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# SHOALHAVEN STARCHES

## SAFETY MANAGEMENT PLAN

<b>1.0 TITLE:</b>	<b>Flood Mitigation &amp; Management Plan</b>
<b>2.0 PURPOSE:</b>	The purpose of this document is to describe the management strategy for flood mitigation and the plan for flood events including an evacuation plan.
<b>3.0 SCOPE:</b>	The Plan covers all areas of the Shoalhaven Starches Plant, the Environmental Farm and the Waste Water Treatment Plant
<b>4.0 REFERENCES:</b>	<p>Floodplain Management Manual, Draft, NSW Government (ISBN073103709).</p> <p>Manildra Group, Proposed BOC Gases Plant and Dairy Farmers Pond at Bomaderry</p> <p>Hydraulic Assessment of Cumulative Effects, Webb, McKeown and Associates, July 2000.</p> <p>NSW SES Shoalhaven City Local Flood Plan – February 2004.</p> <p>Public Works Department, Lower Shoalhaven River Flood Study, Report No PWD 87049, April 1990.</p> <p><a href="#">SA-P-0200</a> ERT Standard Operating Procedures</p> <p><a href="#">SA-P-235</a> Shoalhaven Starches Emergency Response Plan</p> <p><a href="#">SA-P-253</a> - Environmental Farm &amp; Waste Water Treatment Plant Emergency Response Plan</p> <p>Shoalhaven Development Control Plan 2014.</p> <p>Shoalhaven Starches Pty Ltd, Rezoning Proposal, Bolong Road, Bomaderry, Report on Flooding Issues, Gutteridge Haskins &amp; Davey, June 1999.</p>

### 5.0 AMENDMENT

This plan has been prepared by the site Engineering Manager and any amendments to this plan will be authorised by the Engineering Manager or delegate.

Version	Date	Reviewed by	Authorised by	Amendment
1.0A	29/09/2008	John Studdert	Mick Rees	New document
1.0B	02/03/2016	John Studdert	Mick Rees	Minor changes
1.0C	16/08/2018	John Studdert	Ming Leung	Minor changes
1.0D	25/09/2018	John Studdert	Matt Handicott	Changed format and added a references and amendment table. Changes made in accordance with Shoalhaven City Council requirements.
1.0.E	3/03/2020	John Studdert	Lou Reali	Addition of MOD 16 including updated site plan.

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## 6.0 INTRODUCTION

The Manildra Group Shoalhaven Starches Pty Ltd manufacturing facility and Environmental Farm is situated on a wide alluvial floodplain of the Shoalhaven River. The Shoalhaven River is 300 kilometres long and has a catchment area of approximately 7,500 square kilometers. The river is subjected to tidal influence up to 59 kilometres upstream of the river mouth.

The final tributary of the Shoalhaven River is Broughton Creek. The alluvial floodplain extends northward up the valley to the town of Berry. Broughton Creek also acts as part of the northern boundary of the environmental farm in a number of locations.

A Flood Evacuation Plan is required for the safe evacuation of all personnel on site when the facility is threatened by flooding.

This Plan does not contain the detailed processes and procedures to be initiated for the shutting down of the Shoalhaven Starches Plant, or any flood mitigation processes that need to be implemented, prior, during and after the flood event. The Flood Evacuation Plan has been developed in accordance with:

- Chapter G9 of Shoalhaven Development Control Plan 2014.
- Recommendations set out in the Floodplain Management manual (Draft) prepared by the Department of Land & Water Conservation (DLWC).
- New South Wales State Emergency Service (SES) Shoalhaven City Local Flood Plan 2004 – A Sub-Plan of the Shoalhaven Local Disaster Plan.
- Condition 26A of Shoalhaven Starches Development Consent 06\_0228.

The Key stages of the consultation process were:

- Consultation with Shoalhaven City Council and the SES Local Controller to establish all requirements for the Plan.
- Review the Local Flood Plan to determine any additional requirements.
- Confirm the operational procedures for the facilities.
- Incorporate the results of the recent flood modelling work and historical events e.g. 26<sup>th</sup> August 2015 flood.
- Incorporate the recommendations received from Council during a flood plan consultation meeting held on 2<sup>nd</sup> February 2016.
- Incorporate the recommendations received from Council email dated 10-9-2018 as follows:
  - It is not understood who prepared this Flood Mitigation and Management Plan. According to Chapter G9, the evacuation plan should be prepared by appropriate engineer (refer to page 1)
  - The evacuation plan is detailed. It is recommended to include the emergency contacts list (e.g. NSW SES, medical, fire, police, RMS traffic, Council etc.) and highlight that this contact list requires periodic update if required (refer to page 15)

- The subjected site is within the high hazard floodway and it will be inundated in a 10% AEP flood (or 1 in 10 ARI flood event). As recommended measure is to install flood marker(s) along the bank of Shoalhaven River adjacent to the farm to monitor the water levels by the manager in the event of heavy rainfall. It is noted that this is a flood warning service is provided by BOM for the Shoalhaven River; (refer to Figure 3, page 10)
- As indicated in the report, regarding the Flood Management Strategy (*Section 9 of the report*), the timeline for the proposed act must needs to be developed including estimated resource allocations to undertake the work. This is important for pre-planning and will assist the manager in making sound decisions (refer to section 14.2)
- Further evidence of consultation with Council is shown in Appendix 4.

References to where each relevant condition of the development consent has been addressed in this plan is shown in Table 1 below.

