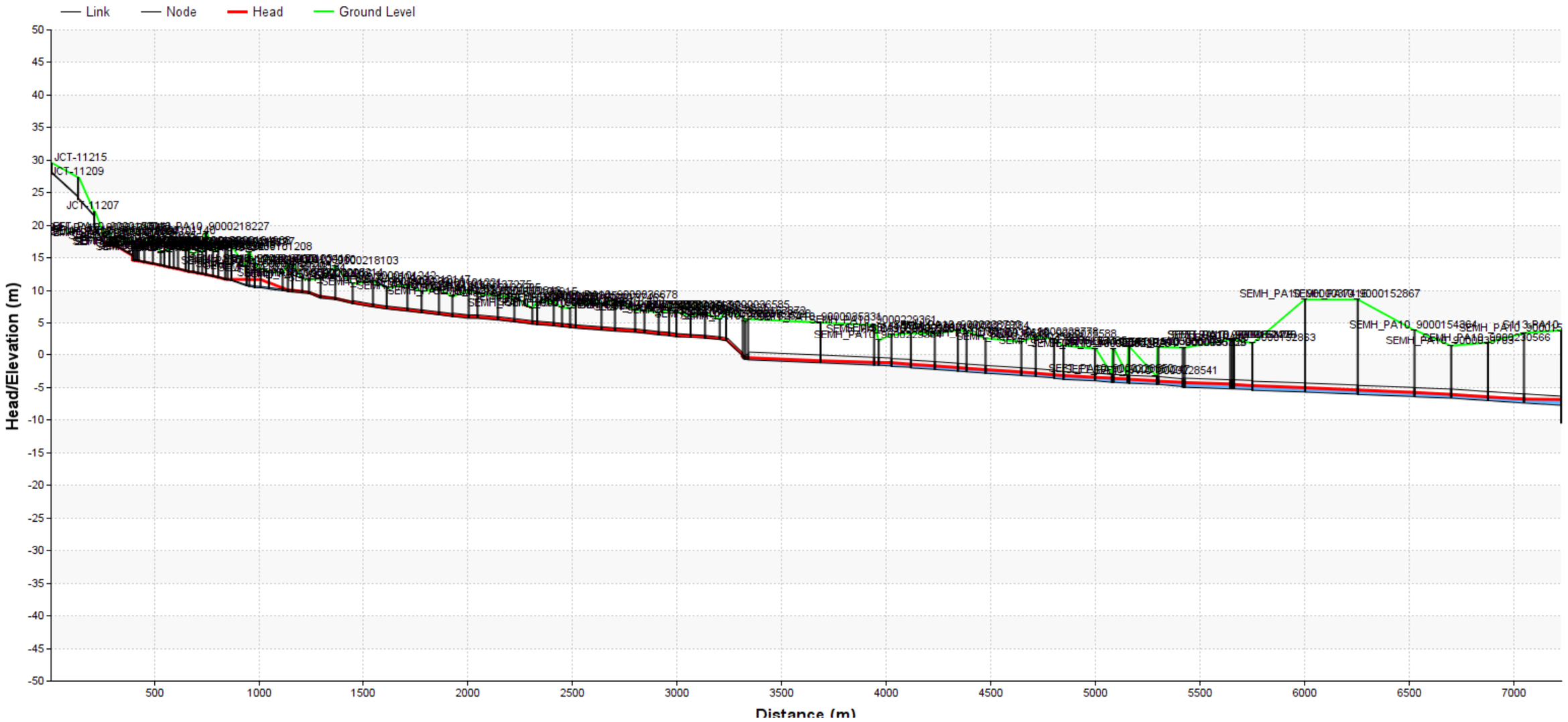
Allowable Depths in Accordance with GCCC Guidelines

Depth Below MH 1

Junction ID	Invert Elevation (m)	Full Depth (m)	Max. Depth (m)	Freeboard (m)	Head (m)	Max. Lateral Inflow (L/s)	Max. Total Inflow (L/s)	MH Depth Comment
JCT-11215	27.97	1.51	0	1.51	27.97	0	0	
JCT-11209	24.03	3.3	0	3.3	24.03	0	0	
JCT-11207	19.67	2.4	0	2.4	19.67	0	0.00	
SEMH_PA10_9000101045	17.18	1.54	0.006	1.534	17.186	0.039	0.04	
SEFT_PA10_9000100010	16.92	2	0.006	1.994	16.926	0	0.04	
SEMH_PA10_9000101065	16.85	1.14	0.015	1.125	16.865	0.039	0.28	
SEMH_PA10_9000218004	16.75	1.3	0.017	1.283	16.767	0.039	0.44	
SEMH_PA10_9000217997	16.67	1.54	0.018	1.522	16.688	0.157	0.6	
SEMH_PA10_9000134835	14.6	2.89	0.029	2.861	14.629	0	0.992	
SEFT_PA10_9000100040	14.56	2	0.028	1.972	14.588	0	0.992	
SEFT_PA10_9000217241	14.52	2	0.028	1.972	14.548	0	0.992	
SEMH_PA10_9000218041	14.49	2.26	0.029	2.231	14.519	0.039	1.031	
SEMH_PA10_9000218050	14.32	2.89	0.032	2.858	14.352	0.118	1.266	
SEMH_PA10_9000101140	14.07	4.19	0.035	4.155	14.105	0.158	1.424	
SEMH_PA10_9000101146	13.83	1.94	0.033	1.907	13.863	0.039	1.463	
SEMH_PA10_9000101155	13.69	2.23	0.034	2.196	13.724	0	1.463	
SEMH_PA10_9000101161	13.51	2.74	0.035	2.705	13.545	0	1.463	
SEMH_PA10_9000134858	13.39	3.11	0.035	3.075	13.425	0	1.463	
SEMH_PA10_9000101182	13.27	3.5	0.034	3.466	13.304	0	1.502	
SEMH_PA10_9000134748	12.99	2.98	0.03	2.95	13.02	0	1.502	
SEMH_PA10_9000101024	12.8	3.27	0.08	3.19	12.88	0	2.70	
SEMH_PA10_9000134870	12.78	2.79	0.044	2.746	12.824	0	2.70	
SEMH_PA10_9000101299	12.6	3.4	0.053	3.347	12.653	0.039	3.135	
SEMH_PA10_9000101296	12.5	3.32	0.047	3.273	12.547	0	3.135	
SEMH_PA10_9000218227	12.36	6.49	0.054	6.436	12.414	0	3.352	
SEMH_PA10_9000101249	12.15	3.89	0.051	3.839	12.201	0.039	3.391	
SEMH_PA10_9000134955	11.95	4.41	0.053	4.357	12.003	0	3.72	
SEMH_PA10_9000101277	11.68	4.72	0.058	4.662	11.738	0	3.72	
SEMH_PA10_9000134968	11.61	5.04	0.082	4.958	11.692	0.039	3.884	
SEMH_PA10_9000218197	11.49	5.11	0.247	4.863	11.737	0	4.174	
SEMH_PA10_9000218141	10.71	2.86	1.097	1.763	11.807	0	7.929	
SEMH_PA10_9000101208	10.62	5.24	1.164	4.076	11.784	0	7.973	
SEMH_PA10_9000218120	10.44	3.49	1.316	2.174	11.756	0	5.63	
SEMH_PA10_9000312526	10.4	2.84	1.354	1.486	11.754	0	49.97	
SEMH_PA10_9000101205	10.2	2.7	1.051	1.649	11.251	0	48.471	
SEMH_PA10_9000218134	9.96	2.57	0.458	2.112	10.418	0	48.476	
SEMH_PA10_9000103418	9.8	4.07	0.287	3.783	10.087	0	54.782	
SEMH_PA10_9000220010	9.74	4.08	0.275	3.805	10.015	0	55.728	
SEMH_PA10_9000220005	9.59	2.2	0.27	1.93	9.86	0	55.94	
SEMH_PA10_9000220016	9.51	2.05	0.152	1.898	9.662	0	55.92	
SEMH_PA10_9000218214	8.8	2.94	0.289	2.651	9.089	0	55.918	
SEMH_PA10_9000218103	8.58	4.98	0.187	4.793	8.767	0	55.908	
SEMH_PA10_9000218204	7.98	3.01	0.174	2.836	8.154	0	64.258	
SEMH_PA10_9000101242	7.45	3.88	0.185	3.695	7.635	0	65.381	
SEMH_PA10_9000101230	7.15	3.2	0.204	2.996	7.354	0	65.38	
SEMH_PA10_9000218147	6.81	3.93	0.201	3.729	7.011	0	65.38	
SEMH_PA10_9000134919	6.56	3.22	0.201	3.019	6.761	0	65.379	
SEMH_PA10_9000101221	6.25	3.92	0.195	3.725	6.445	0	65.379	
SEMH_PA10_9000218259	5.99	3	0.202	2.798	6.192	0	77.957	

Junction ID	Invert Elevation (m)	Full Depth (m)	Max. Depth (m)	Freeboard (m)	Head (m)	Max. Lateral Inflow (L/s)	Max. Total Inflow (L/s)	MH Depth Comment
SEMH_PA10_9000137275	5.726	4.244	0.295	3.949	6.021	0	79.688	
SEMH_PA10_9000100905	5.71	3.73	0.224	3.506	5.934	0	79.69	
SEMH_PA10_9000100846	5.44	3.65	0.227	3.423	5.667	0	92.01	
SEMH_PA10_9000100915	5.16	3.75	0.217	3.533	5.377	0	92.01	
SEMH_PA10_9000100938	4.8	2.44	0.265	2.175	5.065	0	92.01	
SEMH_PA10_9000102851	4.75	3.38	0.254	3.126	5.004	0	92.009	
SEMH_PA10_9000102845	4.54	3.65	0.235	3.415	4.775	0.641	92.65	
SEMH_PA10_9000102848	4.4	2.88	0.247	2.633	4.647	0	92.65	
SEMH_PA10_9000102857	4.29	2.88	0.237	2.643	4.527	0	92.65	
SEMH_PA10_9000102227	4.19	3.79	0.265	3.525	4.455	0	97.823	
SEMH_PA10_9000137465	3.89	4.08	0.264	3.816	4.154	0	97.823	
SEMH_PA10_9000036678	3.73	4.69	0.292	4.398	4.022	0	97.823	
SEMH_PA10_9000229232	3.55	3.35	0.251	3.099	3.801	0	99.526	
SEMH_PA10_9000035356	3.41	3.43	0.251	3.179	3.661	0	112.96	
SEMH_PA10_9000036665	3.16	3.36	0.289	3.071	3.449	0	112.96	
SEMH_PA10_9000036642	3.04	3.89	0.235	3.655	3.275	0	112.957	
SEMH_PA10_9000036637	2.86	3.77	0.291	3.479	3.151	0	112.957	
SEMH_PA10_9000036626	2.7	3.41	0.317	3.093	3.017	0	114.783	
SEMH_PA10_9000229221	2.57	3.83	0.272	3.558	2.842	0	114.782	
SEMH_PA10_9000036590	2.35	3.18	0.233	2.947	2.583	0	114.78	
SEMH_PA10_9000036585	2.19	4.6	0.144	4.456	2.334	0	114.78	
SEMH_PA10_9000152872	-0.601	6.482	0.334	6.148	-0.267	0	221.667	
SEMH_PA10_9000152524	-0.65	5.75	0.299	5.451	-0.351	0	221.666	
SEMH_PA10_9000152528	-0.745	6.265	0.334	5.931	-0.411	0	221.664	
SEFT_PA10_9000035331	-1.2	6.2	0.322	5.878	-0.878	0.018	221.877	
SEMH_PA10_9000229361	-1.55	6.16	0.428	5.732	-1.122	0	220.33	
SEMH_PA10_9000229364	-1.575	3.735	0.438	3.297	-1.137	0	259.29	
SEMH_PA10_9000035546	-1.766	4.859	0.609	4.25	-1.157	0	727.78	
SEMH_PA10_9000228745	-1.99	5.35	0.583	4.767	-1.407	0.762	726.43	
SEMH_PA10_9000151533	-2.22	5.5	0.561	4.939	-1.659	0.762	724.95	
SEMH_PA10_9000228790	-2.48	6.27	0.573	5.697	-1.907	0	723.88	
SEMH_PA10_9000228784	-2.59	6.26	0.567	5.693	-2.023	0	720.81	
SEMH_PA10_9000035628	-2.8	5.297	0.569	4.728	-2.231	0.762	720.59	
SEMH_PA10_9000035608	-3.18	5.132	0.597	4.535	-2.583	0	716.33	
SEMH_PA10_9000228778	-3.3	6.06	0.538	5.522	-2.762	0	718.51	
SEMH_PA10_9000035588	-3.59	5.971	0.567	5.404	-3.023	0	719.67	
SEMH_PA10_9000152335	-3.75	5.12	0.617	4.503	-3.133	0	717.08	
SEMH_PA10_9000153878	-3.41	7.41	0.387	7.023	-3.023	0	3.24	
SEMH_PA10_9000229239	-3.96	4.88	0.546	4.334	-3.414	0	714.82	
SEFT_PA10_9000228550	-4.18	1.2	0.655	0.545	-3.525	0	708.63	FAIL
SEMH_PA10_9000229254	-4.18	5.03	0.613	4.417	-3.567	0	710.49	
SEFT_PA10_9000151247	-4.31	1.2	0.651	0.549	-3.659	0	709.28	FAIL
SEMH_PA10_9000152353	-4.317	5.47	0.618	4.852	-3.699	0	709.10	
SEFT_PA10_9000228541	-4.495	1.202	0.558	0.644	-3.937	0	708.00	FAIL
SEMH_PA10_9000036748	-4.497	5.647	0.494	5.153	-4.003	0	705.56	
SEMH_PA10_9000036739	-4.94	5.99	0.759	5.231	-4.181	0	968.52	
SEFT_PA10_9000035326	-4.95	6	0.732	5.268	-4.218	0	958.60	
SEFT_PA10_9000035129	-5.19	7.46	0.758	6.702	-4.432	0	953.78	
SEMH_PA10_9000152405	-5.2	7.47	0.732	6.738	-4.468	0	946.78	
SEFT_PA10_9000151270	-5.2	7.47	0.686	6.784	-4.514	0	946.62	
SEMH_PA10_9000152863	-5.42	7.173	0.735	6.438	-4.685	0	946.83	
SEMH_PA10_9000037416	-5.7	14.22	0.7	13.52	-5	0	942.90	
SEMH_PA10_9000152867	-6.06	14.57	0.708	13.862	-5.352	0	939.49	
SEMH_PA10_9000154364	-6.42	10.272	0.696	9.576	-5.724	0	935.78	
SEMH_PA10_9000039703	-6.62	7.97	0.591	7.379	-6.029	0	933.97	
SEMH_PA10_9000230566	-7	8.84	0.591	8.249	-6.409	0	931.68	
SEMH_PA10_9000154353	-7.37	10.75	0.637	10.113	-6.733	0.38	935.14	

