Start of the verification test for purifying performance of the subdrain water treatment facilities at Fukushima Daiichi Nuclear Power Station

<Reference>
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Tokyo Electric Power Company

1-1. Overview of the subdrain water treatment facilities.

- Water treatment facilities including subdrain consist of water collecting equipment, purification equipment, and transfer equipment.

Subdrain water collecting equipment

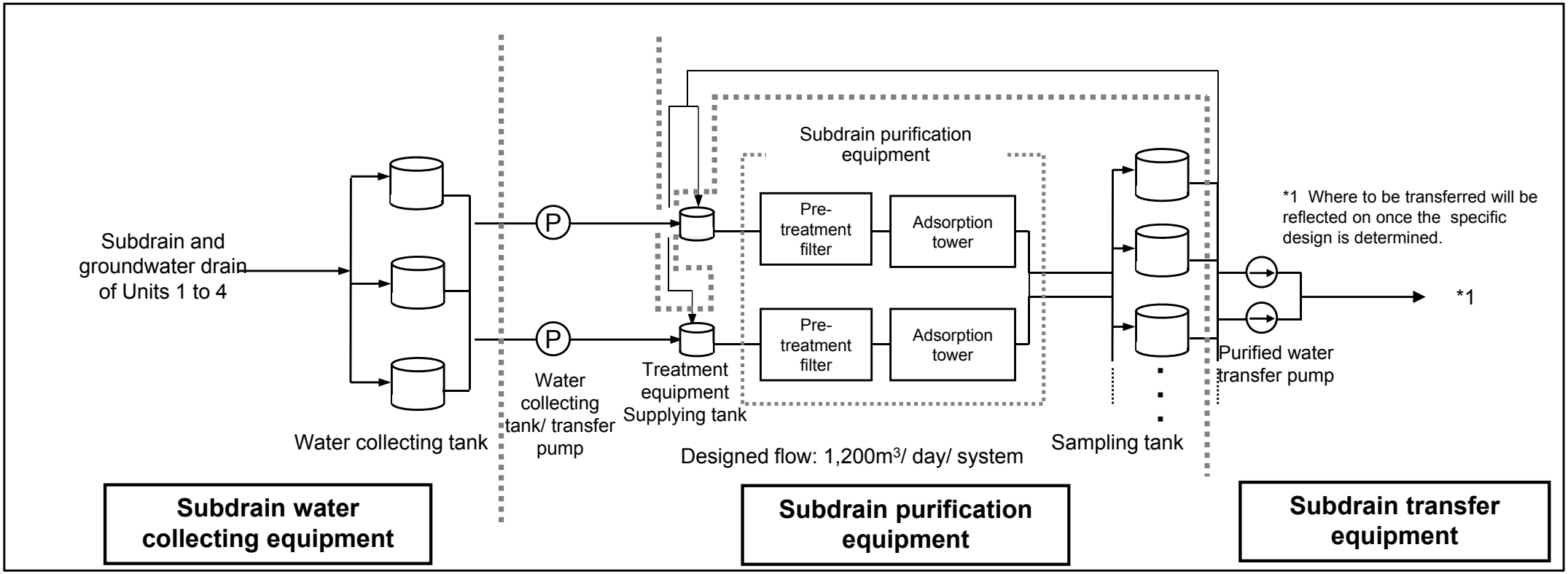
Equipment to pump up groundwater from subdrain pits installed around the turbine buildings of Units 1 to 4 and the water collecting equipment (groundwater subdrain) to be installed inside the impermeable wall on the seaside.