**Table 1** Conditions of Consent

<b>Condition 26A</b>	<b>Section in Plan</b>
<i>a) be prepared in consultation with Council and submitted to the Secretary prior to operation of each modification;</i>	Section 6 & Appendix 4
<i>b) detail the procedures for managing flood risks during construction, demolition and operation, including flood recovery measures, procedures for ensuring the protection of infrastructure and human safety;</i>	Section 13 & 14
<i>c) identify assembly points, emergency evacuation routes, flood warning alarms and evacuation procedures.</i>	Section 13 & Appendix 1
<i>d) describe the controls to be implemented to ensure plant, equipment and stockpiles do not become floating debris during flood events</i>	Section 10
<i>e) demonstrate the development will not unduly increase the dependence on emergency services.</i>	Section 11

## **7.0 LOCATION OF THE SITE**

### **7.1 Regional Context**

The Manildra Group Shoalhaven Starches site is located adjacent to the Shoalhaven River on the eastern side of the confluence with Abernethy Creek, approximately 13 km from the mouth of the Shoalhaven River.

Flooding on Broughton Creek or any of the other smaller creeks, such as Abernethy's Creek which feed the low lying areas, such as the environmental farm, in themselves can create nuisance flooding. However, this type of flooding can be compounded if there is existing problems attributable to flooding on the main river.

Furthermore, storm surge offshore of the river's entrances have historically

aggravated flooding effects within the Shoalhaven floodplain. Entrance conditions on the lower river at Shoalhaven Heads can also contribute to low level flooding if the Shoalhaven River is closed to the ocean at Shoalhaven Heads. A situation that can result in significant backwater effects in the lower reaches of the river.

## 7.2 Local Context

Road access to the site is gained off Bolong Road on a private sealed surfaced road at the **No1** entrance (Gate 13) adjacent to Cleary Bros concrete which is approximately 175m to the west of the railway level crossing on Bolong Road. Along this internal road while passing the Evaporator plant, a small bridge with floodgates, spanning Abernethy's Creek, provides access from the internal roadway which gains access to the Stillage Plant, DDG Storage Areas and Boiler house etc.

Road access is also provided off Bolong Road on a sealed surface at **No2** entrance (Gate 7), which is approximately 100m to the east of the railway level crossing on Bolong Road and leads into the Starch Mill, Gluten Dryers and Starch Dryer facilities.

Road access is also provided off Bolong Road on a sealed surface at **No3** entrance (Gate 5), which is approximately 200m to the east from the No2 entrance and leads into the Ethanol and Glucose complex.



*Figure 1 – Bolong Road Looking South*

## 8.0 DESCRIPTION OF THE FACILITY

Shoalhaven Starches Pty Ltd, a division of the Manildra Group, is a Food and Fuel manufacturing company. Shoalhaven Starches produce food products from wheat grain such as Starch, Gluten, Glucose and Ethanol. The factories contained within the site are constructed mainly of metal cladding or concrete panels with the main factory constructed with brick and mortar. The factories are multi levels except for the

Packaging Plant.

Supply of raw materials and delivery of the finished products is primarily delivered by rail transport by way of a rail siding into the facility. Some deliveries of raw materials and product are also made by road transport. Road transport is also utilised for delivery of finished product to customers and can vary from bulk liquid, bulk dry powder to bags and drums.

At any of the 3 main entrances into the plant off Bolong Road, emergency services can enter at any point to access the site.

## 9.0 STAFFING CHARACTERISTICS

There are two shifts of 12 hours that operate each day all year round. The day shift commences at 0600 to 1800 and nightshift commences at 1800 to 0600 seven days a week. The evacuation of employees to safe areas is dependent on an early warning system being in place. Typically during a normal working day Staff numbers can be around 130 people.

Summary of Staff numbers:

**SHIFT WORKERS 210      DAY SHIFT 70 STAFF 65**

Depending on the number of projects underway, the number of personnel on duty during Day Shift (Monday to Friday) can increase to over 120 over and above normal staffing arrangements.

## 10.0 SITE CHARACTERISTICS AND UNIQUE RISKS

Apart from inundation of flood water from adjacent waterways, during recent localized flooding events it has been observed that floodwater approaches the site from the Environmental Farm side (north) of Manildra's property. This being the case the Environmental Farm Manager will contact the Shoalhaven Starches WHS Manager when floodwaters are approaching and can provide a regular updates on the rate of rise of floodwaters.

Close communication with the Farm Manager can provide an early warning to the Shoalhaven Starches facility of the potential localized flood threat. A threat that can rapidly develop prior to the receipt of a Flood Alert/Advice for the Shoalhaven River from the SES, due to localized conditions on the floodplain which the Environmental Farm is located.

The WHS Manager is in close contact with the Environmental Farm Manager and is kept up-to-date on a regular basis during a flood event.

Machinery and equipment that are vulnerable to water ingress or which may become floating debris during flood events, will need to be relocated to higher ground and sand bagging or other means to stop water entering these areas will need to be co-ordinated and implemented.

Concrete blocks surround the coal and woodchip stockpiles at the Factory and Environmental Farm to minimize the risk of floating debris during flood events.

There are a variety of palletised raw materials and product scattered around the site

and consideration needs to be given to these items during times of flooding. There are also large shipping containers that could float away and become a hazard if flood levels were severe.

Empty shipping containers will be relocated above flood levels to prevent them from floating away.

## **11.0 FLOOD ASSESSMENTS**

Shoalhaven Starches has undertaken several Flood Assessments detailing the potential impacts that the proposed works will have on flood waters within the locality, and to examine measures that are proposed to mitigate such impacts as part of the each project modification submitted to the Department of Planning.

The latest project modifications included in this revision of the plan are:

- MP06\_0228 MOD 10 – Flour Mill B
- MP06\_0228 MOD 11 – DDGS Dryers
- MP06\_0228 MOD 12 – Beverage Grade Ethanol
- MP06\_0228 MOD 13 – Conversion of Boilers
- MP06\_0228 MOD 16 – Flour, Gluten & Starch Increase

The flood assessments for each of the above modifications conclude that there would be no significant increase in the 1% AEP flood level as a result of the proposed works within the existing Shoalhaven Starches plant area.