HGL Profile with Maximum Data of Links CDT-353,CDT-355,...,GM_PA10_9000039678L01



Long Section 1 Results - Existing Scenario

Year Model **2026**
Time Setting Base
Domain Map

Standard Run - Node Results

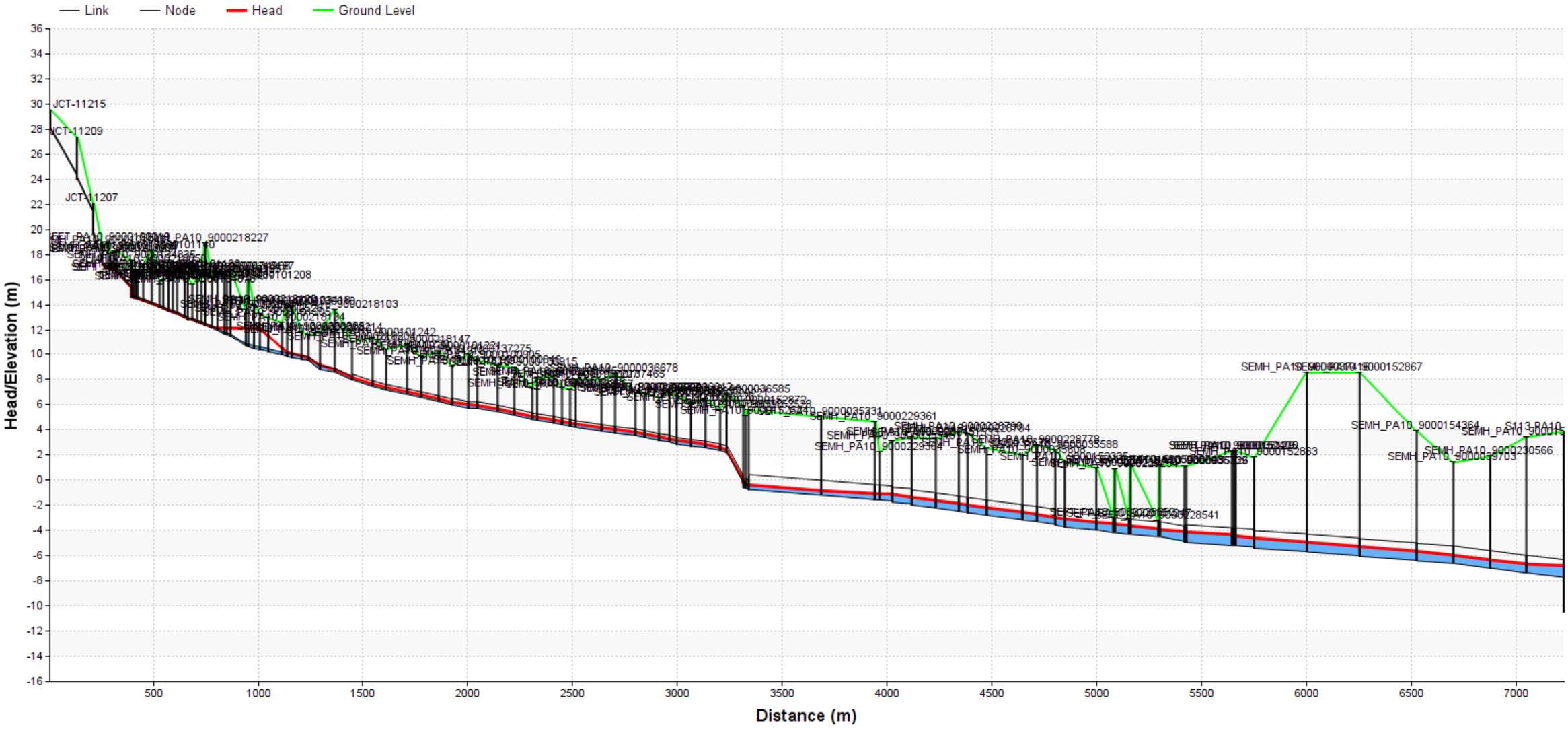
Allowable Depths in Accordance with GCCC Guidelines

Depth Below MH 1

Junction ID	Invert Elevation (m)	Full Depth (m)	Max. Depth (m)	Freeboard (m)	Head (m)	Max. Lateral Inflow (L/s)	Max. Total Inflow (L/s)	MH Depth Comment
JCT-11215	27.97	1.51	0	1.51	27.97	0	0	
JCT-11209	24.03	3.3	0	3.3	24.03	0	0	
JCT-11207	19.67	2.4	0	2.4	19.67	0	0.00	
SEMH_PA10_9000101045	17.18	1.54	0.006	1.534	17.186	0.039	0.04	
SEFT_PA10_9000100010	16.92	2	0.006	1.994	16.926	0	0.04	
SEMH_PA10_9000101065	16.85	1.14	0.015	1.125	16.865	0.039	0.27	
SEMH_PA10_9000218004	16.75	1.3	0.017	1.283	16.767	0.039	0.44	
SEMH_PA10_9000217997	16.67	1.54	0.018	1.522	16.688	0.156	0.599	
SEMH_PA10_9000134835	14.6	2.89	0.029	2.861	14.629	0	0.99	
SEFT_PA10_9000100040	14.56	2	0.028	1.972	14.588	0	0.99	
SEFT_PA10_9000217241	14.52	2	0.028	1.972	14.548	0	0.99	
SEMH_PA10_9000218041	14.49	2.26	0.029	2.231	14.519	0.039	1.029	
SEMH_PA10_9000218050	14.32	2.89	0.032	2.858	14.352	0.117	1.263	
SEMH_PA10_9000101140	14.07	4.19	0.035	4.155	14.105	0.159	1.422	
SEMH_PA10_9000101146	13.83	1.94	0.033	1.907	13.863	0.039	1.461	
SEMH_PA10_9000101155	13.69	2.23	0.034	2.196	13.724	0	1.461	
SEMH_PA10_9000101161	13.51	2.74	0.035	2.705	13.545	0	1.461	
SEMH_PA10_9000134858	13.39	3.11	0.035	3.075	13.425	0	1.461	
SEMH_PA10_9000101182	13.27	3.5	0.034	3.466	13.304	0	1.5	
SEMH_PA10_9000134748	12.99	2.98	0.03	2.95	13.02	0	1.5	
SEMH_PA10_9000101024	12.8	3.27	0.08	3.19	12.88	0	2.70	
SEMH_PA10_9000134870	12.78	2.79	0.044	2.746	12.824	0	2.70	
SEMH_PA10_9000101299	12.6	3.4	0.053	3.347	12.653	0.039	3.135	
SEMH_PA10_9000101296	12.5	3.32	0.047	3.273	12.547	0	3.135	
SEMH_PA10_9000218227	12.36	6.49	0.054	6.436	12.414	0	3.353	
SEMH_PA10_9000101249	12.15	3.89	0.051	3.839	12.201	0.039	3.392	
SEMH_PA10_9000134955	11.95	4.41	0.188	4.222	12.138	0	3.81	
SEMH_PA10_9000101277	11.68	4.72	0.474	4.246	12.154	0	3.82	
SEMH_PA10_9000134968	11.61	5.04	0.505	4.535	12.115	0.039	4.018	
SEMH_PA10_9000218197	11.49	5.11	0.663	4.447	12.153	0	4.052	
SEMH_PA10_9000218141	10.71	2.86	1.401	1.459	13.447	0	8.249	
SEMH_PA10_9000101208	10.62	5.24	1.568	3.672	12.188	0	8.852	
SEMH_PA10_9000218120	10.44	3.49	1.697	1.793	12.137	0	6.64	
SEMH_PA10_9000312526	10.4	2.84	1.718	1.122	12.118	0	56.09	
SEMH_PA10_9000101205	10.2	2.7	1.326	1.374	11.526	0	53.708	
SEMH_PA10_9000218134	9.96	2.57	0.593	1.977	10.553	0	53.671	
SEMH_PA10_9000103418	9.8	4.07	0.366	3.704	10.166	0	60.747	
SEMH_PA10_9000220010	9.74	4.08	0.325	3.755	10.065	0	61.911	
SEMH_PA10_9000220005	9.59	2.2	0.298	1.902	9.888	0	61.92	
SEMH_PA10_9000220016	9.51	2.05	0.162	1.888	9.672	0	61.91	
SEMH_PA10_9000218214	8.8	2.94	0.367	2.573	9.167	2.152	64.056	
SEMH_PA10_9000218103	8.58	4.98	0.207	4.773	8.787	0	64.056	
SEMH_PA10_9000218204	7.98	3.01	0.188	2.822	8.168	0	74.334	
SEMH_PA10_9000101242	7.45	3.88	0.201	3.679	7.651	0	75.461	
SEMH_PA10_9000101230	7.15	3.2	0.222	2.978	7.372	0	75.46	
SEMH_PA10_9000218147	6.81	3.93	0.219	3.711	7.029	0	75.45	
SEMH_PA10_9000134919	6.56	3.22	0.218	3.002	6.778	0	75.454	
SEMH_PA10_9000101221	6.25	3.92	0.212	3.708	6.462	0	75.453	
SEMH_PA10_9000218259	5.99	3	0.216	2.784	6.206	0	88.061	

Junction ID	Invert Elevation (m)	Full Depth (m)	Max. Depth (m)	Freeboard (m)	Head (m)	Max. Lateral Inflow (L/s)	Max. Total Inflow (L/s)	MH Depth Comment
SEMH_PA10_9000137275	5.726	4.244	0.314	3.93	6.04	0	89.874	
SEMH_PA10_9000100905	5.71	3.73	0.24	3.49	5.95	0	89.87	
SEMH_PA10_9000100846	5.44	3.65	0.242	3.408	5.682	0	102.35	
SEMH_PA10_9000100915	5.16	3.75	0.231	3.519	5.391	0	102.354	
SEMH_PA10_9000100938	4.8	2.44	0.282	2.158	5.082	0	102.354	
SEMH_PA10_9000102851	4.75	3.38	0.27	3.11	5.02	0	102.354	
SEMH_PA10_9000102845	4.54	3.65	0.251	3.399	4.791	0.699	103.053	
SEMH_PA10_9000102848	4.4	2.88	0.264	2.616	4.664	0	103.05	
SEMH_PA10_9000102857	4.29	2.88	0.253	2.627	4.543	0	103.05	
SEMH_PA10_9000102227	4.19	3.79	0.281	3.509	4.471	0	108.218	
SEMH_PA10_9000137465	3.89	4.08	0.282	3.798	4.172	0	108.217	
SEMH_PA10_9000036678	3.73	4.69	0.31	4.38	4.04	0	108.217	
SEMH_PA10_9000229232	3.55	3.35	0.266	3.084	3.816	0	109.918	
SEMH_PA10_9000035356	3.41	3.43	0.267	3.163	3.677	0	124.62	
SEMH_PA10_9000036665	3.16	3.36	0.306	3.054	3.466	0	124.62	
SEMH_PA10_9000036642	3.04	3.89	0.25	3.64	3.29	0	124.62	
SEMH_PA10_9000036637	2.86	3.77	0.311	3.459	3.171	0	124.62	
SEMH_PA10_9000036626	2.7	3.41	0.336	3.074	3.036	0	126.444	
SEMH_PA10_9000229221	2.57	3.83	0.288	3.542	2.858	0	126.444	
SEMH_PA10_9000036590	2.35	3.18	0.247	2.933	2.597	0	126.44	
SEMH_PA10_9000036585	2.19	4.6	0.151	4.449	2.341	0	126.44	
SEMH_PA10_9000152872	-0.601	6.482	0.397	6.085	-0.204	0	284.864	
SEMH_PA10_9000152524	-0.65	5.75	0.349	5.401	-0.301	0	284.858	
SEMH_PA10_9000152528	-0.745	6.265	0.38	5.885	-0.365	0	284.851	
SEFT_PA10_9000035331	-1.2	6.2	0.365	5.835	-0.835	0.036	285.18	
SEMH_PA10_9000229361	-1.55	6.16	0.485	5.675	-1.065	0	282.36	
SEMH_PA10_9000229364	-1.575	3.735	0.495	3.24	-1.08	0	289.77	
SEMH_PA10_9000035546	-1.766	4.859	0.665	4.194	-1.101	0	836.19	
SEMH_PA10_9000228745	-1.99	5.35	0.637	4.713	-1.353	0.767	836.79	
SEMH_PA10_9000151533	-2.22	5.5	0.614	4.886	-1.606	0.767	838.95	
SEMH_PA10_9000228790	-2.48	6.27	0.631	5.639	-1.849	0	838.90	
SEMH_PA10_9000228784	-2.59	6.26	0.623	5.637	-1.967	0	838.73	
SEMH_PA10_9000035628	-2.8	5.297	0.625	4.672	-2.175	0.767	839.42	
SEMH_PA10_9000035608	-3.18	5.132	0.657	4.475	-2.523	0	839.24	
SEMH_PA10_9000228778	-3.3	6.06	0.596	5.464	-2.704	0	841.45	
SEMH_PA10_9000035588	-3.59	5.971	0.632	5.339	-2.958	0.9	844.58	
SEMH_PA10_9000152335	-3.75	5.12	0.684	4.436	-3.066	0	844.48	
SEMH_PA10_9000153878	-3.41	7.41	0.452	6.958	-2.958	0	4.30	
SEMH_PA10_9000229239	-3.96	4.88	0.622	4.258	-3.338	0	844.30	
SEFT_PA10_9000228550	-4.18	1.2	0.736	0.464	-3.444	0	843.87	FAIL
SEMH_PA10_9000229254	-4.18	5.03	0.692	4.338	-3.488	0	848.07	
SEFT_PA10_9000151247	-4.31	1.2	0.728	0.472	-3.582	0	847.99	FAIL
SEMH_PA10_9000152353	-4.317	5.47	0.692	4.778	-3.625	0	849.27	
SEFT_PA10_9000228541	-4.495	1.202	0.635	0.567	-3.86	0	849.18	FAIL
SEMH_PA10_9000036748	-4.497	5.647	0.567	5.08	-3.93	0	848.96	
SEMH_PA10_9000036739	-4.94	5.99	0.862	5.128	-4.078	0	1,156.27	
SEFT_PA10_9000035326	-4.95	6	0.834	5.166	-4.116	0	1,155.66	
SEFT_PA10_9000035129	-5.19	7.46	0.857	6.603	-4.333	0	1,155.30	
SEMH_PA10_9000152405	-5.2	7.47	0.828	6.642	-4.372	0	1,154.88	
SEFT_PA10_9000151270	-5.2	7.47	0.779	6.691	-4.421	0	1,154.86	
SEMH_PA10_9000152863	-5.42	7.173	0.831	6.342	-4.589	0	1,156.22	
SEMH_PA10_9000037416	-5.7	14.22	0.793	13.427	-4.907	0	1,155.93	
SEMH_PA10_9000152867	-6.06	14.57	0.802	13.768	-5.258	0	1,155.66	
SEMH_PA10_9000154364	-6.42	10.272	0.785	9.487	-5.635	0	1,155.41	
SEMH_PA10_9000039703	-6.62	7.97	0.671	7.299	-5.949	0	1,155.30	
SEMH_PA10_9000230566	-7	8.84	0.674	8.166	-6.326	0	1,155.62	
SEMH_PA10_9000154353	-7.37	10.75	0.723	10.027	-6.647	0.423	1,160.99	

HGL Profile with Maximum Data of Links CDT-353,CDT-355,...,GM_PA10_9000039678L01



Long Section 1 Results - Existing Scenario

Year Model **2031**
Time Setting Base
Domain Map

Standard Run - Node Results

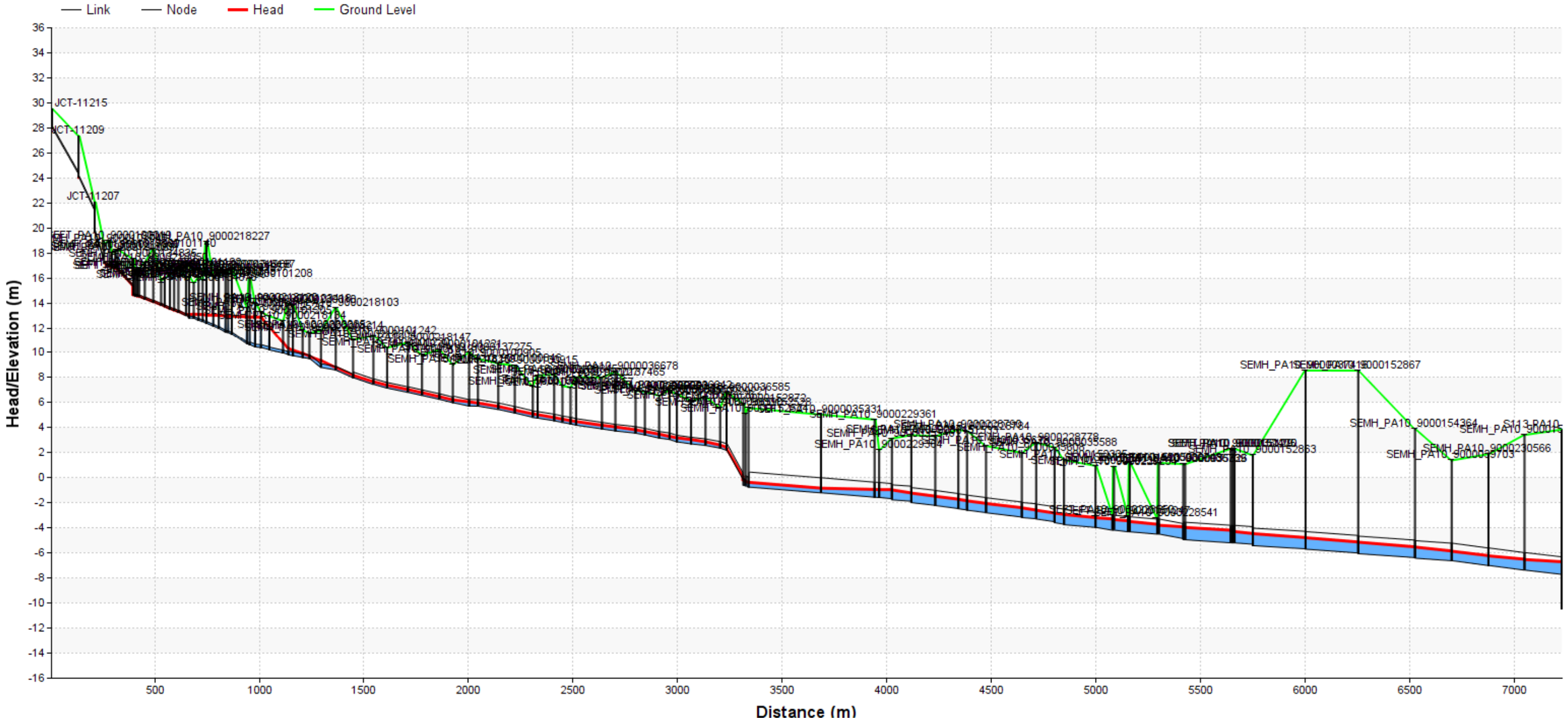
Allowable Depths in Accordance with GCCC Guidelines