Subdrain purification equipment

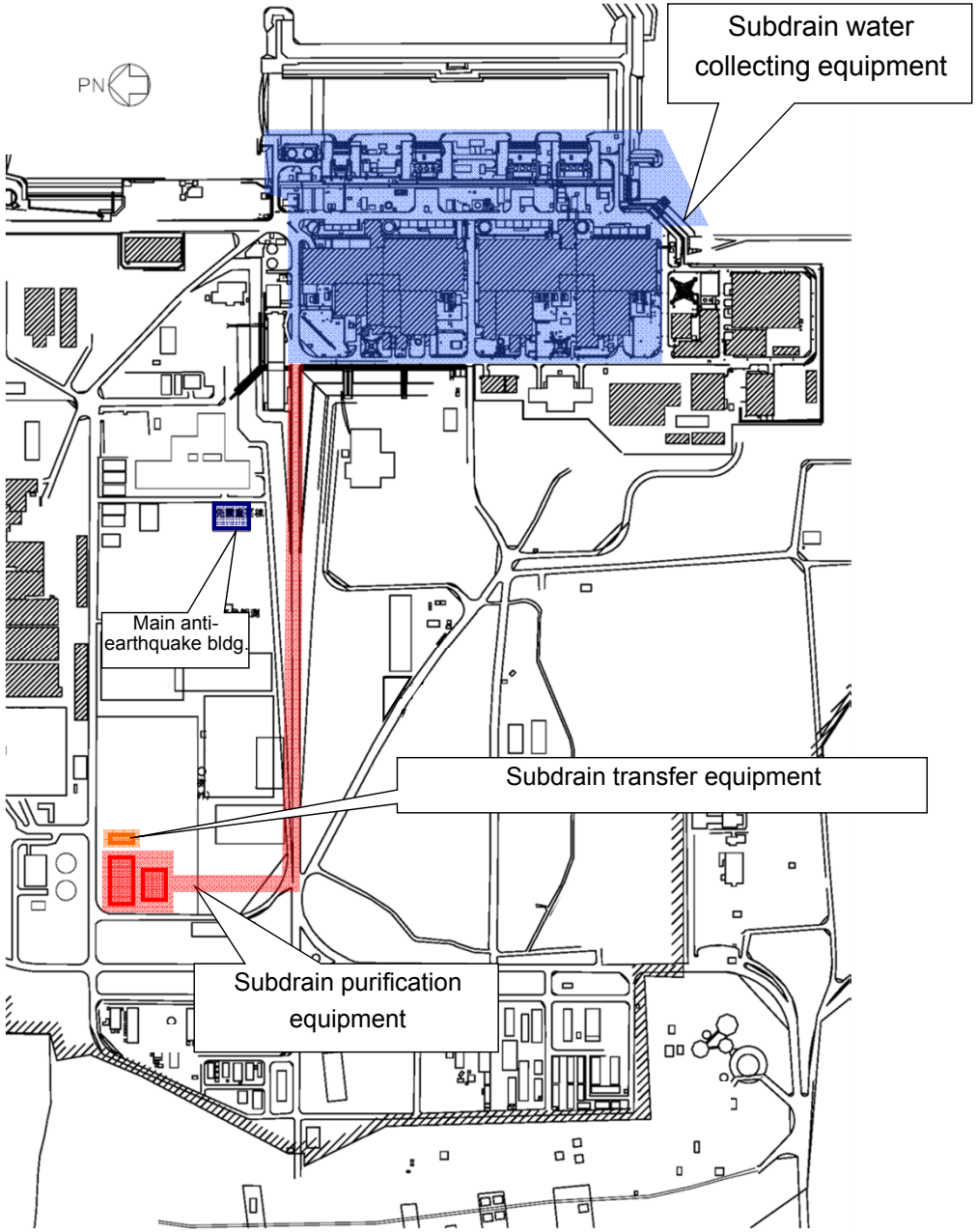
Equipment to remove existing radioactive nuclides (except for tritium) contained in pumped up groundwater to the lowest concentration possible.