The works associated with MOD 16 will increase (by 15) the number of workers from Shoalhaven Starches who may be subject to flood risk. The proposed works will not occupy escape routes or cause workers to become trapped. The flood evacuation routes and actions detailed in this plan as a result of the MOD 16 development will not unduly increase the dependence on emergency services.

An indicative ground level at the site is 4.2 m AHD and the 1% Annual Exceedance Probability (AEP) flood level is varies from 5.5 m to 5.8m AHD across the site. Site ground levels of various structures and buildings are shown in Appendix 3 which can be used as a reference during flood events.

All new buildings and structures are designed from flood compatible materials and are built to withstand the forces of flood waters, debris and buoyancy forces up to the 0.2% AEP flood events. Structural flood engineer's reports are obtained for the buildings and structures for each modification in accordance with condition 26F and 26G of Shoalhaven Starches Development Consent 06\_0228.

The majority of the above works are largely sealed structures and/or above the probable maximum flood (PMF) flood level which means there will be minimal damage due to inundation, even in a PMF, unless the structure itself fails.

There will potentially be some damage to electrical and other components feeding the equipment and these are considered in this plan. New electrical substations and switch rooms have been constructed above the 1% AEP.

The additional works will not occupy escape routes or cause workers to become

trapped. An updated site plan showing the current buildings and structures (including future MOD 16 structures shown in red), escape routes and flood assembly point is shown in Appendix 1.

## 12.0 FLOODING IMPACTS

This section looks at the impact of local flooding due to the nearby Abernethy's Creek and Bomaderry Creek and more importantly as a result of the Shoalhaven River. Flood levels quoted in this report have been sourced from the Webb McKeown & Associates, July 2000 report on the hydraulic assessment of cumulative effects.

### 12.1 Local Flooding Impacts

There is no known flood study investigating local flooding in Abernethy's Creek and Bomaderry Creek. The ratio of catchment area to catchment storage in both catchments is low which means the risk of severe flooding is decreased.

The depth of inundation as a result of local flooding from Bomaderry Creek and Abernethy's Creek is expected to be less critical than the effect of regional flooding in the Shoalhaven River.



*Figure 2 - Plant Layout and Main Evacuation Route to Bomaderry via Railway Road*

### 12.2 Regional Flooding Impacts

The 1% Annual Exceedance Probability (AEP) flood level in the Shoalhaven River, at the site was calculated to be 5.8m AHD. This means that areas of the plant will be inundated during the 1% AEP flood. Equipment will have to be prepared for inundation if the predicted flood level is higher than 3.8m AHD. In an extreme flood the calculated flood level through the study area is 7.8m AHD. In both the 1% AEP flood and extreme flood the evacuation route from the Plant will be inundated, therefore evacuation of all personnel will be required.

The critical storm duration producing a peak 1% AEP flow at Nowra was found to



be 36 hours. From the time Manildra Group receives the early flood warning there is approximately seven hours before the access road is cut at the 1% AEP flood. This time can vary and it is critical that the flood level at Nowra Bridge be continually monitored by the SES to determine the rate of rise in the Shoalhaven River.

The lowest point along the gravel access road is adjacent to Abernethy's Creek and has a level of approximately 4.0m AHD. Sections of Bolong Road are also lower than the 1% AEP flood level and would be cut by floodwaters as a result. Whilst it is preferable to have an evacuation route located at a level greater than 1% AEP flood, the filling required could itself increase the upstream flood levels.

## 13.0 FLOOD EVACUATION PLAN

The evacuation plan has been compiled through the assistance of Shoalhaven City Council and the New South Wales State Emergency Service (SES).

Appendix 2 contains a flood evacuation plan in the form of a flow chart. A flow chart was adopted to display the information in order to simplify the flooding and evacuation process. The proposed evacuation plan essentially follows the existing practices undertaken by Manildra Group, the SES and Council during flooding.

The Flood Evacuation Plan is described in the following steps:

1. Manildra Group receives an early flood warning from the SES when the level in the Shoalhaven River near the Nowra Bridge reaches a rising level of 1.3m AHD;
2. The Manildra WHS Manager assumes responsibility for receiving flood observations from the SES and Flood Watch warnings for the Shoalhaven River. This is communicated to the Site Manager, the ex. Dairy Farmers site, the ex. Paper Mill site and all Manildra Group Section Managers.
3. There is then ongoing communication between Manildra Group and the SES to monitor the existing level and the expected peak flood level in the Shoalhaven River using both BoM and Manly Hydraulics Laboratory (MHL) gauges. (web links shown below):  
<http://new.mhl.nsw.gov.au/users/Shoalhaven/>  
[http://www.bom.gov.au/nsw/flood/rain\\_river.shtml](http://www.bom.gov.au/nsw/flood/rain_river.shtml)
4. Manildra Group will then compare the expected peak flood level with the access road level to determine if the access road will be cut; this will occur at a flood level of about 4m AHD.
5. If the access road will be cut then Manildra Group will initiate the plant shutdown and evacuate personnel; and
6. If the expected peak flood level will not exceed the level of the access road then Manildra Group will not initiate the plant shutdown. Ongoing communication between Manildra Group and the SES will be required until the flood level drops below 1.3m AHD.
7. It is estimated that Floodwaters will enter the site at 3.8m AHD. The timing of the high tide compared to the expected flood peak must be assessed (predicted flood levels do not take into account tide levels).

8. The Flood Evacuation Plan should now be used as a tool in the decision making process when the Shoalhaven River is in flood. The key to the success of the Flood Evacuation Plan during a flood is the ongoing communication between Manildra Group and the SES.