Depth Below MH 1

Junction ID	Invert Elevation (m)	Full Depth (m)	Max. Depth (m)	Freeboard (m)	Head (m)	Max. Lateral Inflow (L/s)	Max. Total Inflow (L/s)	MH Depth Comment
JCT-11215	27.97	1.51	0	1.51	27.97	0	0	
JCT-11209	24.03	3.3	0	3.3	24.03	0	0	
JCT-11207	19.67	2.4	0	2.4	19.67	0	0.00	
SEMH_PA10_9000101045	17.18	1.54	0.028	1.512	17.208	1.122	1.12	
SEFT_PA10_9000100010	16.92	2	0.028	1.972	16.948	0	1.12	
SEMH_PA10_9000101065	16.85	1.14	0.032	1.108	16.882	0.039	1.36	
SEMH_PA10_9000218004	16.75	1.3	0.032	1.268	16.782	0.039	1.53	
SEMH_PA10_9000217997	16.67	1.54	0.029	1.511	16.699	0.156	1.685	
SEMH_PA10_9000134835	14.6	2.89	0.042	2.848	14.642	0	2.074	
SEFT_PA10_9000100040	14.56	2	0.041	1.959	14.601	0	2.074	
SEFT_PA10_9000217241	14.52	2	0.041	1.959	14.561	0	2.074	
SEMH_PA10_9000218041	14.49	2.26	0.041	2.219	14.531	0.039	2.113	
SEMH_PA10_9000218050	14.32	2.89	0.044	2.846	14.364	0.117	2.348	
SEMH_PA10_9000101140	14.07	4.19	0.046	4.144	14.116	0.159	2.507	
SEMH_PA10_9000101146	13.83	1.94	0.043	1.897	13.873	0.039	2.546	
SEMH_PA10_9000101155	13.69	2.23	0.045	2.185	13.735	0	2.546	
SEMH_PA10_9000101161	13.51	2.74	0.046	2.694	13.556	0	2.546	
SEMH_PA10_9000134858	13.39	3.11	0.046	3.064	13.436	0	2.546	
SEMH_PA10_9000101182	13.27	3.5	0.045	3.455	13.315	0	2.585	
SEMH_PA10_9000134748	12.99	2.98	0.093	2.887	13.083	0	2.597	
SEMH_PA10_9000101024	12.8	3.27	0.28	2.99	13.08	0	3.86	
SEMH_PA10_9000134870	12.78	2.79	0.337	2.453	13.117	0	3.89	
SEMH_PA10_9000101299	12.6	3.4	0.513	2.887	13.113	0.039	4.334	
SEMH_PA10_9000101296	12.5	3.32	0.583	2.737	13.083	0	4.407	
SEMH_PA10_9000218227	12.36	6.49	0.669	5.821	13.029	0	4.655	
SEMH_PA10_9000101249	12.15	3.89	0.909	2.981	13.059	0.039	4.626	
SEMH_PA10_9000134955	11.95	4.41	1.084	3.326	13.034	0	5.05	
SEMH_PA10_9000101277	11.68	4.72	1.316	3.404	12.996	0	5.01	
SEMH_PA10_9000134968	11.61	5.04	1.327	3.713	12.937	0.039	5.289	
SEMH_PA10_9000218197	11.49	5.11	1.471	3.639	12.961	0	5.698	
SEMH_PA10_9000218141	10.71	2.86	2.246	0.614	12.956	0	10.27	FAIL
SEMH_PA10_9000101208	10.62	5.24	2.318	2.922	12.938	0	9.403	
SEMH_PA10_9000218120	10.44	3.49	2.478	1.012	12.918	0	7.74	
SEMH_PA10_9000312526	10.4	2.84	2.531	0.309	12.931	0	63.46	FAIL
SEMH_PA10_9000101205	10.2	2.7	1.938	0.762	12.138	0	62.367	FAIL
SEMH_PA10_9000218134	9.96	2.57	0.869	1.701	10.829	0	62.345	
SEMH_PA10_9000103418	9.8	4.07	0.56	3.51	10.36	0	69.489	
SEMH_PA10_9000220010	9.74	4.08	0.449	3.631	10.189	0	70.558	
SEMH_PA10_9000220005	9.59	2.2	0.344	1.856	9.934	0	70.25	
SEMH_PA10_9000220016	9.51	2.05	0.176	1.874	9.686	0	70.23	
SEMH_PA10_9000218214	8.8	2.94	1.374	1.566	10.174	2.152	73.086	
SEMH_PA10_9000218103	8.58	4.98	0.23	4.75	8.81	0	73.113	
SEMH_PA10_9000218204	7.98	3.01	0.205	2.805	8.185	0	86.182	
SEMH_PA10_9000101242	7.45	3.88	0.218	3.662	7.668	0	87.316	
SEMH_PA10_9000101230	7.15	3.2	0.242	2.958	7.392	0	87.32	
SEMH_PA10_9000218147	6.81	3.93	0.238	3.692	7.048	0	87.31	
SEMH_PA10_9000134919	6.56	3.22	0.238	2.982	6.798	0	87.313	
SEMH_PA10_9000101221	6.25	3.92	0.231	3.689	6.481	0	87.313	
SEMH_PA10_9000218259	5.99	3	0.232	2.768	6.222	0	100.173	

Junction ID	Invert Elevation (m)	Full Depth (m)	Max. Depth (m)	Freeboard (m)	Head (m)	Max. Lateral Inflow (L/s)	Max. Total Inflow (L/s)	MH Depth Comment
SEMH_PA10_9000137275	5.726	4.244	0.336	3.908	6.062	0	101.992	
SEMH_PA10_9000100905	5.71	3.73	0.259	3.471	5.969	0	101.99	
SEMH_PA10_9000100846	5.44	3.65	0.258	3.392	5.698	0	114.61	
SEMH_PA10_9000100915	5.16	3.75	0.246	3.504	5.406	0	114.613	
SEMH_PA10_9000100938	4.8	2.44	0.302	2.138	5.102	0	114.613	
SEMH_PA10_9000102851	4.75	3.38	0.288	3.092	5.038	0	114.612	
SEMH_PA10_9000102845	4.54	3.65	0.269	3.381	4.809	0.757	115.368	
SEMH_PA10_9000102848	4.4	2.88	0.282	2.598	4.682	0	115.37	
SEMH_PA10_9000102857	4.29	2.88	0.272	2.608	4.562	0	115.37	
SEMH_PA10_9000102227	4.19	3.79	0.3	3.49	4.49	0	120.537	
SEMH_PA10_9000137465	3.89	4.08	0.303	3.777	4.193	0	120.536	
SEMH_PA10_9000036678	3.73	4.69	0.331	4.359	4.061	0	120.536	
SEMH_PA10_9000229232	3.55	3.35	0.284	3.066	3.834	0	122.238	
SEMH_PA10_9000035356	3.41	3.43	0.283	3.147	3.693	0	136.95	
SEMH_PA10_9000036665	3.16	3.36	0.323	3.037	3.483	0	136.95	
SEMH_PA10_9000036642	3.04	3.89	0.266	3.624	3.306	0	136.953	
SEMH_PA10_9000036637	2.86	3.77	0.333	3.437	3.193	0	136.953	
SEMH_PA10_9000036626	2.7	3.41	0.356	3.054	3.056	0	138.779	
SEMH_PA10_9000229221	2.57	3.83	0.305	3.525	2.875	0	138.778	
SEMH_PA10_9000036590	2.35	3.18	0.261	2.919	2.611	0	138.78	
SEMH_PA10_9000036585	2.19	4.6	0.159	4.441	2.349	0	138.78	
SEMH_PA10_9000152872	-0.601	6.482	0.409	6.073	-0.192	0	297.679	
SEMH_PA10_9000152524	-0.65	5.75	0.358	5.392	-0.292	0	297.67	
SEMH_PA10_9000152528	-0.745	6.265	0.389	5.876	-0.356	0	297.659	
SEFT_PA10_9000035331	-1.2	6.2	0.374	5.826	-0.826	0.055	297.714	
SEMH_PA10_9000229361	-1.55	6.16	0.623	5.537	-0.927	0	295.23	
SEMH_PA10_9000229364	-1.575	3.735	0.64	3.095	-0.935	0	357.45	
SEMH_PA10_9000035546	-1.766	4.859	0.817	4.042	-0.949	0	1,166.42	
SEMH_PA10_9000228745	-1.99	5.35	0.784	4.566	-1.206	0.774	1,161.18	
SEMH_PA10_9000151533	-2.22	5.5	0.758	4.742	-1.462	0.774	1,157.99	
SEMH_PA10_9000228790	-2.48	6.27	0.776	5.494	-1.704	0	1,156.25	
SEMH_PA10_9000228784	-2.59	6.26	0.764	5.496	-1.826	0	1,151.46	
SEMH_PA10_9000035628	-2.8	5.297	0.764	4.533	-2.036	0.774	1,150.15	
SEMH_PA10_9000035608	-3.18	5.132	0.797	4.335	-2.383	0	1,144.33	
SEMH_PA10_9000228778	-3.3	6.06	0.729	5.331	-2.571	0	1,140.98	
SEMH_PA10_9000035588	-3.59	5.971	0.783	5.188	-2.807	1.76	1,143.96	
SEMH_PA10_9000152335	-3.75	5.12	0.836	4.284	-2.914	0	1,140.21	
SEMH_PA10_9000153878	-3.41	7.41	0.603	6.807	-2.807	0	5.26	
SEMH_PA10_9000229239	-3.96	4.88	0.786	4.094	-3.174	0	1,137.47	
SEFT_PA10_9000228550	-4.18	1.2	0.9	0.3	-3.28	0	1,131.51	FAIL
SEMH_PA10_9000229254	-4.18	5.03	0.854	4.176	-3.326	0	1,137.03	
SEFT_PA10_9000151247	-4.31	1.2	0.882	0.318	-3.428	0	1,136.09	FAIL
SEMH_PA10_9000152353	-4.317	5.47	0.841	4.629	-3.476	0	1,136.38	
SEFT_PA10_9000228541	-4.495	1.202	0.789	0.413	-3.706	0	1,135.24	FAIL
SEMH_PA10_9000036748	-4.497	5.647	0.721	4.926	-3.776	0	1,133.21	
SEMH_PA10_9000036739	-4.94	5.99	1.028	4.962	-3.912	0	1,496.95	
SEFT_PA10_9000035326	-4.95	6	0.997	5.003	-3.953	0	1,493.83	
SEFT_PA10_9000035129	-5.19	7.46	1.008	6.452	-4.182	0	1,491.85	
SEMH_PA10_9000152405	-5.2	7.47	0.975	6.495	-4.225	0	1,489.44	
SEFT_PA10_9000151270	-5.2	7.47	0.922	6.548	-4.278	0	1,489.35	
SEMH_PA10_9000152863	-5.42	7.173	0.977	6.196	-4.443	0	1,489.87	
SEMH_PA10_9000037416	-5.7	14.22	0.931	13.289	-4.769	0	1,485.37	
SEMH_PA10_9000152867	-6.06	14.57	0.937	13.633	-5.123	0	1,478.43	
SEMH_PA10_9000154364	-6.42	10.272	0.91	9.362	-5.51	0	1,475.46	
SEMH_PA10_9000039703	-6.62	7.97	0.78	7.19	-5.84	0	1,475.08	
SEMH_PA10_9000230566	-7	8.84	0.792	8.048	-6.208	0	1,474.94	
SEMH_PA10_9000154353	-7.37	10.75	0.876	9.874	-6.494	0.467	1,492.54	

HGL Profile with Maximum Data of Links CDT-353,CDT-355,...,GM_PA10_9000039678L01



APPENDIX C
Existing Augmented Scenario Results

Long Section 1 Results - Existing Augmented Scenario

Year Model **2031**
Time Setting Base
Domain Map

Standard Run - Node Results

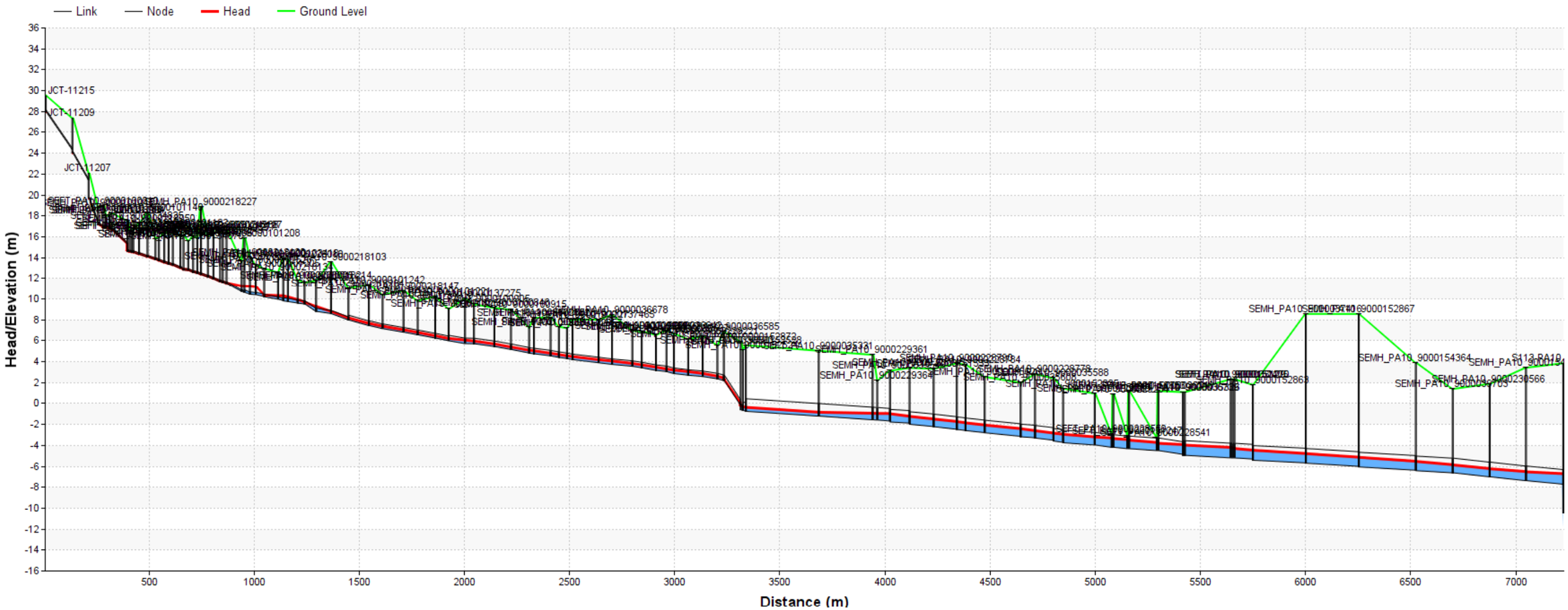
Allowable Depths in Accordance with GCCC Guidelines