Subdrain transfer equipment

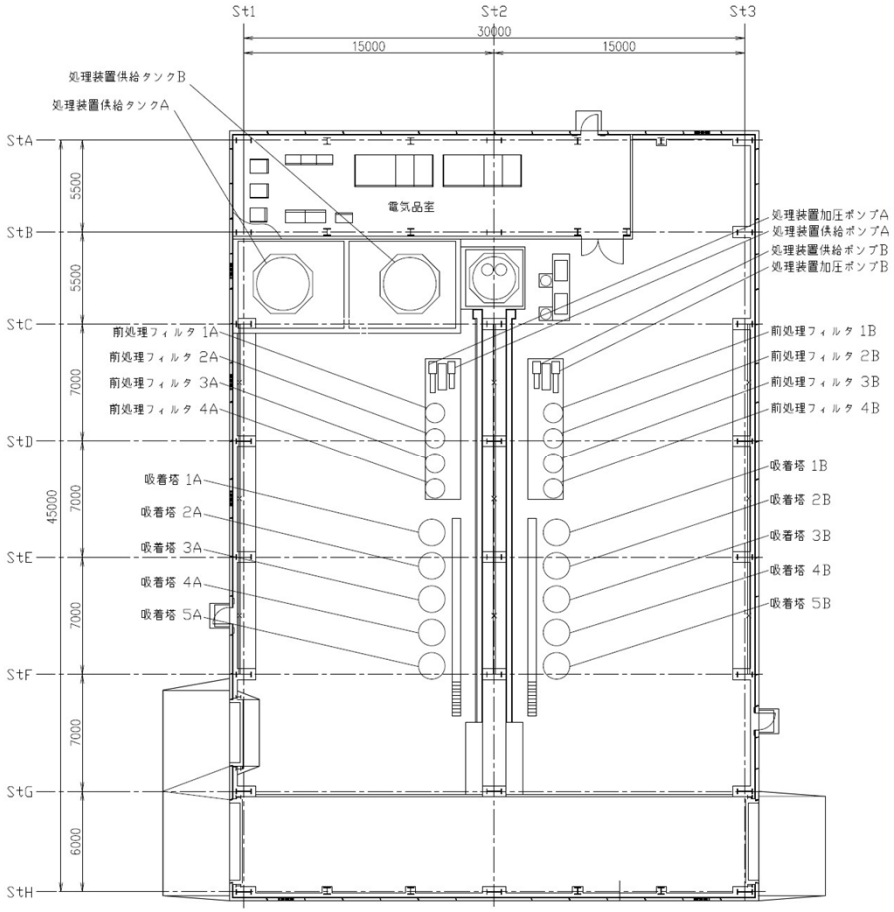
Equipment to transfer the treated water having undertaken sampling during storage in a tank.



1-2. Layout of subdrain water treatment facilities



At the location of O.P.+40m, subdrain purification equipment building (approx. 46 m x approx. 32 m) will be built.



Layout of components in the subdrain purification equipment building.

2-1. Verification test for purifying performance

Purpose

In response to a partial completion of the subdrain water treatment facilities, a test* to verify the performance of removing radioactive nuclides (except for tritium) will be performed on the actual equipment. (* Verification test for purifying performance)