## 14.0 FLOOD MANAGEMENT PLAN

### 14.1 Flood Marker

A flood marker is secured to the jetty south of the Flour Mill. This depth marker is used to initiate the action levels in the management plan (Figure 3).



*Figure 3– Depth Marker Manildra Jetty*

### 14.2 Flood Management Plan

The following actions will be completed according to river depth. A timeline for the following actions must be developed to ensure there is sufficient time to conduct each action including evacuation of personnel prior to the peak flooding occurring.

**1. Action 1 plan for when the river is predicted to peak at 3.50m AHD (at Nowra Bridge)**

Action	People	Hours
Prepare the following: <ul style="list-style-type: none"><li>• Diesel pumps</li><li>• 1000 sandbags</li><li>• 100m rolls of black builders heavy duty plastics for sealing Hire diesel pumps</li></ul>	1 supervisor 4 workers	8

Grain plant basement – check if rain is flooding the basement	1 worker	0.25
SDC 1, 2 & 3 room – barricade the room with steel plates at entrances, place sandbags, place plastics for sealing and waterproof the bricks. A diesel pump should be placed inside to pump out the water from room.	2 workers	4
Check first flush pit drain valves located at the River are closed. This will prevent high river water levels from entering the site via the first-flush pit drainage system.	1 person	0.5
Diverter sump between first flush pit and river – place diesel pump to pump out first flush pit. Be aware of train activity, communicate with rail people. Refer Point “T” on map. <i>*This is the most important action*</i> Note: -First flush pit –the electric pump automatically starts when first flush pit reaches high level. If pressure is above 500kPa, it means the centrifugal pump is fighting the big red pump at the farm tank. -It is known that big red gives higher pressure than the electric pump at the first flush pit.	2 workers	0.5
Switch room DB1 (Fermentation) – place sandbags, place plastics for sealing and waterproof the door way. Pump water out from switch room to stormwater sump after consultation with electricians.	2 workers	1 hour
Switch room DB2 (Ethanol loading bay) – place sandbags, place plastics for sealing and waterproof the door way. Pump water out from switch room to stormwater sump after consultation with electricians.	2 workers	1 hour
Main switch yard switch room – place sandbags, plastics for sealing and waterproof the bricks. A diesel pump should be placed to pump out the water from the pit in the switch room after consultation with electricians.	2 workers	2hour
Flour unloader area – place sandbags, place plastics for sealing, be prepared to fit flood doors. Doors have been modified to be used as deflectors, which bolt to the wall	2 workers	2 hour
Flour unloading river bank – place sandbags along river bank as per 2015 site reference photos	2 workers	1 hour
Ethanol loading bay – sumps need to be sandbagged. If too much water then stop the trucks from entering	2 workers	0.5 hour
All switch rooms – check the doorway for leaks, and waterproof if required	2 workers	1 hour
<b>Total</b>	<b>1 supervisor 6 workers</b>	<b>12 hours</b>

**2. Action 2 plan for when the river is predicted to peak at 3.80m AHD (at Nowra Bridge)**

Action	People	Hours
All action 1 items		
Saltwater pit – close off river outlet using sandbags	1 person	0.25

**3. Action 3 plan for when the river is predicted to peak at 4.20m AHD (at Nowra Bridge)**

Action	People	Hours
All action 2 items		
Remove locomotives off site	Rail	1 hour
Notify the Rail Coordinator that inbound train is to stop at Port Kembla.	1 supervisor	0.1
Move empty shipping containers above flood levels or re-locate off-site.	1 supervisor 2 drivers	6 hours

**4. Action 4 plan for when the river is predicted to peak at 4.50m AHD (at Nowra Bridge)**

Action	People	Hours
All action 3 items		
Keep plant running	1 supervisor 20 workers	
Monitor rain forecast	1 supervisor	
Non-essential personnel (i.e. office staff, contractors, etc) to be evacuated from the site. Remaining personnel to keep plant operating & prepare for plant shut.		2 hours

**5. Action plan for when the river is predicted to peak at 4.80m AHD (at Nowra Bridge)**

Action	People	Hours
All action 4 items		
Prepare for plant shut down when river reaches 4.5m AHD	1 supervisor 20 workers	3 hours
Site flooding to be monitored and shut down to be implemented as required.		
Remaining personnel to be evacuated by initiating plant evacuation alarm PA system and plant shutdown.		2 hours
Note: Flood evacuation assembly point is the Main Administration Building (opposite Service Station)		
Note: Flood evacuation route is from Main Administration Building up Railway Parade to Cambewarra Road.		

## 15.0 EMERGENCY TELEPHONE NUMBERS

Organisation	Telephone Number
Fire Brigade	000      Fire Brigade Pumper - 0407 229 811
Ambulance	000
Police	000      Nowra Police Station – 4421 9699
Shoalhaven Hospital	02 442 13111
SES	13 25 00
EPA	131 555      or      9995 5555
SafeWork Nowra	02 4428 6700 Bus Hrs      Mob – 0400 874 120
Shoalhaven City Council	4429 3111 4421 3100 (emergencies after hours)