Depth Below MH 1

Junction ID	Invert Elevation (m)	Full Depth (m)	Max. Depth (m)	Freeboard (m)	Head (m)	Max. Lateral Inflow (L/s)	Max. Total Inflow (L/s)	MH Depth Comment
JCT-11215	27.97	1.51	0	1.51	27.97	0	0	
JCT-11209	24.03	3.3	0	3.3	24.03	0	0	
JCT-11207	19.67	2.4	0	2.4	19.67	0	0.00	
SEMH_PA10_9000101045	17.18	1.54	0.028	1.512	17.208	1.122	1.12	
SEFT_PA10_9000100010	16.92	2	0.028	1.972	16.948	0	1.12	
SEMH_PA10_9000101065	16.85	1.14	0.032	1.108	16.882	0.039	1.36	
SEMH_PA10_9000218004	16.75	1.3	0.032	1.268	16.782	0.039	1.53	
SEMH_PA10_9000217997	16.67	1.54	0.029	1.511	16.699	0.156	1.685	
SEMH_PA10_9000134835	14.6	2.89	0.042	2.848	14.642	0	2.074	
SEFT_PA10_9000100040	14.56	2	0.041	1.959	14.601	0	2.074	
SEFT_PA10_9000217241	14.52	2	0.041	1.959	14.561	0	2.074	
SEMH_PA10_9000218041	14.49	2.26	0.041	2.219	14.531	0.039	2.113	
SEMH_PA10_9000218050	14.32	2.89	0.044	2.846	14.364	0.117	2.348	
SEMH_PA10_9000101140	14.07	4.19	0.046	4.144	14.116	0.159	2.507	
SEMH_PA10_9000101146	13.83	1.94	0.043	1.897	13.873	0.039	2.546	
SEMH_PA10_9000101155	13.69	2.23	0.045	2.185	13.735	0	2.546	
SEMH_PA10_9000101161	13.51	2.74	0.046	2.694	13.556	0	2.546	
SEMH_PA10_9000134858	13.39	3.11	0.046	3.064	13.436	0	2.546	
SEMH_PA10_9000101182	13.27	3.5	0.045	3.455	13.315	0	2.585	
SEMH_PA10_9000134748	12.99	2.98	0.04	2.94	13.03	0	2.585	
SEMH_PA10_9000101024	12.8	3.27	0.094	3.176	12.894	0	3.79	
SEMH_PA10_9000134870	12.78	2.79	0.052	2.738	12.832	0	3.79	
SEMH_PA10_9000101299	12.6	3.4	0.063	3.337	12.663	0.039	4.225	
SEMH_PA10_9000101296	12.5	3.32	0.055	3.265	12.555	0	4.225	
SEMH_PA10_9000218227	12.36	6.49	0.063	6.427	12.423	0	4.445	
SEMH_PA10_9000101249	12.15	3.89	0.06	3.83	12.21	0.039	4.484	
SEMH_PA10_9000134955	11.95	4.41	0.061	4.349	12.011	0	4.82	
SEMH_PA10_9000101277	11.68	4.72	0.067	4.653	11.747	0	4.82	
SEMH_PA10_9000134968	11.61	5.04	0.065	4.975	11.675	0.039	4.971	
SEMH_PA10_9000218197	11.49	5.11	0.058	5.052	11.548	0	4.971	
SEMH_PA10_9000218141	10.71	2.86	0.938	1.922	11.648	0	7.44	
SEMH_PA10_9000101208	10.62	5.24	0.886	4.354	11.506	0	6.594	
SEMH_PA10_9000218120	10.44	3.49	0.978	2.512	11.418	0	5.43	
SEMH_PA10_9000312526	10.4	2.84	0.791	2.049	11.191	0	62.08	
SEMH_PA10_9000101205	10.2	2.7	0.165	2.535	10.365	0	61.828	
SEMH_PA10_9000218134	9.96	2.57	0.35	2.22	10.31	0	61.814	
SEMH_PA10_9000103418	9.8	4.07	0.503	3.567	10.303	0	68.906	
SEMH_PA10_9000220010	9.74	4.08	0.448	3.632	10.188	0	69.978	
SEMH_PA10_9000220005	9.59	2.2	0.344	1.856	9.934	0	70.22	
SEMH_PA10_9000220016	9.51	2.05	0.175	1.875	9.685	0	70.22	
SEMH_PA10_9000218214	8.8	2.94	1.176	1.764	9.976	2.152	72.371	
SEMH_PA10_9000218103	8.58	4.98	0.23	4.75	8.81	0	72.413	
SEMH_PA10_9000218204	7.98	3.01	0.205	2.805	8.185	0	86.178	
SEMH_PA10_9000101242	7.45	3.88	0.218	3.662	7.668	0	87.312	
SEMH_PA10_9000101230	7.15	3.2	0.242	2.958	7.392	0	87.31	
SEMH_PA10_9000218147	6.81	3.93	0.238	3.692	7.048	0	87.31	
SEMH_PA10_9000134919	6.56	3.22	0.238	2.982	6.798	0	87.307	
SEMH_PA10_9000101221	6.25	3.92	0.231	3.689	6.481	0	87.307	
SEMH_PA10_9000218259	5.99	3	0.232	2.768	6.222	0	100.167	

Junction ID	Invert Elevation (m)	Full Depth (m)	Max. Depth (m)	Freeboard (m)	Head (m)	Max. Lateral Inflow (L/s)	Max. Total Inflow (L/s)	MH Depth Comment
SEMH_PA10_9000137275	5.726	4.244	0.336	3.908	6.062	0	101.987	
SEMH_PA10_9000100905	5.71	3.73	0.259	3.471	5.969	0	101.99	
SEMH_PA10_9000100846	5.44	3.65	0.258	3.392	5.698	0	114.61	
SEMH_PA10_9000100915	5.16	3.75	0.246	3.504	5.406	0	114.608	
SEMH_PA10_9000100938	4.8	2.44	0.302	2.138	5.102	0	114.608	
SEMH_PA10_9000102851	4.75	3.38	0.288	3.092	5.038	0	114.607	
SEMH_PA10_9000102845	4.54	3.65	0.269	3.381	4.809	0.757	115.364	
SEMH_PA10_9000102848	4.4	2.88	0.282	2.598	4.682	0	115.36	
SEMH_PA10_9000102857	4.29	2.88	0.272	2.608	4.562	0	115.36	
SEMH_PA10_9000102227	4.19	3.79	0.3	3.49	4.49	0	120.533	
SEMH_PA10_9000137465	3.89	4.08	0.303	3.777	4.193	0	120.533	
SEMH_PA10_9000036678	3.73	4.69	0.331	4.359	4.061	0	120.533	
SEMH_PA10_9000229232	3.55	3.35	0.284	3.066	3.834	0	122.236	
SEMH_PA10_9000035356	3.41	3.43	0.283	3.147	3.693	0	136.95	
SEMH_PA10_9000036665	3.16	3.36	0.323	3.037	3.483	0	136.95	
SEMH_PA10_9000036642	3.04	3.89	0.266	3.624	3.306	0	136.951	
SEMH_PA10_9000036637	2.86	3.77	0.333	3.437	3.193	0	136.951	
SEMH_PA10_9000036626	2.7	3.41	0.356	3.054	3.056	0	138.777	
SEMH_PA10_9000229221	2.57	3.83	0.305	3.525	2.875	0	138.777	
SEMH_PA10_9000036590	2.35	3.18	0.261	2.919	2.611	0	138.78	
SEMH_PA10_9000036585	2.19	4.6	0.159	4.441	2.349	0	138.78	
SEMH_PA10_9000152872	-0.601	6.482	0.409	6.073	-0.192	0	297.646	
SEMH_PA10_9000152524	-0.65	5.75	0.358	5.392	-0.292	0	297.633	
SEMH_PA10_9000152528	-0.745	6.265	0.389	5.876	-0.356	0	297.617	
SEFT_PA10_9000035331	-1.2	6.2	0.374	5.826	-0.826	0.055	297.647	
SEMH_PA10_9000229361	-1.55	6.16	0.622	5.538	-0.928	0	295.15	
SEMH_PA10_9000229364	-1.575	3.735	0.637	3.098	-0.938	0	362.44	
SEMH_PA10_9000035546	-1.766	4.859	0.812	4.047	-0.954	0	1,156.26	
SEMH_PA10_9000228745	-1.99	5.35	0.779	4.571	-1.211	0.774	1,150.95	
SEMH_PA10_9000151533	-2.22	5.5	0.753	4.747	-1.467	0.774	1,147.67	
SEMH_PA10_9000228790	-2.48	6.27	0.771	5.499	-1.709	0	1,145.95	
SEMH_PA10_9000228784	-2.59	6.26	0.759	5.501	-1.831	0	1,140.82	
SEMH_PA10_9000035628	-2.8	5.297	0.758	4.539	-2.042	0.774	1,139.32	
SEMH_PA10_9000035608	-3.18	5.132	0.791	4.341	-2.389	0	1,133.26	
SEMH_PA10_9000228778	-3.3	6.06	0.723	5.337	-2.577	0	1,129.41	
SEMH_PA10_9000035588	-3.59	5.971	0.776	5.195	-2.814	1.76	1,132.28	
SEMH_PA10_9000152335	-3.75	5.12	0.829	4.291	-2.921	0	1,128.15	
SEMH_PA10_9000153878	-3.41	7.41	0.596	6.814	-2.814	0	4.91	
SEMH_PA10_9000229239	-3.96	4.88	0.778	4.102	-3.182	0	1,125.13	
SEFT_PA10_9000228550	-4.18	1.2	0.892	0.308	-3.288	0	1,118.56	FAIL
SEMH_PA10_9000229254	-4.18	5.03	0.846	4.184	-3.334	0	1,123.92	
SEFT_PA10_9000151247	-4.31	1.2	0.875	0.325	-3.435	0	1,122.89	FAIL
SEMH_PA10_9000152353	-4.317	5.47	0.834	4.636	-3.483	0	1,123.09	
SEFT_PA10_9000228541	-4.495	1.202	0.782	0.42	-3.713	0	1,121.91	FAIL
SEMH_PA10_9000036748	-4.497	5.647	0.713	4.934	-3.784	0	1,119.84	
SEMH_PA10_9000036739	-4.94	5.99	1.022	4.968	-3.918	0	1,483.33	
SEFT_PA10_9000035326	-4.95	6	0.991	5.009	-3.959	0	1,480.16	
SEFT_PA10_9000035129	-5.19	7.46	1.003	6.457	-4.187	0	1,478.44	
SEMH_PA10_9000152405	-5.2	7.47	0.97	6.5	-4.23	0	1,476.81	
SEFT_PA10_9000151270	-5.2	7.47	0.918	6.552	-4.282	0	1,476.77	
SEMH_PA10_9000152863	-5.42	7.173	0.973	6.2	-4.447	0	1,477.84	
SEMH_PA10_9000037416	-5.7	14.22	0.929	13.291	-4.771	0	1,476.78	
SEMH_PA10_9000152867	-6.06	14.57	0.937	13.633	-5.123	0	1,475.67	
SEMH_PA10_9000154364	-6.42	10.272	0.909	9.363	-5.511	0	1,474.70	
SEMH_PA10_9000039703	-6.62	7.97	0.781	7.189	-5.839	0	1,474.58	
SEMH_PA10_9000230566	-7	8.84	0.792	8.048	-6.208	0	1,474.21	
SEMH_PA10_9000154353	-7.37	10.75	0.877	9.873	-6.493	0.467	1,492.22	

HGL Profile with Maximum Data of Links CDT-353,CDT-355,...,GM_PA10_9000039678L01



APPENDIX D
Developed Scenario Results

Long Section 1 Results - Developed Scenario

Year Model **2021**
Time Setting Base
Domain Map

Standard Run - Node Results

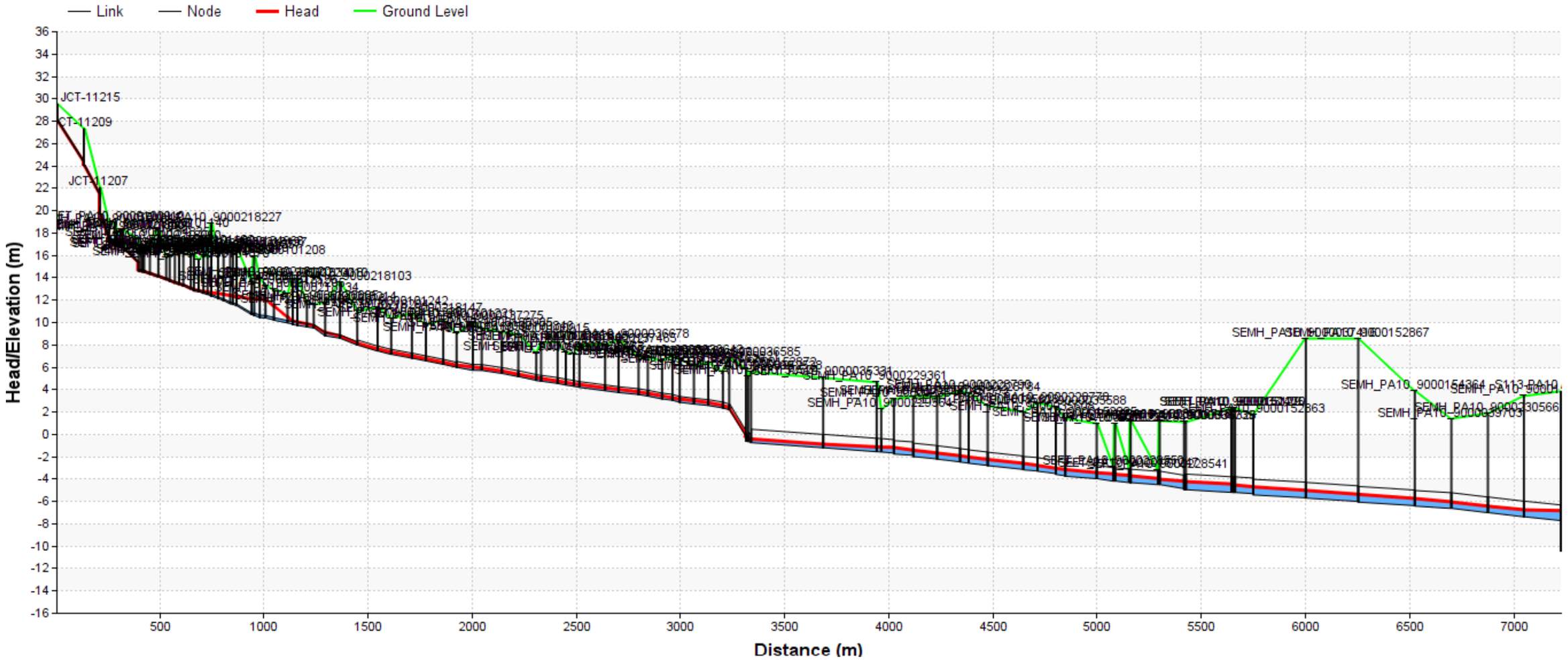
Allowable Depths in Accordance with GCCC Guidelines