Actions

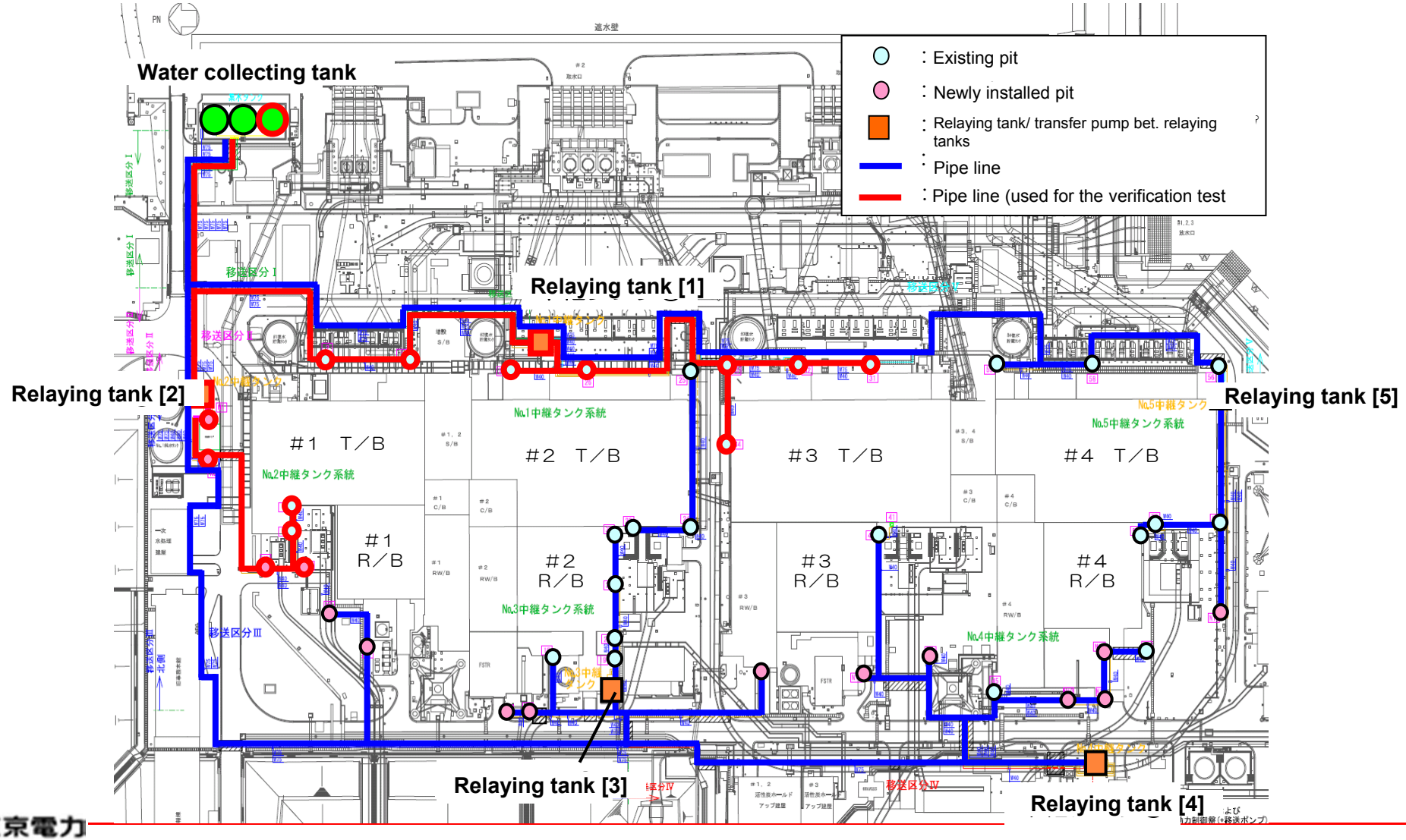
[1] Pump up groundwater from the 14 subdrain pits having been installed to be mixed in the water collecting tank.

[2] Verify the removal competence by comparing two concentrations of radioactive nuclides sampled respectively at the inlet and the outlet of the subdrain purification equipment.

[3] Treated water having passed through the purification equipment will be stored in the sampling tank located at the downstreem.