## 16.0 APPENDICES

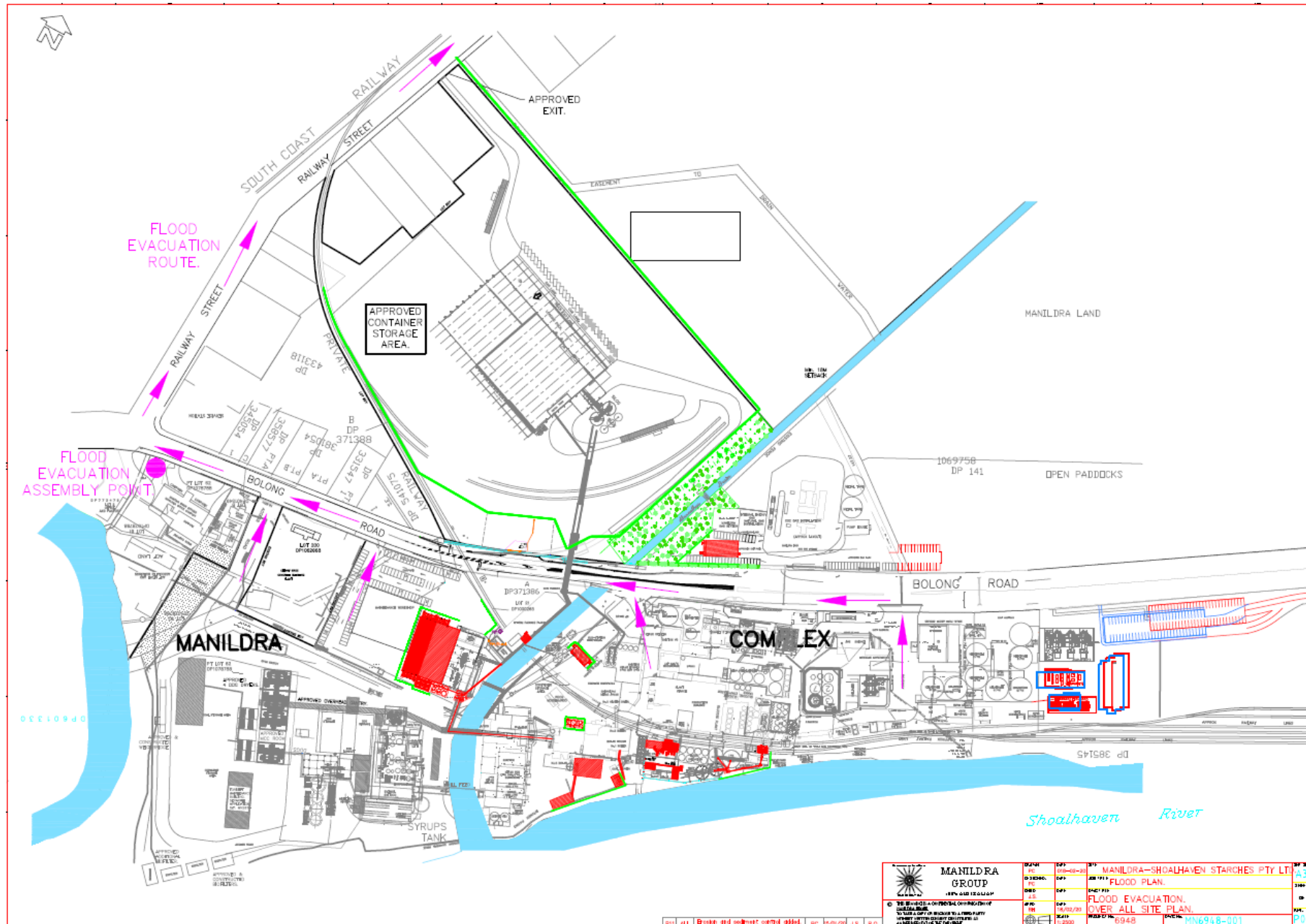
Appendix 1: Site Plan

Appendix 2: Flood Evacuation Flowchart

Appendix 3: Plan of Site Water Levels