Depth Below MH 1

Junction ID	Invert Elevation (m)	Full Depth (m)	Max. Depth (m)	Freeboard (m)	Head (m)	Max. Lateral Inflow (L/s)	Max. Total Inflow (L/s)	MH Depth Comment
JCT-11215	27.97	1.51	0.042	1.468	28.012	4.312	4.312	
JCT-11209	24.03	3.3	0.043	3.257	24.073	0	4.828	
JCT-11207	19.67	2.4	0.039	2.361	19.709	0	5.02	
SEMH_PA10_9000101045	17.18	1.54	0.06	1.48	17.24	0.039	5.06	
SEFT_PA10_9000100010	16.92	2	0.063	1.937	16.983	0	5.06	
SEMH_PA10_9000101065	16.85	1.14	0.067	1.073	16.917	0.039	5.30	
SEMH_PA10_9000218004	16.75	1.3	0.062	1.238	16.812	0.039	5.46	
SEMH_PA10_9000217997	16.67	1.54	0.054	1.486	16.724	0.157	5.621	
SEMH_PA10_9000134835	14.6	2.89	0.078	2.812	14.678	0	6.013	
SEFT_PA10_9000100040	14.56	2	0.076	1.924	14.636	0	6.013	
SEFT_PA10_9000217241	14.52	2	0.075	1.925	14.595	0	6.013	
SEMH_PA10_9000218041	14.49	2.26	0.074	2.186	14.564	0.039	6.053	
SEMH_PA10_9000218050	14.32	2.89	0.076	2.814	14.396	0.118	6.288	
SEMH_PA10_9000101140	14.07	4.19	0.078	4.112	14.148	0.158	6.446	
SEMH_PA10_9000101146	13.83	1.94	0.073	1.867	13.903	0.039	6.485	
SEMH_PA10_9000101155	13.69	2.23	0.076	2.154	13.766	0	6.485	
SEMH_PA10_9000101161	13.51	2.74	0.078	2.662	13.588	0	6.485	
SEMH_PA10_9000134858	13.39	3.11	0.078	3.032	13.468	0	6.485	
SEMH_PA10_9000101182	13.27	3.5	0.074	3.426	13.344	0	6.524	
SEMH_PA10_9000134748	12.99	2.98	0.065	2.915	13.055	0	6.524	
SEMH_PA10_9000101024	12.8	3.27	0.142	3.128	12.942	0	7.72	
SEMH_PA10_9000134870	12.78	2.79	0.079	2.711	12.859	0	7.73	
SEMH_PA10_9000101299	12.6	3.4	0.167	3.233	12.767	0.039	8.17	
SEMH_PA10_9000101296	12.5	3.32	0.408	2.912	12.908	0	8.514	
SEMH_PA10_9000218227	12.36	6.49	0.311	6.179	12.671	0	8.414	
SEMH_PA10_9000101249	12.15	3.89	0.485	3.405	12.635	0.039	8.499	
SEMH_PA10_9000134955	11.95	4.41	0.607	3.803	12.557	0	9.03	
SEMH_PA10_9000101277	11.68	4.72	0.763	3.957	12.443	0	8.85	
SEMH_PA10_9000134968	11.61	5.04	0.754	4.286	12.364	0.039	9.142	
SEMH_PA10_9000218197	11.49	5.11	0.883	4.227	12.373	0	9.074	
SEMH_PA10_9000218141	10.71	2.86	1.505	1.355	12.215	0	9.037	
SEMH_PA10_9000101208	10.62	5.24	1.562	3.678	12.182	0	9.204	
SEMH_PA10_9000218120	10.44	3.49	1.681	1.809	12.121	0	9.14	
SEMH_PA10_9000312526	10.4	2.84	1.7	1.14	12.1	0	55.24	
SEMH_PA10_9000101205	10.2	2.7	1.328	1.372	11.528	0	53.445	
SEMH_PA10_9000218134	9.96	2.57	0.567	2.003	10.527	0	53.457	
SEMH_PA10_9000103418	9.8	4.07	0.349	3.721	10.149	0	59.794	
SEMH_PA10_9000220010	9.74	4.08	0.314	3.766	10.054	0	61.178	
SEMH_PA10_9000220005	9.59	2.2	0.292	1.908	9.882	0	60.88	
SEMH_PA10_9000220016	9.51	2.05	0.16	1.89	9.67	0	60.85	
SEMH_PA10_9000218214	8.8	2.94	0.334	2.606	9.134	0	60.846	
SEMH_PA10_9000218103	8.58	4.98	0.199	4.781	8.779	0	60.847	
SEMH_PA10_9000218204	7.98	3.01	0.181	2.829	8.161	0	69.194	
SEMH_PA10_9000101242	7.45	3.88	0.193	3.687	7.643	0	70.313	
SEMH_PA10_9000101230	7.15	3.2	0.213	2.987	7.363	0	70.31	
SEMH_PA10_9000218147	6.81	3.93	0.21	3.72	7.02	0	70.30	
SEMH_PA10_9000134919	6.56	3.22	0.21	3.01	6.77	0	70.301	
SEMH_PA10_9000101221	6.25	3.92	0.203	3.717	6.453	0	70.301	
SEMH_PA10_9000218259	5.99	3	0.209	2.791	6.199	0	82.878	

Junction ID	Invert Elevation (m)	Full Depth (m)	Max. Depth (m)	Freeboard (m)	Head (m)	Max. Lateral Inflow (L/s)	Max. Total Inflow (L/s)	MH Depth Comment
SEMH_PA10_9000137275	5.726	4.244	0.304	3.94	6.03	0	84.609	
SEMH_PA10_9000100905	5.71	3.73	0.232	3.498	5.942	0	84.61	
SEMH_PA10_9000100846	5.44	3.65	0.234	3.416	5.674	0	96.93	
SEMH_PA10_9000100915	5.16	3.75	0.224	3.526	5.384	0	96.928	
SEMH_PA10_9000100938	4.8	2.44	0.273	2.167	5.073	0	96.928	
SEMH_PA10_9000102851	4.75	3.38	0.261	3.119	5.011	0	96.927	
SEMH_PA10_9000102845	4.54	3.65	0.243	3.407	4.783	0.641	97.568	
SEMH_PA10_9000102848	4.4	2.88	0.255	2.625	4.655	0	97.57	
SEMH_PA10_9000102857	4.29	2.88	0.245	2.635	4.535	0	97.57	
SEMH_PA10_9000102227	4.19	3.79	0.273	3.517	4.463	0	102.741	
SEMH_PA10_9000137465	3.89	4.08	0.273	3.807	4.163	0	102.741	
SEMH_PA10_9000036678	3.73	4.69	0.301	4.389	4.031	0	102.741	
SEMH_PA10_9000229232	3.55	3.35	0.258	3.092	3.808	0	104.443	
SEMH_PA10_9000035356	3.41	3.43	0.258	3.172	3.668	0	117.88	
SEMH_PA10_9000036665	3.16	3.36	0.296	3.064	3.456	0	117.88	
SEMH_PA10_9000036642	3.04	3.89	0.241	3.649	3.281	0	117.874	
SEMH_PA10_9000036637	2.86	3.77	0.3	3.47	3.16	0	117.874	
SEMH_PA10_9000036626	2.7	3.41	0.325	3.085	3.025	0	119.701	
SEMH_PA10_9000229221	2.57	3.83	0.279	3.551	2.849	0	119.7	
SEMH_PA10_9000036590	2.35	3.18	0.239	2.941	2.589	0	119.70	
SEMH_PA10_9000036585	2.19	4.6	0.147	4.453	2.337	0	119.70	
SEMH_PA10_9000152872	-0.601	6.482	0.338	6.144	-0.263	0	226.526	
SEMH_PA10_9000152524	-0.65	5.75	0.303	5.447	-0.347	0	226.524	
SEMH_PA10_9000152528	-0.745	6.265	0.337	5.928	-0.408	0	226.519	
SEFT_PA10_9000035331	-1.2	6.2	0.325	5.875	-0.875	0.018	226.759	
SEMH_PA10_9000229361	-1.55	6.16	0.43	5.73	-1.12	0	225.24	
SEMH_PA10_9000229364	-1.575	3.735	0.44	3.295	-1.135	0	263.90	
SEMH_PA10_9000035546	-1.766	4.859	0.611	4.248	-1.155	0	730.63	
SEMH_PA10_9000228745	-1.99	5.35	0.585	4.765	-1.405	0.762	729.05	
SEMH_PA10_9000151533	-2.22	5.5	0.562	4.938	-1.658	0.762	727.36	
SEMH_PA10_9000228790	-2.48	6.27	0.574	5.696	-1.906	0	726.19	
SEMH_PA10_9000228784	-2.59	6.26	0.568	5.692	-2.022	0	722.89	
SEMH_PA10_9000035628	-2.8	5.297	0.57	4.727	-2.23	0.762	722.64	
SEMH_PA10_9000035608	-3.18	5.132	0.598	4.534	-2.582	0	718.06	
SEMH_PA10_9000228778	-3.3	6.06	0.539	5.521	-2.761	0	720.21	
SEMH_PA10_9000035588	-3.59	5.971	0.567	5.404	-3.023	0	721.36	
SEMH_PA10_9000152335	-3.75	5.12	0.618	4.502	-3.132	0	718.66	
SEMH_PA10_9000153878	-3.41	7.41	0.388	7.022	-3.022	0	3.10	
SEMH_PA10_9000229239	-3.96	4.88	0.547	4.333	-3.413	0	716.32	
SEFT_PA10_9000228550	-4.18	1.2	0.656	0.544	-3.524	0	709.86	FAIL
SEMH_PA10_9000229254	-4.18	5.03	0.614	4.416	-3.566	0	711.61	
SEFT_PA10_9000151247	-4.31	1.2	0.652	0.548	-3.658	0	710.35	FAIL
SEMH_PA10_9000152353	-4.317	5.47	0.619	4.851	-3.698	0	710.08	
SEFT_PA10_9000228541	-4.495	1.202	0.559	0.643	-3.936	0	708.94	FAIL
SEMH_PA10_9000036748	-4.497	5.647	0.494	5.153	-4.003	0	706.35	
SEMH_PA10_9000036739	-4.94	5.99	0.759	5.231	-4.181	0	969.25	
SEFT_PA10_9000035326	-4.95	6	0.733	5.267	-4.217	0	959.00	
SEFT_PA10_9000035129	-5.19	7.46	0.758	6.702	-4.432	0	954.06	
SEMH_PA10_9000152405	-5.2	7.47	0.733	6.737	-4.467	0	946.79	
SEFT_PA10_9000151270	-5.2	7.47	0.687	6.783	-4.513	0	946.63	
SEMH_PA10_9000152863	-5.42	7.173	0.736	6.437	-4.684	0	946.79	
SEMH_PA10_9000037416	-5.7	14.22	0.701	13.519	-4.999	0	943.32	
SEMH_PA10_9000152867	-6.06	14.57	0.709	13.861	-5.351	0	940.63	
SEMH_PA10_9000154364	-6.42	10.272	0.697	9.575	-5.723	0	937.66	
SEMH_PA10_9000039703	-6.62	7.97	0.592	7.378	-6.028	0	936.39	
SEMH_PA10_9000230566	-7	8.84	0.592	8.248	-6.408	0	934.63	
SEMH_PA10_9000154353	-7.37	10.75	0.639	10.111	-6.731	0.38	936.05	

HGL Profile with Maximum Data of Links CDT-353,CDT-355,...,GM_PA10_9000039678L01



Long Section 1 Results - Developed Scenario

Year Model **2026**
Time Setting Base
Domain Map

Standard Run - Node Results

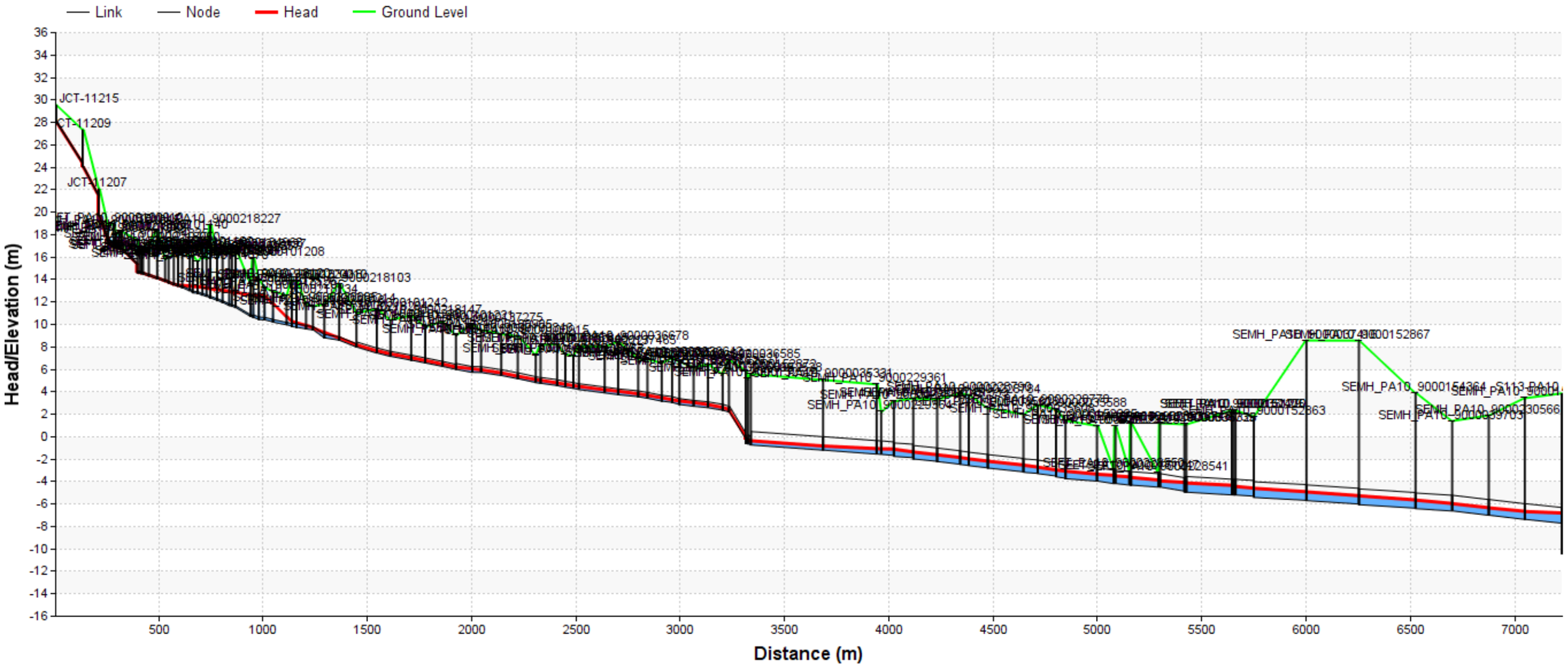
Allowable Depths in Accordance with GCCC Guidelines

Depth Below MH 1

Junction ID	Invert Elevation (m)	Full Depth (m)	Max. Depth (m)	Freeboard (m)	Head (m)	Max. Lateral Inflow (L/s)	Max. Total Inflow (L/s)	MH Depth Comment
JCT-11215	27.97	1.51	0.042	1.468	1.468	4.312	4.312	
JCT-11209	24.03	3.3	0.043	3.257	3.257	0	4.828	
JCT-11207	19.67	2.4	0.039	2.361	2.361	0	5.02	
SEMH_PA10_9000101045	17.18	1.54	0.06	1.48	1.48	0.039	5.06	
SEFT_PA10_9000100010	16.92	2	0.063	1.937	1.937	0	5.06	
SEMH_PA10_9000101065	16.85	1.14	0.067	1.073	1.073	0.039	5.30	
SEMH_PA10_9000218004	16.75	1.3	0.062	1.238	1.238	0.039	5.46	
SEMH_PA10_9000217997	16.67	1.54	0.054	1.486	1.486	0.156	5.62	
SEMH_PA10_9000134835	14.6	2.89	0.078	2.812	2.812	0	6.012	
SEFT_PA10_9000100040	14.56	2	0.076	1.924	1.924	0	6.012	
SEFT_PA10_9000217241	14.52	2	0.075	1.925	1.925	0	6.012	
SEMH_PA10_9000218041	14.49	2.26	0.074	2.186	2.186	0.039	6.051	
SEMH_PA10_9000218050	14.32	2.89	0.076	2.814	2.814	0.117	6.285	
SEMH_PA10_9000101140	14.07	4.19	0.078	4.112	4.112	0.159	6.444	
SEMH_PA10_9000101146	13.83	1.94	0.073	1.867	1.867	0.039	6.483	
SEMH_PA10_9000101155	13.69	2.23	0.076	2.154	2.154	0	6.483	
SEMH_PA10_9000101161	13.51	2.74	0.078	2.662	2.662	0	6.483	
SEMH_PA10_9000134858	13.39	3.11	0.109	3.001	3.001	0	6.485	
SEMH_PA10_9000101182	13.27	3.5	0.202	3.298	3.298	0	6.534	
SEMH_PA10_9000134748	12.99	2.98	0.452	2.528	2.528	0	6.579	
SEMH_PA10_9000101024	12.8	3.27	0.585	2.685	2.685	0	7.91	
SEMH_PA10_9000134870	12.78	2.79	0.626	2.164	2.164	0	7.80	
SEMH_PA10_9000101299	12.6	3.4	0.771	2.629	2.629	0.039	8.231	
SEMH_PA10_9000101296	12.5	3.32	0.793	2.527	2.527	0	8.342	
SEMH_PA10_9000218227	12.36	6.49	0.823	5.667	5.667	0	8.553	
SEMH_PA10_9000101249	12.15	3.89	0.994	2.896	2.896	0.039	8.547	
SEMH_PA10_9000134955	11.95	4.41	1.118	3.292	3.292	0	8.98	
SEMH_PA10_9000101277	11.68	4.72	1.269	3.451	3.451	0	8.92	
SEMH_PA10_9000134968	11.61	5.04	1.264	3.776	3.776	0.039	9.539	
SEMH_PA10_9000218197	11.49	5.11	1.372	3.738	3.738	0	9.047	
SEMH_PA10_9000218141	10.71	2.86	2.034	0.826	0.826	0	9.296	FAIL
SEMH_PA10_9000101208	10.62	5.24	2.082	3.158	3.158	0	9.319	
SEMH_PA10_9000218120	10.44	3.49	2.205	1.285	1.285	0	9.16	
SEMH_PA10_9000312526	10.4	2.84	2.223	0.617	0.617	0	59.92	FAIL
SEMH_PA10_9000101205	10.2	2.7	1.698	1.002	1.002	0	58.743	
SEMH_PA10_9000218134	9.96	2.57	0.785	1.785	1.785	0	58.714	
SEMH_PA10_9000103418	9.8	4.07	0.511	3.559	3.559	0	65.904	
SEMH_PA10_9000220010	9.74	4.08	0.406	3.674	3.674	0	66.973	
SEMH_PA10_9000220005	9.59	2.2	0.326	1.874	1.874	0	66.95	
SEMH_PA10_9000220016	9.51	2.05	0.17	1.88	1.88	0	66.93	
SEMH_PA10_9000218214	8.8	2.94	2.169	0.771	0.771	2.152	69.409	FAIL
SEMH_PA10_9000218103	8.58	4.98	0.221	4.759	4.759	0	69.824	
SEMH_PA10_9000218204	7.98	3.01	0.195	2.815	2.815	0	79.36	
SEMH_PA10_9000101242	7.45	3.88	0.208	3.672	3.672	0	80.487	
SEMH_PA10_9000101230	7.15	3.2	0.231	2.969	2.969	0	80.49	
SEMH_PA10_9000218147	6.81	3.93	0.227	3.703	3.703	0	80.48	
SEMH_PA10_9000134919	6.56	3.22	0.227	2.993	2.993	0	80.484	
SEMH_PA10_9000101221	6.25	3.92	0.22	3.7	3.7	0	80.484	
SEMH_PA10_9000218259	5.99	3	0.222	2.778	2.778	0	93.088	