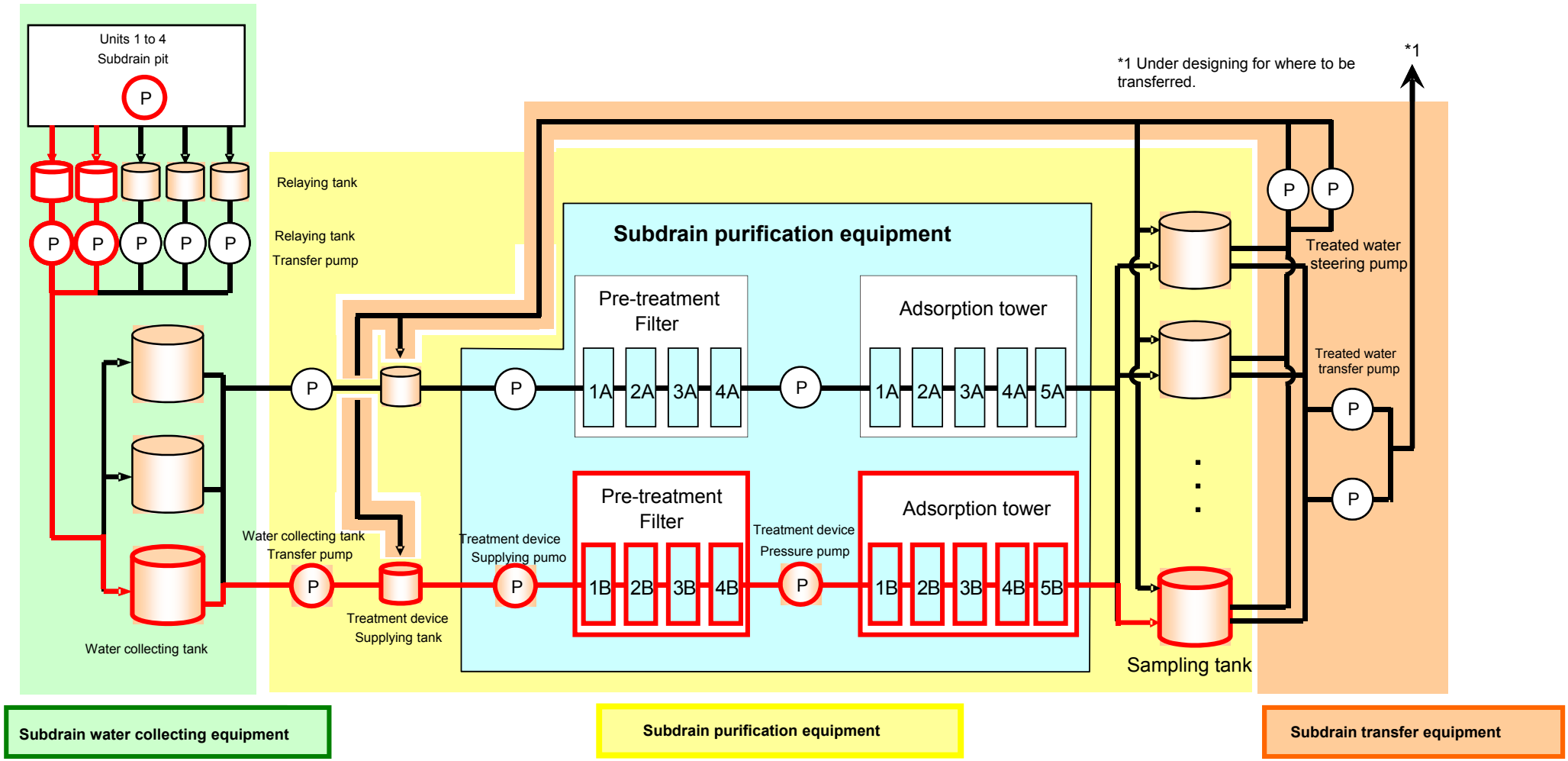
2-2. Verification test for purifying performance (subdrain water collecting equipment)

- Equipment to use for verification test for purifying performance (outlined in red)
  - Subdrain pit 14 pits (14 out of 42)
  - Relaying tank 2 tanks (2 out of 5)
  - Water collecting tank 1 tank (1 out of 3)