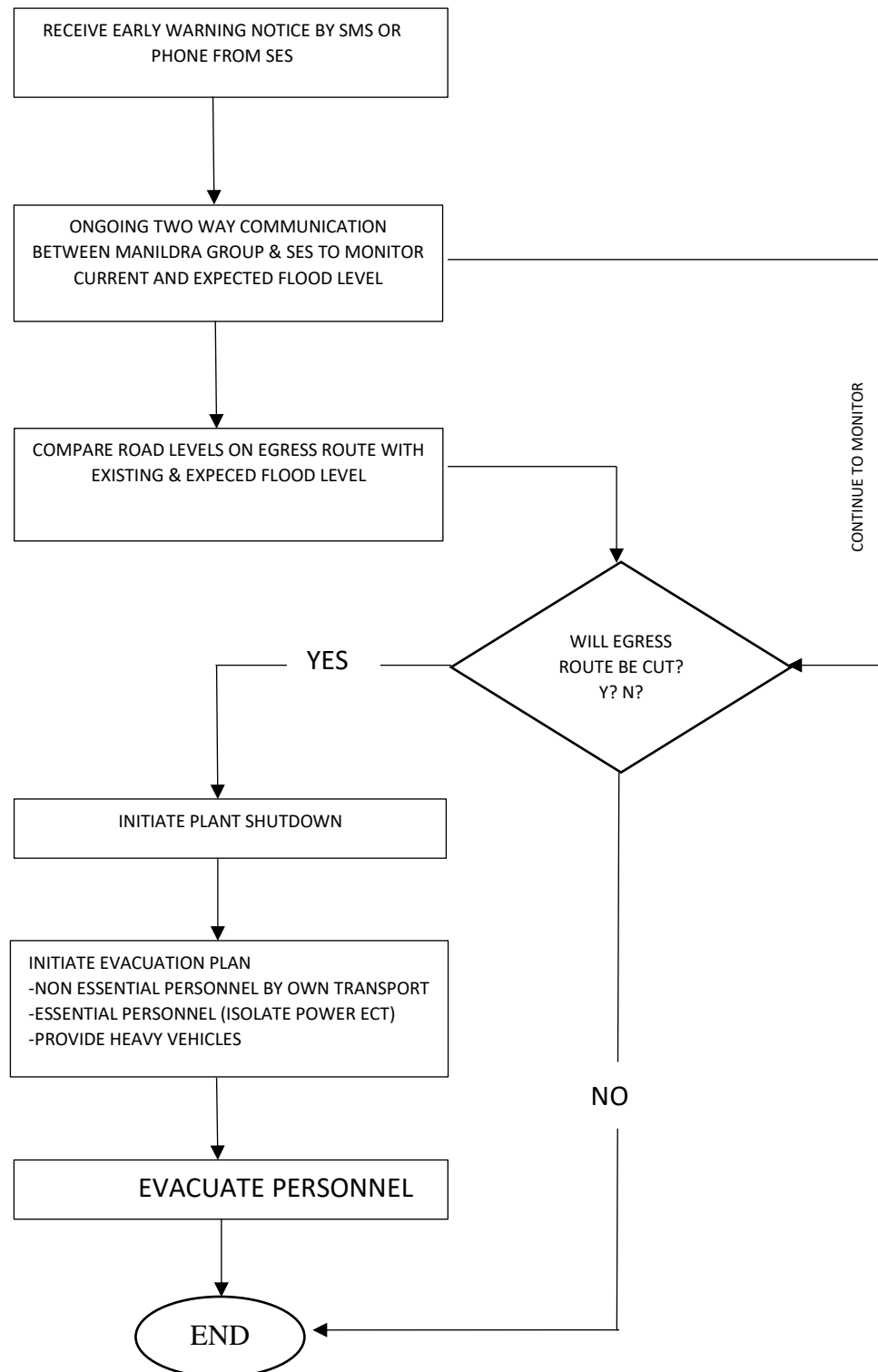
Appendix 4: Consultation

# Appendix 1 - Site Plan Evacuation Routes



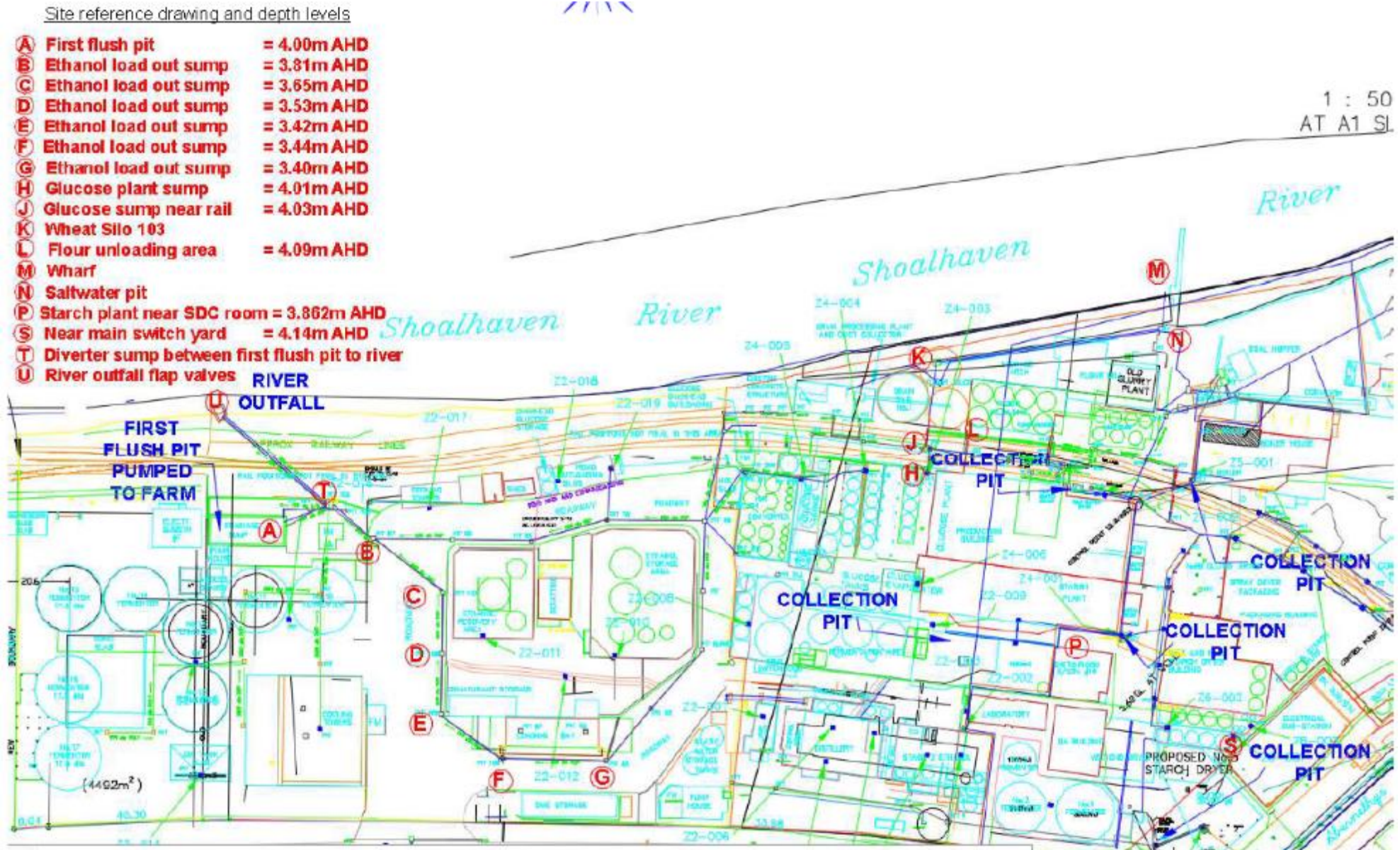
## Appendix 2 - Flood Evacuation Flowchart