Junction ID	Invert Elevation (m)	Full Depth (m)	Max. Depth (m)	Freeboard (m)	Head (m)	Max. Lateral Inflow (L/s)	Max. Total Inflow (L/s)	MH Depth Comment
SEMH_PA10_9000137275	5.726	4.244	0.323	3.921	3.921	0	94.901	
SEMH_PA10_9000100905	5.71	3.73	0.248	3.482	3.482	0	94.90	
SEMH_PA10_9000100846	5.44	3.65	0.248	3.402	3.402	0	107.38	
SEMH_PA10_9000100915	5.16	3.75	0.237	3.513	3.513	0	107.378	
SEMH_PA10_9000100938	4.8	2.44	0.29	2.15	2.15	0	107.378	
SEMH_PA10_9000102851	4.75	3.38	0.277	3.103	3.103	0	107.377	
SEMH_PA10_9000102845	4.54	3.65	0.258	3.392	3.392	0.699	108.076	
SEMH_PA10_9000102848	4.4	2.88	0.271	2.609	2.609	0	108.08	
SEMH_PA10_9000102857	4.29	2.88	0.261	2.619	2.619	0	108.08	
SEMH_PA10_9000102227	4.19	3.79	0.289	3.501	3.501	0	113.24	
SEMH_PA10_9000137465	3.89	4.08	0.29	3.79	3.79	0	113.24	
SEMH_PA10_9000036678	3.73	4.69	0.319	4.371	4.371	0	113.239	
SEMH_PA10_9000229232	3.55	3.35	0.273	3.077	3.077	0	114.94	
SEMH_PA10_9000035356	3.41	3.43	0.274	3.156	3.156	0	129.64	
SEMH_PA10_9000036665	3.16	3.36	0.313	3.047	3.047	0	129.64	
SEMH_PA10_9000036642	3.04	3.89	0.256	3.634	3.634	0	129.642	
SEMH_PA10_9000036637	2.86	3.77	0.32	3.45	3.45	0	129.642	
SEMH_PA10_9000036626	2.7	3.41	0.344	3.066	3.066	0	131.465	
SEMH_PA10_9000229221	2.57	3.83	0.295	3.535	3.535	0	131.464	
SEMH_PA10_9000036590	2.35	3.18	0.253	2.927	2.927	0	131.46	
SEMH_PA10_9000036585	2.19	4.6	0.154	4.446	4.446	0	131.46	
SEMH_PA10_9000152872	-0.601	6.482	0.402	6.08	6.08	0	289.824	
SEMH_PA10_9000152524	-0.65	5.75	0.352	5.398	5.398	0	289.818	
SEMH_PA10_9000152528	-0.745	6.265	0.384	5.881	5.881	0	289.811	
SEFT_PA10_9000035331	-1.2	6.2	0.369	5.831	5.831	0.036	290.141	
SEMH_PA10_9000229361	-1.55	6.16	0.488	5.672	5.672	0	287.34	
SEMH_PA10_9000229364	-1.575	3.735	0.498	3.237	3.237	0	294.84	
SEMH_PA10_9000035546	-1.766	4.859	0.667	4.192	4.192	0	841.49	
SEMH_PA10_9000228745	-1.99	5.35	0.639	4.711	4.711	0.767	842.11	
SEMH_PA10_9000151533	-2.22	5.5	0.617	4.883	4.883	0.767	844.29	
SEMH_PA10_9000228790	-2.48	6.27	0.633	5.637	5.637	0	844.25	
SEMH_PA10_9000228784	-2.59	6.26	0.626	5.634	5.634	0	844.10	
SEMH_PA10_9000035628	-2.8	5.297	0.627	4.67	4.67	0.767	844.80	
SEMH_PA10_9000035608	-3.18	5.132	0.66	4.472	4.472	0	844.64	
SEMH_PA10_9000228778	-3.3	6.06	0.598	5.462	5.462	0	846.92	
SEMH_PA10_9000035588	-3.59	5.971	0.635	5.336	5.336	0.9	850.07	
SEMH_PA10_9000152335	-3.75	5.12	0.687	4.433	4.433	0	849.96	
SEMH_PA10_9000153878	-3.41	7.41	0.455	6.955	6.955	0	4.53	
SEMH_PA10_9000229239	-3.96	4.88	0.625	4.255	4.255	0	849.79	
SEFT_PA10_9000228550	-4.18	1.2	0.739	0.461	0.461	0	849.37	FAIL
SEMH_PA10_9000229254	-4.18	5.03	0.695	4.335	4.335	0	853.57	
SEFT_PA10_9000151247	-4.31	1.2	0.731	0.469	0.469	0	853.49	FAIL
SEMH_PA10_9000152353	-4.317	5.47	0.694	4.776	4.776	0	854.77	
SEFT_PA10_9000228541	-4.495	1.202	0.637	0.565	0.565	0	854.68	FAIL
SEMH_PA10_9000036748	-4.497	5.647	0.57	5.077	5.077	0	854.48	
SEMH_PA10_9000036739	-4.94	5.99	0.864	5.126	5.126	0	1,160.84	
SEFT_PA10_9000035326	-4.95	6	0.836	5.164	5.164	0	1,160.43	
SEFT_PA10_9000035129	-5.19	7.46	0.859	6.601	6.601	0	1,160.14	
SEMH_PA10_9000152405	-5.2	7.47	0.83	6.64	6.64	0	1,159.83	
SEFT_PA10_9000151270	-5.2	7.47	0.781	6.689	6.689	0	1,159.82	
SEMH_PA10_9000152863	-5.42	7.173	0.833	6.34	6.34	0	1,161.20	
SEMH_PA10_9000037416	-5.7	14.22	0.795	13.425	13.425	0	1,160.97	
SEMH_PA10_9000152867	-6.06	14.57	0.804	13.766	13.766	0	1,160.74	
SEMH_PA10_9000154364	-6.42	10.272	0.787	9.485	9.485	0	1,160.55	
SEMH_PA10_9000039703	-6.62	7.97	0.672	7.298	7.298	0	1,160.50	
SEMH_PA10_9000230566	-7	8.84	0.676	8.164	8.164	0	1,160.87	
SEMH_PA10_9000154353	-7.37	10.75	0.725	10.025	10.025	0.423	1,166.03	

HGL Profile with Maximum Data of Links CDT-353,CDT-355,...,GM_PA10_9000039678L01



Long Section 1 Results - Developed Scenario

Year Model **2031**
Time Setting Base
Domain Map

Standard Run - Node Results

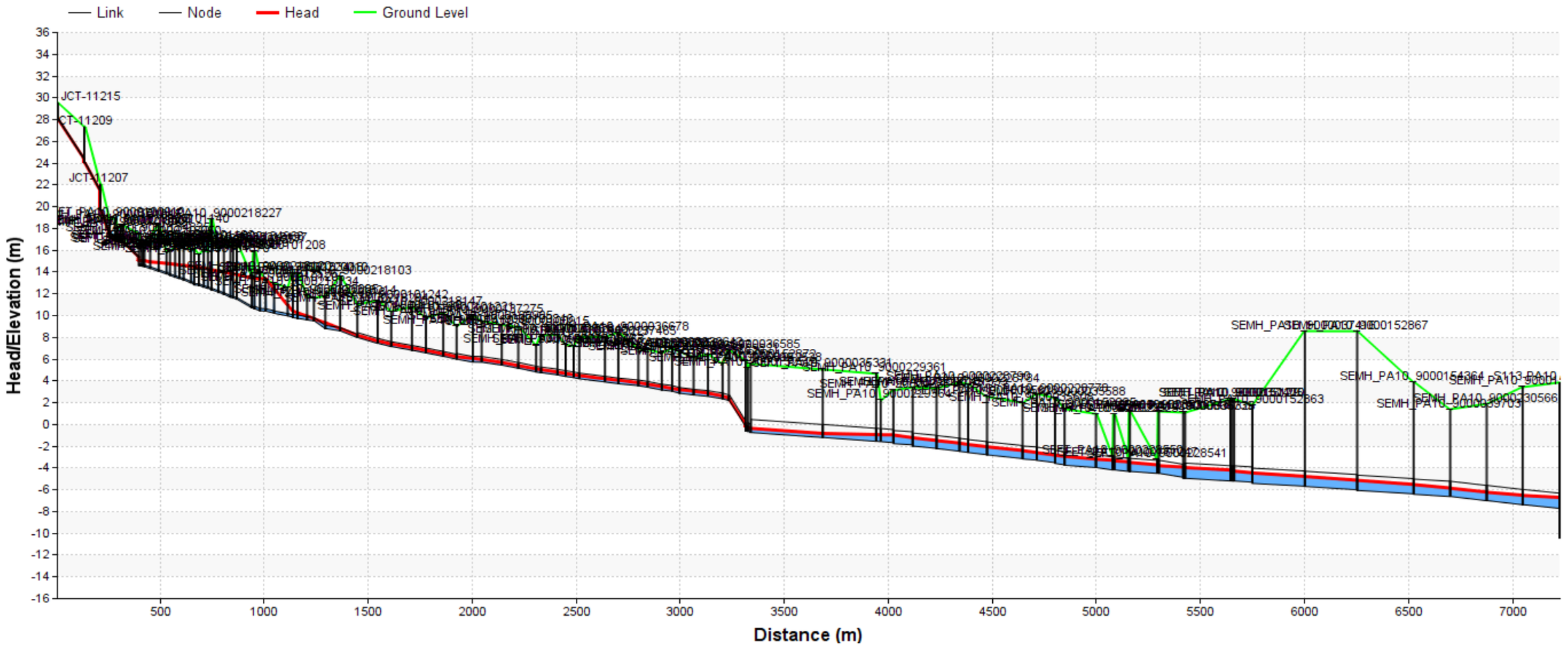
Allowable Depths in Accordance with GCCC Guidelines

Depth Below MH 1

Junction ID	Invert Elevation (m)	Full Depth (m)	Max. Depth (m)	Freeboard (m)	Head (m)	Max. Lateral Inflow (L/s)	Max. Total Inflow (L/s)	MH Depth Comment
JCT-11215	27.97	1.51	0.042	1.468	28.012	4.312	4.312	
JCT-11209	24.03	3.3	0.043	3.257	24.073	0	4.828	
JCT-11207	19.67	2.4	0.039	2.361	19.709	0	5.02	
SEMH_PA10_9000101045	17.18	1.54	0.067	1.473	17.247	1.122	6.15	
SEFT_PA10_9000100010	16.92	2	0.071	1.929	16.991	0	6.15	
SEMH_PA10_9000101065	16.85	1.14	0.074	1.066	16.924	0.039	6.38	
SEMH_PA10_9000218004	16.75	1.3	0.069	1.231	16.819	0.039	6.55	
SEMH_PA10_9000217997	16.67	1.54	0.06	1.48	16.73	0.156	6.704	
SEMH_PA10_9000134835	14.6	2.89	0.43	2.46	15.03	0	7.096	
SEFT_PA10_9000100040	14.56	2	0.509	1.491	15.069	0	7.31	
SEFT_PA10_9000217241	14.52	2	0.559	1.441	15.079	0	7.286	
SEMH_PA10_9000218041	14.49	2.26	0.569	1.691	15.059	0.039	7.315	
SEMH_PA10_9000218050	14.32	2.89	0.612	2.278	14.932	0.117	7.457	
SEMH_PA10_9000101140	14.07	4.19	0.83	3.36	14.9	0.159	7.64	
SEMH_PA10_9000101146	13.83	1.94	0.972	0.968	14.823	0.039	7.755	FAIL
SEMH_PA10_9000101155	13.69	2.23	1.1	1.13	14.79	0	7.809	
SEMH_PA10_9000101161	13.51	2.74	1.224	1.516	14.734	0	7.697	
SEMH_PA10_9000134858	13.39	3.11	1.297	1.813	14.687	0	7.687	
SEMH_PA10_9000101182	13.27	3.5	1.369	2.131	14.639	0	7.747	
SEMH_PA10_9000134748	12.99	2.98	1.591	1.389	14.581	0	7.702	
SEMH_PA10_9000101024	12.8	3.27	1.748	1.522	14.548	0	9.07	
SEMH_PA10_9000134870	12.78	2.79	1.679	1.111	14.459	0	8.93	
SEMH_PA10_9000101299	12.6	3.4	1.782	1.618	14.382	0.039	9.383	
SEMH_PA10_9000101296	12.5	3.32	1.824	1.496	14.324	0	9.421	
SEMH_PA10_9000218227	12.36	6.49	1.901	4.589	14.261	0	9.647	
SEMH_PA10_9000101249	12.15	3.89	1.982	1.908	14.132	0.039	9.74	
SEMH_PA10_9000134955	11.95	4.41	2.089	2.321	14.039	0	9.99	
SEMH_PA10_9000101277	11.68	4.72	2.241	2.479	13.921	0	10.01	
SEMH_PA10_9000134968	11.61	5.04	2.254	2.786	13.864	0.039	10.755	
SEMH_PA10_9000218197	11.49	5.11	2.319	2.791	13.809	0	10.109	
SEMH_PA10_9000218141	10.71	2.86	2.806	0.054	13.516	0	10.747	FAIL
SEMH_PA10_9000101208	10.62	5.24	2.846	2.394	13.466	0	10.391	
SEMH_PA10_9000218120	10.44	3.49	3.001	0.489	13.441	0	10.22	FAIL
SEMH_PA10_9000312526	10.4	2.84	3.052	-0.212	13.452	0	68.37	FAIL
SEMH_PA10_9000101205	10.2	2.7	2.365	0.335	12.565	0	67.001	FAIL
SEMH_PA10_9000218134	9.96	2.57	1.051	1.519	11.011	0	66.996	
SEMH_PA10_9000103418	9.8	4.07	0.658	3.412	10.458	0	74.184	
SEMH_PA10_9000220010	9.74	4.08	0.516	3.564	10.256	0	75.228	
SEMH_PA10_9000220005	9.59	2.2	0.374	1.826	9.964	0	75.27	
SEMH_PA10_9000220016	9.51	2.05	0.193	1.857	9.703	0	75.26	
SEMH_PA10_9000218214	8.8	2.94	0.702	2.238	9.502	2.152	77.43	
SEMH_PA10_9000218103	8.58	4.98	0.247	4.733	8.827	0	77.428	
SEMH_PA10_9000218204	7.98	3.01	0.212	2.798	8.192	0	91.202	
SEMH_PA10_9000101242	7.45	3.88	0.226	3.654	7.676	0	92.336	
SEMH_PA10_9000101230	7.15	3.2	0.251	2.949	7.401	0	92.34	
SEMH_PA10_9000218147	6.81	3.93	0.247	3.683	7.057	0	92.33	
SEMH_PA10_9000134919	6.56	3.22	0.246	2.974	6.806	0	92.333	
SEMH_PA10_9000101221	6.25	3.92	0.239	3.681	6.489	0	92.333	
SEMH_PA10_9000218259	5.99	3	0.238	2.762	6.228	0	105.192	