### Manildra Group Flood Evacuation Plan



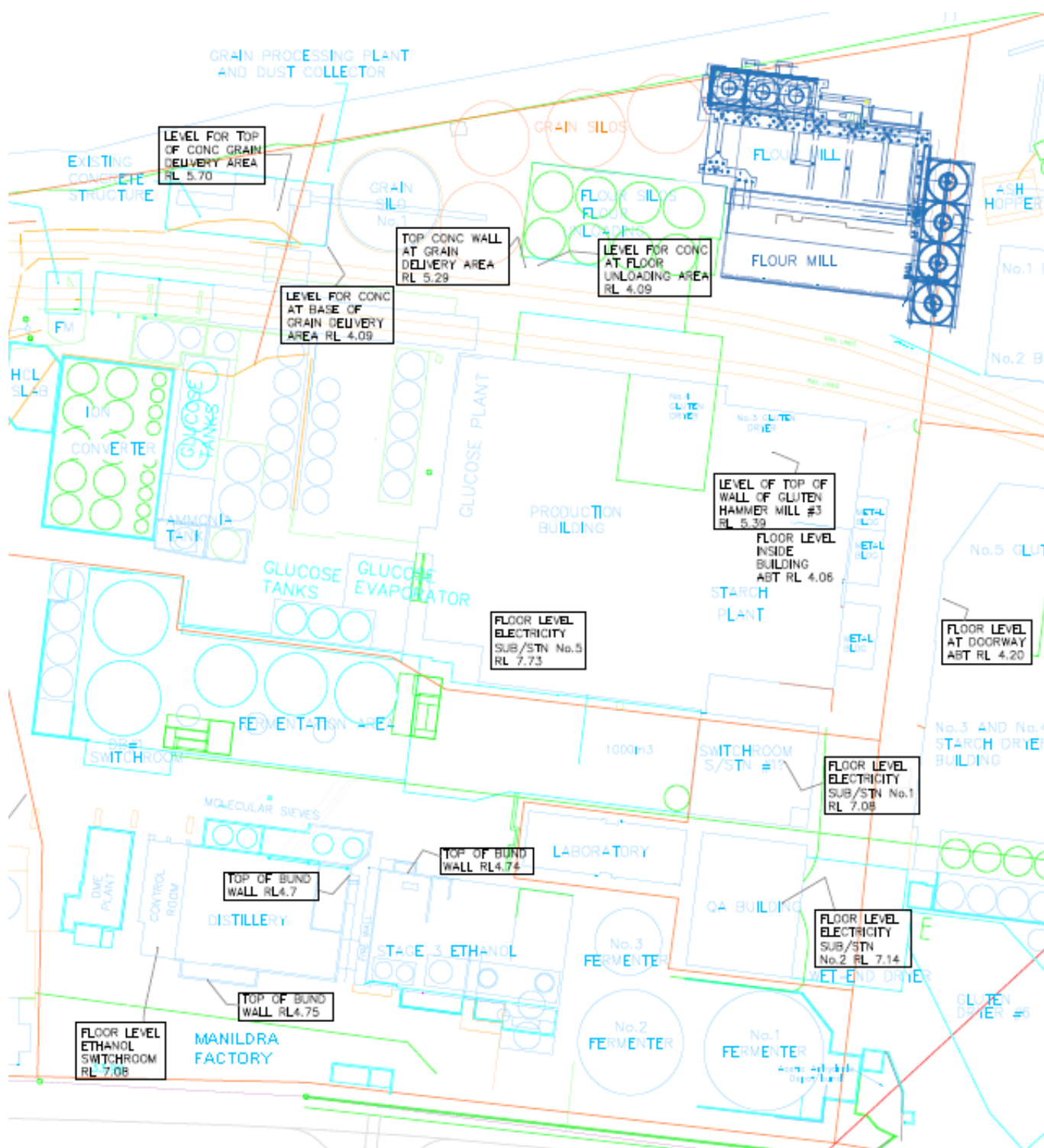


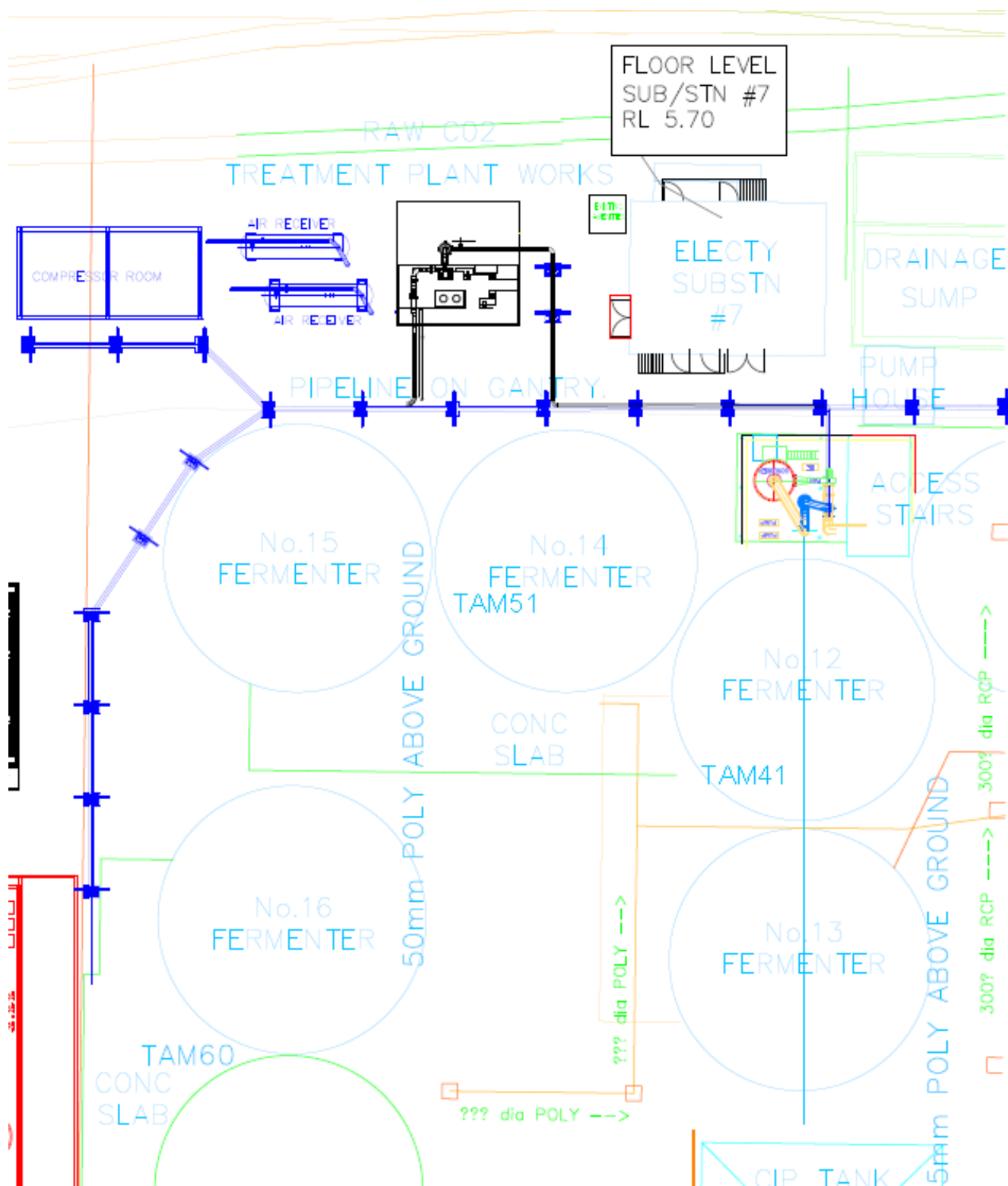
## Appendix 3 – Site Plan of Water Levels











## Appendix 4 - Consultation

Shoalhaven Starches Flood Mitigation and Management Plan, rev. 1.0.E, has been prepared in consultation with Council. Two minor corrections to the plan raised by Council have been updated in this latest revision. A copy of the consultation is shown below.

**From:** Tanvir Ahmed <Tanvir.Ahmed@shoalhaven.nsw.gov.au>  
**Sent:** Friday, 28 February 2020 12:05 PM  
**To:** John Studdert  
**Cc:** Ali Sevenler  
**Subject:** RE: Shoalhaven Starches Development Consent 06\_0228 - Condition 26A Flood Mitigation & Management Plan update  
**Attachments:** Flood Plan Update 2020\_council comments.docx  
**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

Hi John

I have read the Flood Plan and it looks fine to me. There are few minor correction that you need to update. I addressed these in the word file.

Thanks and Regards

**Tanvir Ahmed**  
Floodplain Engineer  
Shoalhaven City Council

02 4429 3593  
Bridge Rd (PO Box 42) Nowra NSW 2541  
[tanvir.ahmed@shoalhaven.nsw.gov.au](mailto:tanvir.ahmed@shoalhaven.nsw.gov.au)  
[www.shoalhaven.nsw.gov.au](http://www.shoalhaven.nsw.gov.au)

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**From:** Ali Sevenler <Ali.Sevenler@shoalhaven.nsw.gov.au>  
**Sent:** Tuesday, 25 February 2020 7:14 AM  
**To:** Tanvir Ahmed <Tanvir.Ahmed@shoalhaven.nsw.gov.au>  
**Cc:** John Studdert <John.Studdert@manildra.com.au>  
**Subject:** Fw: Shoalhaven Starches Development Consent 06\_0228 - Condition 26A Flood Mitigation & Management Plan update

Hi Tanvir,

Can you please attend to this and provide comments to John (if applicable) by this Friday.

Regards,  
Ali

**From:** John Studdert <[John.Studdert@manildra.com.au](mailto:John.Studdert@manildra.com.au)>

**Sent:** Wednesday, 19 February 2020 10:50 AM

**To:** Council Email <[Council@shoalhaven.nsw.gov.au](mailto:Council@shoalhaven.nsw.gov.au)>

**Cc:** Ali Sevenler <[Ali.Sevenler@shoalhaven.nsw.gov.au](mailto:Ali.Sevenler@shoalhaven.nsw.gov.au)>; Brian Hanley <[brian.hanley@manildra.com.au](mailto:brian.hanley@manildra.com.au)>; Peter O'Neill <[Peter.O'Neill@manildra.com.au](mailto:Peter.O'Neill@manildra.com.au)>

**Subject:** Shoalhaven Starches Development Consent 06\_0228 - Condition 26A Flood Mitigation & Management Plan update

Attention: Flood Engineering Department

Please see attached Shoalhaven Starches Flood Mitigation & Management Plan, updated in accordance with Condition 26A of Shoalhaven Starches Development Consent 06\_0228 MOD 16.

Condition 26A states:

*The Proponent shall update the Flood Mitigation and Management Plan for the project to include each modification. The plan shall:*

- a) be prepared in consultation with Council and submitted to the Secretary prior to operation of each modification;*
- b) detail the procedures for managing flood risks during construction, demolition and operation, including flood recovery measures, procedures for ensuring the protection of infrastructure and human safety; and*
- c) identify assembly points, emergency evacuation routes, flood warning alarms and evacuation procedures.*
- d) describe the controls to be implemented to ensure plant, equipment and stockpiles do not become floating debris during flood events.*
- e) demonstrate the development will not unduly increase the dependence on emergency services.*

*Note: If a modification does not require an update of the plan listed above, the Proponent shall provide written justification to the satisfaction of the Secretary.*

In accordance with item a) above we seek Council's comments on the attached plan (with track changes shown)

Please provide any comments by Friday 28<sup>th</sup> February 2020.

Regards,

**John Studdert** | Quality Assurance & Environmental Coordinator  
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