Junction ID	Invert Elevation (m)	Full Depth (m)	Max. Depth (m)	Freeboard (m)	Head (m)	Max. Lateral Inflow (L/s)	Max. Total Inflow (L/s)	MH Depth Comment
SEMH_PA10_9000137275	5.726	4.244	0.345	3.899	6.071	0	107.012	
SEMH_PA10_9000100905	5.71	3.73	0.266	3.464	5.976	0	107.01	
SEMH_PA10_9000100846	5.44	3.65	0.265	3.385	5.705	0	119.63	
SEMH_PA10_9000100915	5.16	3.75	0.252	3.498	5.412	0	119.634	
SEMH_PA10_9000100938	4.8	2.44	0.31	2.13	5.11	0	119.633	
SEMH_PA10_9000102851	4.75	3.38	0.296	3.084	5.046	0	119.632	
SEMH_PA10_9000102845	4.54	3.65	0.276	3.374	4.816	0.757	120.389	
SEMH_PA10_9000102848	4.4	2.88	0.29	2.59	4.69	0	120.39	
SEMH_PA10_9000102857	4.29	2.88	0.28	2.6	4.57	0	120.39	
SEMH_PA10_9000102227	4.19	3.79	0.308	3.482	4.498	0	125.558	
SEMH_PA10_9000137465	3.89	4.08	0.311	3.769	4.201	0	125.558	
SEMH_PA10_9000036678	3.73	4.69	0.34	4.35	4.07	0	125.558	
SEMH_PA10_9000229232	3.55	3.35	0.291	3.059	3.841	0	127.26	
SEMH_PA10_9000035356	3.41	3.43	0.29	3.14	3.7	0	141.98	
SEMH_PA10_9000036665	3.16	3.36	0.33	3.03	3.49	0	141.98	
SEMH_PA10_9000036642	3.04	3.89	0.273	3.617	3.313	0	141.975	
SEMH_PA10_9000036637	2.86	3.77	0.341	3.429	3.201	0	141.975	
SEMH_PA10_9000036626	2.7	3.41	0.364	3.046	3.064	0	143.801	
SEMH_PA10_9000229221	2.57	3.83	0.312	3.518	2.882	0	143.8	
SEMH_PA10_9000036590	2.35	3.18	0.267	2.913	2.617	0	143.80	
SEMH_PA10_9000036585	2.19	4.6	0.162	4.438	2.352	0	143.80	
SEMH_PA10_9000152872	-0.601	6.482	0.415	6.067	-0.186	0	302.686	
SEMH_PA10_9000152524	-0.65	5.75	0.362	5.388	-0.288	0	302.677	
SEMH_PA10_9000152528	-0.745	6.265	0.392	5.873	-0.353	0	302.666	
SEFT_PA10_9000035331	-1.2	6.2	0.377	5.823	-0.823	0.055	302.726	
SEMH_PA10_9000229361	-1.55	6.16	0.622	5.538	-0.928	0	300.27	
SEMH_PA10_9000229364	-1.575	3.735	0.638	3.097	-0.937	0	361.86	
SEMH_PA10_9000035546	-1.766	4.859	0.815	4.044	-0.951	0	1,162.67	
SEMH_PA10_9000228745	-1.99	5.35	0.782	4.568	-1.208	0.774	1,157.13	
SEMH_PA10_9000151533	-2.22	5.5	0.756	4.744	-1.464	0.774	1,153.55	
SEMH_PA10_9000228790	-2.48	6.27	0.774	5.496	-1.706	0	1,151.74	
SEMH_PA10_9000228784	-2.59	6.26	0.761	5.499	-1.829	0	1,146.40	
SEMH_PA10_9000035628	-2.8	5.297	0.761	4.536	-2.039	0.774	1,144.84	
SEMH_PA10_9000035608	-3.18	5.132	0.794	4.338	-2.386	0	1,138.48	
SEMH_PA10_9000228778	-3.3	6.06	0.727	5.333	-2.573	0	1,134.49	
SEMH_PA10_9000035588	-3.59	5.971	0.78	5.191	-2.81	1.76	1,137.36	
SEMH_PA10_9000152335	-3.75	5.12	0.835	4.285	-2.915	0	1,134.30	
SEMH_PA10_9000153878	-3.41	7.41	0.601	6.809	-2.809	0	5.13	
SEMH_PA10_9000229239	-3.96	4.88	0.785	4.095	-3.175	0	1,132.32	
SEFT_PA10_9000228550	-4.18	1.2	0.899	0.301	-3.281	0	1,128.12	FAIL
SEMH_PA10_9000229254	-4.18	5.03	0.854	4.176	-3.326	0	1,134.06	
SEFT_PA10_9000151247	-4.31	1.2	0.881	0.319	-3.429	0	1,133.40	FAIL
SEMH_PA10_9000152353	-4.317	5.47	0.841	4.629	-3.476	0	1,133.95	
SEFT_PA10_9000228541	-4.495	1.202	0.79	0.412	-3.705	0	1,133.11	FAIL
SEMH_PA10_9000036748	-4.497	5.647	0.722	4.925	-3.775	0	1,131.54	
SEMH_PA10_9000036739	-4.94	5.99	1.03	4.96	-3.91	0	1,497.86	
SEFT_PA10_9000035326	-4.95	6	0.999	5.001	-3.951	0	1,495.55	
SEFT_PA10_9000035129	-5.19	7.46	1.01	6.45	-4.18	0	1,494.11	
SEMH_PA10_9000152405	-5.2	7.47	0.977	6.493	-4.223	0	1,492.27	
SEFT_PA10_9000151270	-5.2	7.47	0.925	6.545	-4.275	0	1,492.22	
SEMH_PA10_9000152863	-5.42	7.173	0.98	6.193	-4.44	0	1,493.24	
SEMH_PA10_9000037416	-5.7	14.22	0.936	13.284	-4.764	0	1,492.00	
SEMH_PA10_9000152867	-6.06	14.57	0.943	13.627	-5.117	0	1,490.67	
SEMH_PA10_9000154364	-6.42	10.272	0.915	9.357	-5.505	0	1,489.54	
SEMH_PA10_9000039703	-6.62	7.97	0.786	7.184	-5.834	0	1,489.36	
SEMH_PA10_9000230566	-7	8.84	0.796	8.044	-6.204	0	1,487.60	
SEMH_PA10_9000154353	-7.37	10.75	0.878	9.872	-6.492	0.467	1,506.19	

HGL Profile with Maximum Data of Links CDT-353,CDT-355,...,GM_PA10_9000039678L01



APPENDIX E
Developed Augmented Scenario Results

Long Section 1 Results - Developed Augmented Scenario

Year Model **2026**
Time Setting Base
Domain Map

Standard Run - Node Results

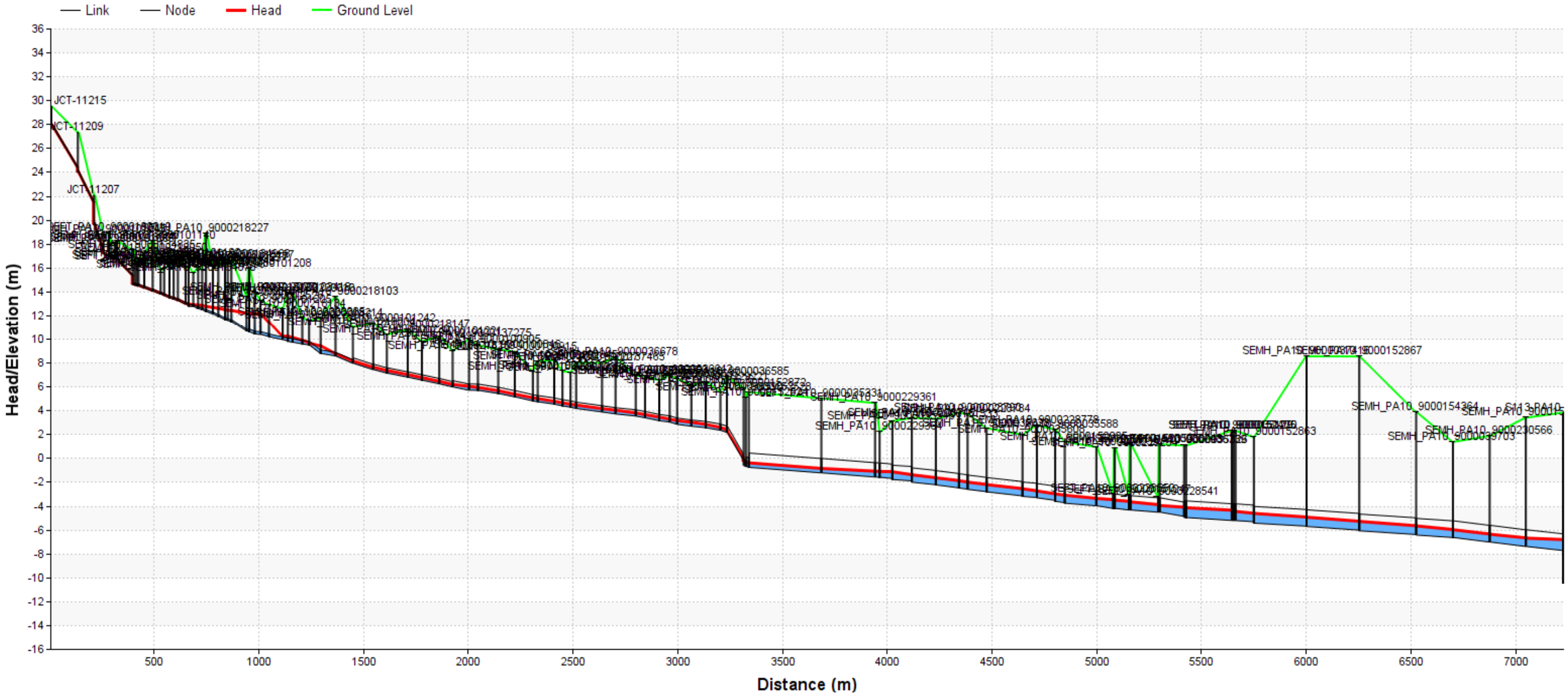
Allowable Depths in Accordance with GCCC Guidelines

Depth Below MH 1

Junction ID	Invert Elevation (m)	Full Depth (m)	Max. Depth (m)	Freeboard (m)	Head (m)	Max. Lateral Inflow (L/s)	Max. Total Inflow (L/s)	MH Depth Comment
JCT-11215	27.97	1.51	0.042	1.468	28.012	4.312	4.312	
JCT-11209	24.03	3.3	0.043	3.257	24.073	0	4.828	
JCT-11207	19.67	2.4	0.039	2.361	19.709	0	5.02	
SEMH_PA10_9000101045	17.18	1.54	0.06	1.48	17.24	0.039	5.06	
SEFT_PA10_9000100010	16.92	2	0.063	1.937	16.983	0	5.06	
SEMH_PA10_9000101065	16.85	1.14	0.067	1.073	16.917	0.039	5.30	
SEMH_PA10_9000218004	16.75	1.3	0.062	1.238	16.812	0.039	5.46	
SEMH_PA10_9000217997	16.67	1.54	0.054	1.486	16.724	0.156	5.62	
SEMH_PA10_9000134835	14.6	2.89	0.078	2.812	14.678	0	6.012	
SEFT_PA10_9000100040	14.56	2	0.076	1.924	14.636	0	6.012	
SEFT_PA10_9000217241	14.52	2	0.075	1.925	14.595	0	6.012	
SEMH_PA10_9000218041	14.49	2.26	0.074	2.186	14.564	0.039	6.051	
SEMH_PA10_9000218050	14.32	2.89	0.076	2.814	14.396	0.117	6.285	
SEMH_PA10_9000101140	14.07	4.19	0.078	4.112	14.148	0.159	6.444	
SEMH_PA10_9000101146	13.83	1.94	0.073	1.867	13.903	0.039	6.483	
SEMH_PA10_9000101155	13.69	2.23	0.076	2.154	13.766	0	6.483	
SEMH_PA10_9000101161	13.51	2.74	0.078	2.662	13.588	0	6.483	
SEMH_PA10_9000134858	13.39	3.11	0.078	3.032	13.468	0	6.483	
SEMH_PA10_9000101182	13.27	3.5	0.075	3.425	13.345	0	6.522	
SEMH_PA10_9000134748	12.99	2.98	0.065	2.915	13.055	0	6.522	
SEMH_PA10_9000101024	12.8	3.27	0.188	3.082	12.988	0	7.73	
SEMH_PA10_9000134870	12.78	2.79	0.156	2.634	12.936	0	7.83	
SEMH_PA10_9000101299	12.6	3.4	0.309	3.091	12.909	0.039	8.283	
SEMH_PA10_9000101296	12.5	3.32	0.382	2.938	12.882	0	8.302	
SEMH_PA10_9000218227	12.36	6.49	0.423	6.067	12.783	0	8.516	
SEMH_PA10_9000101249	12.15	3.89	0.598	3.292	12.748	0.039	8.563	
SEMH_PA10_9000134955	11.95	4.41	0.734	3.676	12.684	0	8.90	
SEMH_PA10_9000101277	11.68	4.72	0.868	3.852	12.548	0	8.87	
SEMH_PA10_9000134968	11.61	5.04	0.861	4.179	12.471	0.039	9.235	
SEMH_PA10_9000218197	11.49	5.11	0.97	4.14	12.46	0	9.013	
SEMH_PA10_9000218141	10.71	2.86	1.508	1.352	13.801	0	10.64	
SEMH_PA10_9000101208	10.62	5.24	1.941	3.299	12.561	0	9.148	
SEMH_PA10_9000218120	10.44	3.49	1.754	1.736	12.194	0	9.16	
SEMH_PA10_9000312526	10.4	2.84	1.77	1.07	12.17	0	60.16	
SEMH_PA10_9000101205	10.2	2.7	1.278	1.422	11.478	0	58.737	
SEMH_PA10_9000218134	9.96	2.57	0.297	2.273	10.257	0	58.717	
SEMH_PA10_9000103418	9.8	4.07	0.45	3.62	10.25	0	65.683	
SEMH_PA10_9000220010	9.74	4.08	0.406	3.674	10.146	0	66.694	
SEMH_PA10_9000220005	9.59	2.2	0.326	1.874	9.916	0	66.92	
SEMH_PA10_9000220016	9.51	2.05	0.17	1.88	9.68	0	66.92	
SEMH_PA10_9000218214	8.8	2.94	1.588	1.352	10.388	2.152	69.408	
SEMH_PA10_9000218103	8.58	4.98	0.221	4.759	8.801	0	69.812	
SEMH_PA10_9000218204	7.98	3.01	0.195	2.815	8.175	0	79.357	
SEMH_PA10_9000101242	7.45	3.88	0.208	3.672	7.658	0	80.484	
SEMH_PA10_9000101230	7.15	3.2	0.231	2.969	7.381	0	80.48	
SEMH_PA10_9000218147	6.81	3.93	0.227	3.703	7.037	0	80.48	
SEMH_PA10_9000134919	6.56	3.22	0.227	2.993	6.787	0	80.483	
SEMH_PA10_9000101221	6.25	3.92	0.22	3.7	6.47	0	80.483	
SEMH_PA10_9000218259	5.99	3	0.222	2.778	6.212	0	93.093	

Junction ID	Invert Elevation (m)	Full Depth (m)	Max. Depth (m)	Freeboard (m)	Head (m)	Max. Lateral Inflow (L/s)	Max. Total Inflow (L/s)	MH Depth Comment
SEMH_PA10_9000137275	5.726	4.244	0.323	3.921	6.049	0	94.906	
SEMH_PA10_9000100905	5.71	3.73	0.248	3.482	5.958	0	94.91	
SEMH_PA10_9000100846	5.44	3.65	0.248	3.402	5.688	0	107.39	
SEMH_PA10_9000100915	5.16	3.75	0.237	3.513	5.397	0	107.386	
SEMH_PA10_9000100938	4.8	2.44	0.29	2.15	5.09	0	107.386	
SEMH_PA10_9000102851	4.75	3.38	0.277	3.103	5.027	0	107.385	
SEMH_PA10_9000102845	4.54	3.65	0.258	3.392	4.798	0.699	108.084	
SEMH_PA10_9000102848	4.4	2.88	0.271	2.609	4.671	0	108.08	
SEMH_PA10_9000102857	4.29	2.88	0.261	2.619	4.551	0	108.08	
SEMH_PA10_9000102227	4.19	3.79	0.289	3.501	4.479	0	113.249	
SEMH_PA10_9000137465	3.89	4.08	0.29	3.79	4.18	0	113.248	
SEMH_PA10_9000036678	3.73	4.69	0.319	4.371	4.049	0	113.248	
SEMH_PA10_9000229232	3.55	3.35	0.273	3.077	3.823	0	114.949	
SEMH_PA10_9000035356	3.41	3.43	0.274	3.156	3.684	0	129.65	
SEMH_PA10_9000036665	3.16	3.36	0.313	3.047	3.473	0	129.65	
SEMH_PA10_9000036642	3.04	3.89	0.256	3.634	3.296	0	129.651	
SEMH_PA10_9000036637	2.86	3.77	0.32	3.45	3.18	0	129.651	
SEMH_PA10_9000036626	2.7	3.41	0.344	3.066	3.044	0	131.475	
SEMH_PA10_9000229221	2.57	3.83	0.295	3.535	2.865	0	131.474	
SEMH_PA10_9000036590	2.35	3.18	0.253	2.927	2.603	0	131.47	
SEMH_PA10_9000036585	2.19	4.6	0.154	4.446	2.344	0	131.47	
SEMH_PA10_9000152872	-0.601	6.482	0.402	6.08	-0.199	0	289.86	
SEMH_PA10_9000152524	-0.65	5.75	0.352	5.398	-0.298	0	289.854	
SEMH_PA10_9000152528	-0.745	6.265	0.384	5.881	-0.361	0	289.847	
SEFT_PA10_9000035331	-1.2	6.2	0.369	5.831	-0.831	0.036	290.182	
SEMH_PA10_9000229361	-1.55	6.16	0.488	5.672	-1.062	0	287.39	
SEMH_PA10_9000229364	-1.575	3.735	0.498	3.237	-1.077	0	294.80	
SEMH_PA10_9000035546	-1.766	4.859	0.667	4.192	-1.099	0	841.29	
SEMH_PA10_9000228745	-1.99	5.35	0.639	4.711	-1.351	0.767	841.90	
SEMH_PA10_9000151533	-2.22	5.5	0.617	4.883	-1.603	0.767	844.08	
SEMH_PA10_9000228790	-2.48	6.27	0.633	5.637	-1.847	0	844.03	
SEMH_PA10_9000228784	-2.59	6.26	0.625	5.635	-1.965	0	843.88	
SEMH_PA10_9000035628	-2.8	5.297	0.627	4.67	-2.173	0.767	844.58	
SEMH_PA10_9000035608	-3.18	5.132	0.66	4.472	-2.52	0	844.42	
SEMH_PA10_9000228778	-3.3	6.06	0.598	5.462	-2.702	0	846.69	
SEMH_PA10_9000035588	-3.59	5.971	0.635	5.336	-2.955	0.9	849.84	
SEMH_PA10_9000152335	-3.75	5.12	0.687	4.433	-3.063	0	849.74	
SEMH_PA10_9000153878	-3.41	7.41	0.455	6.955	-2.955	0	4.37	
SEMH_PA10_9000229239	-3.96	4.88	0.625	4.255	-3.335	0	849.56	
SEFT_PA10_9000228550	-4.18	1.2	0.739	0.461	-3.441	0	849.13	FAIL
SEMH_PA10_9000229254	-4.18	5.03	0.695	4.335	-3.485	0	853.33	
SEFT_PA10_9000151247	-4.31	1.2	0.731	0.469	-3.579	0	853.25	FAIL
SEMH_PA10_9000152353	-4.317	5.47	0.694	4.776	-3.623	0	854.53	
SEFT_PA10_9000228541	-4.495	1.202	0.637	0.565	-3.858	0	854.44	FAIL
SEMH_PA10_9000036748	-4.497	5.647	0.57	5.077	-3.927	0	854.23	
SEMH_PA10_9000036739	-4.94	5.99	0.864	5.126	-4.076	0	1,160.58	
SEFT_PA10_9000035326	-4.95	6	0.836	5.164	-4.114	0	1,160.17	
SEFT_PA10_9000035129	-5.19	7.46	0.859	6.601	-4.331	0	1,159.88	
SEMH_PA10_9000152405	-5.2	7.47	0.83	6.64	-4.37	0	1,159.56	
SEFT_PA10_9000151270	-5.2	7.47	0.781	6.689	-4.419	0	1,159.55	
SEMH_PA10_9000152863	-5.42	7.173	0.833	6.34	-4.587	0	1,160.93	
SEMH_PA10_9000037416	-5.7	14.22	0.795	13.425	-4.905	0	1,160.70	
SEMH_PA10_9000152867	-6.06	14.57	0.804	13.766	-5.256	0	1,160.47	
SEMH_PA10_9000154364	-6.42	10.272	0.787	9.485	-5.633	0	1,160.27	
SEMH_PA10_9000039703	-6.62	7.97	0.672	7.298	-5.948	0	1,160.21	
SEMH_PA10_9000230566	-7	8.84	0.676	8.164	-6.324	0	1,160.60	
SEMH_PA10_9000154353	-7.37	10.75	0.724	10.026	-6.646	0.423	1,165.70	

HGL Profile with Maximum Data of Links CDT-353,CDT-355,...,GM_PA10_9000039678L01



Long Section 1 Results - Developed Augmented Scenario

Year Model **2031**
Time Setting Base
Domain Map

Standard Run - Node Results

Allowable Depths in Accordance with GCCC Guidelines

Depth Below MH 1

Junction ID	Invert Elevation (m)	Full Depth (m)	Max. Depth (m)	Freeboard (m)	Head (m)	Max. Lateral Inflow (L/s)	Max. Total Inflow (L/s)	MH Depth Comment
JCT-11215	27.97	1.51	0.042	1.468	28.012	4.312	4.312	
JCT-11209	24.03	3.3	0.043	3.257	24.073	0	4.828	
JCT-11207	19.67	2.4	0.039	2.361	19.709	0	5.02	
SEMH_PA10_9000101045	17.18	1.54	0.067	1.473	17.247	1.122	6.15	
SEFT_PA10_9000100010	16.92	2	0.071	1.929	16.991	0	6.15	
SEMH_PA10_9000101065	16.85	1.14	0.074	1.066	16.924	0.039	6.38	
SEMH_PA10_9000218004	16.75	1.3	0.069	1.231	16.819	0.039	6.55	
SEMH_PA10_9000217997	16.67	1.54	0.06	1.48	16.73	0.156	6.704	
SEMH_PA10_9000134835	14.6	2.89	0.086	2.804	14.686	0	7.096	
SEFT_PA10_9000100040	14.56	2	0.084	1.916	14.644	0	7.096	
SEFT_PA10_9000217241	14.52	2	0.083	1.917	14.603	0	7.096	
SEMH_PA10_9000218041	14.49	2.26	0.082	2.178	14.572	0.039	7.135	
SEMH_PA10_9000218050	14.32	2.89	0.084	2.806	14.404	0.117	7.369	
SEMH_PA10_9000101140	14.07	4.19	0.086	4.104	14.156	0.159	7.529	
SEMH_PA10_9000101146	13.83	1.94	0.08	1.86	13.91	0.039	7.568	
SEMH_PA10_9000101155	13.69	2.23	0.083	2.147	13.773	0	7.568	
SEMH_PA10_9000101161	13.51	2.74	0.086	2.654	13.596	0	7.568	
SEMH_PA10_9000134858	13.39	3.11	0.086	3.024	13.476	0	7.568	
SEMH_PA10_9000101182	13.27	3.5	0.082	3.418	13.352	0	7.607	
SEMH_PA10_9000134748	12.99	2.98	0.07	2.91	13.06	0	7.607	
SEMH_PA10_9000101024	12.8	3.27	0.159	3.111	12.959	0	8.81	
SEMH_PA10_9000134870	12.78	2.79	0.085	2.705	12.865	0	8.81	
SEMH_PA10_9000101299	12.6	3.4	0.102	3.298	12.702	0.039	9.247	
SEMH_PA10_9000101296	12.5	3.32	0.087	3.233	12.587	0	9.247	
SEMH_PA10_9000218227	12.36	6.49	0.102	6.388	12.462	0	9.467	
SEMH_PA10_9000101249	12.15	3.89	0.094	3.796	12.244	0.039	9.506	
SEMH_PA10_9000134955	11.95	4.41	0.093	4.317	12.043	0	9.84	
SEMH_PA10_9000101277	11.68	4.72	0.125	4.595	11.805	0	9.85	
SEMH_PA10_9000134968	11.61	5.04	0.161	4.879	11.771	0.039	10.374	
SEMH_PA10_9000218197	11.49	5.11	1.174	3.936	12.664	0	11.248	
SEMH_PA10_9000218141	10.71	2.86	0.736	2.124	12.688	0	10.102	
SEMH_PA10_9000101208	10.62	5.24	1.569	3.671	12.189	0	10.266	
SEMH_PA10_9000218120	10.44	3.49	1.114	2.376	11.554	0	10.34	
SEMH_PA10_9000312526	10.4	2.84	1.235	1.605	11.635	0	67.79	
SEMH_PA10_9000101205	10.2	2.7	0.223	2.477	10.423	0	66.977	
SEMH_PA10_9000218134	9.96	2.57	0.437	2.133	10.397	0	66.768	
SEMH_PA10_9000103418	9.8	4.07	0.586	3.484	10.386	0	73.84	
SEMH_PA10_9000220010	9.74	4.08	0.514	3.566	10.254	0	74.912	
SEMH_PA10_9000220005	9.59	2.2	0.373	1.827	9.963	0	75.15	
SEMH_PA10_9000220016	9.51	2.05	0.192	1.858	9.702	0	75.15	
SEMH_PA10_9000218214	8.8	2.94	0.87	2.07	9.67	2.152	77.325	
SEMH_PA10_9000218103	8.58	4.98	0.247	4.733	8.827	0	77.325	
SEMH_PA10_9000218204	7.98	3.01	0.212	2.799	8.192	0	91.107	
SEMH_PA10_9000101242	7.45	3.88	0.226	3.654	7.676	0	92.241	
SEMH_PA10_9000101230	7.15	3.2	0.25	2.95	7.4	0	92.24	
SEMH_PA10_9000218147	6.81	3.93	0.247	3.683	7.057	0	92.24	
SEMH_PA10_9000134919	6.56	3.22	0.246	2.974	6.806	0	92.239	
SEMH_PA10_9000101221	6.25	3.92	0.239	3.681	6.489	0	92.239	
SEMH_PA10_9000218259	5.99	3	0.238	2.762	6.228	0	105.098	

Junction ID	Invert Elevation (m)	Full Depth (m)	Max. Depth (m)	Freeboard (m)	Head (m)	Max. Lateral Inflow (L/s)	Max. Total Inflow (L/s)	MH Depth Comment
SEMH_PA10_9000137275	5.726	4.244	0.345	3.899	6.071	0	106.918	
SEMH_PA10_9000100905	5.71	3.73	0.266	3.464	5.976	0	106.92	
SEMH_PA10_9000100846	5.44	3.65	0.265	3.385	5.705	0	119.54	
SEMH_PA10_9000100915	5.16	3.75	0.252	3.498	5.412	0	119.54	
SEMH_PA10_9000100938	4.8	2.44	0.31	2.13	5.11	0	119.54	
SEMH_PA10_9000102851	4.75	3.38	0.296	3.084	5.046	0	119.539	
SEMH_PA10_9000102845	4.54	3.65	0.276	3.374	4.816	0.757	120.296	
SEMH_PA10_9000102848	4.4	2.88	0.29	2.59	4.69	0	120.30	
SEMH_PA10_9000102857	4.29	2.88	0.28	2.6	4.57	0	120.30	
SEMH_PA10_9000102227	4.19	3.79	0.307	3.483	4.497	0	125.465	
SEMH_PA10_9000137465	3.89	4.08	0.311	3.769	4.201	0	125.464	
SEMH_PA10_9000036678	3.73	4.69	0.34	4.35	4.07	0	125.464	
SEMH_PA10_9000229232	3.55	3.35	0.291	3.059	3.841	0	127.167	
SEMH_PA10_9000035356	3.41	3.43	0.29	3.14	3.7	0	141.88	
SEMH_PA10_9000036665	3.16	3.36	0.33	3.03	3.49	0	141.88	
SEMH_PA10_9000036642	3.04	3.89	0.272	3.618	3.312	0	141.882	
SEMH_PA10_9000036637	2.86	3.77	0.341	3.429	3.201	0	141.882	
SEMH_PA10_9000036626	2.7	3.41	0.364	3.046	3.064	0	143.708	
SEMH_PA10_9000229221	2.57	3.83	0.312	3.518	2.882	0	143.708	
SEMH_PA10_9000036590	2.35	3.18	0.266	2.914	2.616	0	143.71	
SEMH_PA10_9000036585	2.19	4.6	0.162	4.438	2.352	0	143.71	
SEMH_PA10_9000152872	-0.601	6.482	0.414	6.068	-0.187	0	302.559	
SEMH_PA10_9000152524	-0.65	5.75	0.362	5.388	-0.288	0	302.549	
SEMH_PA10_9000152528	-0.745	6.265	0.392	5.873	-0.353	0	302.538	
SEFT_PA10_9000035331	-1.2	6.2	0.377	5.823	-0.823	0.055	302.576	
SEMH_PA10_9000229361	-1.55	6.16	0.622	5.538	-0.928	0	300.10	
SEMH_PA10_9000229364	-1.575	3.735	0.638	3.097	-0.937	0	360.83	
SEMH_PA10_9000035546	-1.766	4.859	0.816	4.043	-0.95	0	1,165.08	
SEMH_PA10_9000228745	-1.99	5.35	0.783	4.567	-1.207	0.774	1,159.31	
SEMH_PA10_9000151533	-2.22	5.5	0.757	4.743	-1.463	0.774	1,155.57	
SEMH_PA10_9000228790	-2.48	6.27	0.775	5.495	-1.705	0	1,153.63	
SEMH_PA10_9000228784	-2.59	6.26	0.763	5.497	-1.827	0	1,148.44	
SEMH_PA10_9000035628	-2.8	5.297	0.762	4.535	-2.038	0.774	1,146.95	
SEMH_PA10_9000035608	-3.18	5.132	0.795	4.337	-2.385	0	1,140.62	
SEMH_PA10_9000228778	-3.3	6.06	0.727	5.333	-2.573	0	1,136.83	
SEMH_PA10_9000035588	-3.59	5.971	0.78	5.191	-2.81	1.76	1,139.73	
SEMH_PA10_9000152335	-3.75	5.12	0.833	4.287	-2.917	0	1,135.67	
SEMH_PA10_9000153878	-3.41	7.41	0.6	6.81	-2.81	0	4.70	
SEMH_PA10_9000229239	-3.96	4.88	0.783	4.097	-3.177	0	1,132.69	
SEFT_PA10_9000228550	-4.18	1.2	0.897	0.303	-3.283	0	1,126.31	FAIL
SEMH_PA10_9000229254	-4.18	5.03	0.851	4.179	-3.329	0	1,131.73	
SEFT_PA10_9000151247	-4.31	1.2	0.879	0.321	-3.431	0	1,130.72	FAIL
SEMH_PA10_9000152353	-4.317	5.47	0.839	4.631	-3.478	0	1,130.96	
SEFT_PA10_9000228541	-4.495	1.202	0.787	0.415	-3.708	0	1,129.82	FAIL
SEMH_PA10_9000036748	-4.497	5.647	0.718	4.929	-3.779	0	1,127.81	
SEMH_PA10_9000036739	-4.94	5.99	1.026	4.964	-3.914	0	1,491.90	
SEFT_PA10_9000035326	-4.95	6	0.995	5.005	-3.955	0	1,488.90	
SEFT_PA10_9000035129	-5.19	7.46	1.007	6.453	-4.183	0	1,487.06	
SEMH_PA10_9000152405	-5.2	7.47	0.973	6.497	-4.227	0	1,484.75	
SEFT_PA10_9000151270	-5.2	7.47	0.921	6.549	-4.279	0	1,484.69	
SEMH_PA10_9000152863	-5.42	7.173	0.976	6.197	-4.444	0	1,485.59	
SEMH_PA10_9000037416	-5.7	14.22	0.932	13.288	-4.768	0	1,484.14	
SEMH_PA10_9000152867	-6.06	14.57	0.94	13.63	-5.12	0	1,482.76	
SEMH_PA10_9000154364	-6.42	10.272	0.912	9.36	-5.508	0	1,481.74	
SEMH_PA10_9000039703	-6.62	7.97	0.783	7.187	-5.837	0	1,481.51	
SEMH_PA10_9000230566	-7	8.84	0.794	8.046	-6.206	0	1,481.41	
SEMH_PA10_9000154353	-7.37	10.75	0.875	9.875	-6.495	0.467	1,497.28	

HGL Profile with Maximum Data of Links CDT-353,CDT-355,...,GM_PA10_9000039678L01