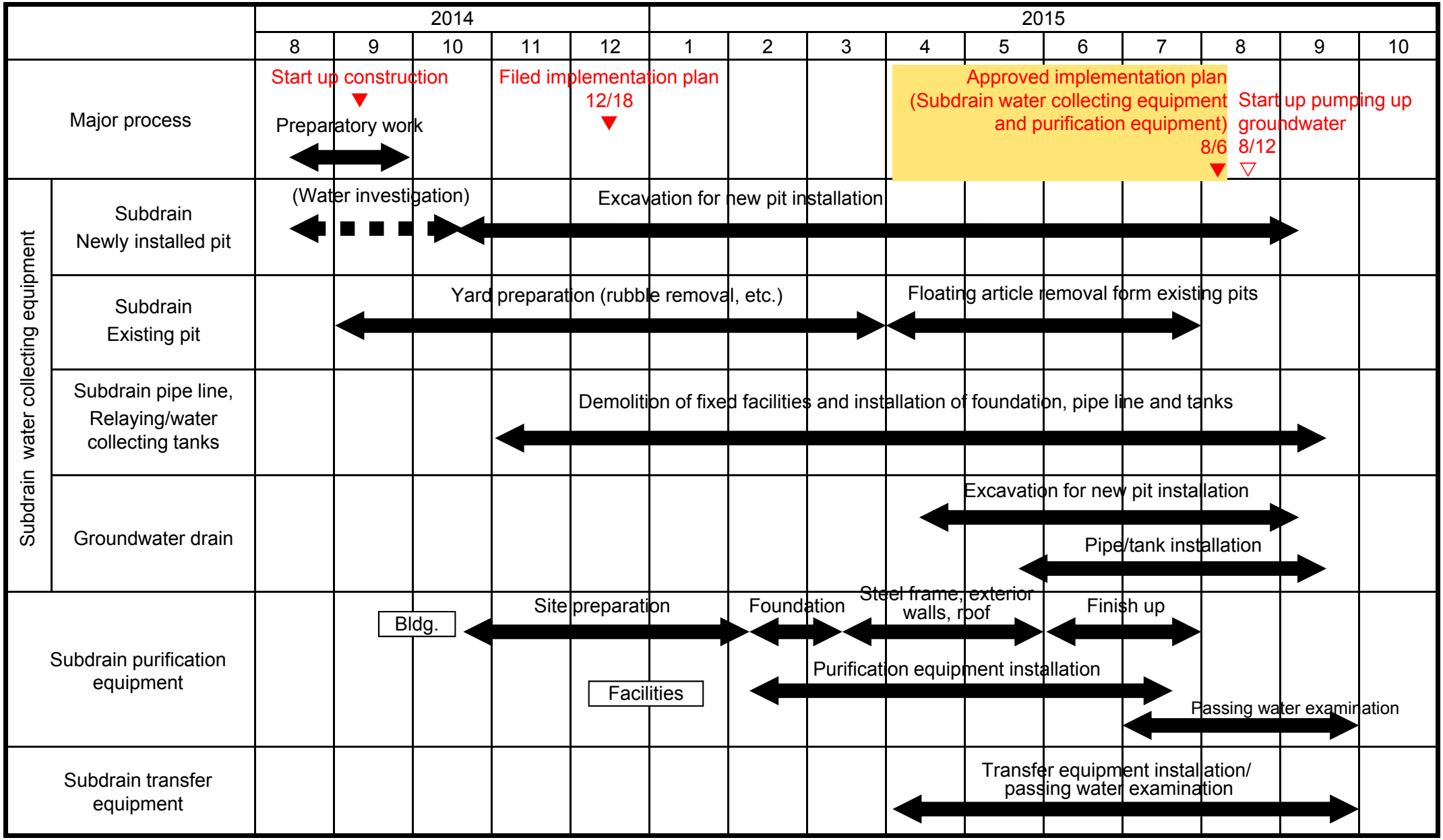


2-3. Verification test for purifying performance (scope of use)

- Equipment to use for verification test for purifying performance (Outlined in red)
  - Subdrain purification equipment 1 system (B system, 1 out of two)
  - Sampling tank 1 tank (1 out of 8)

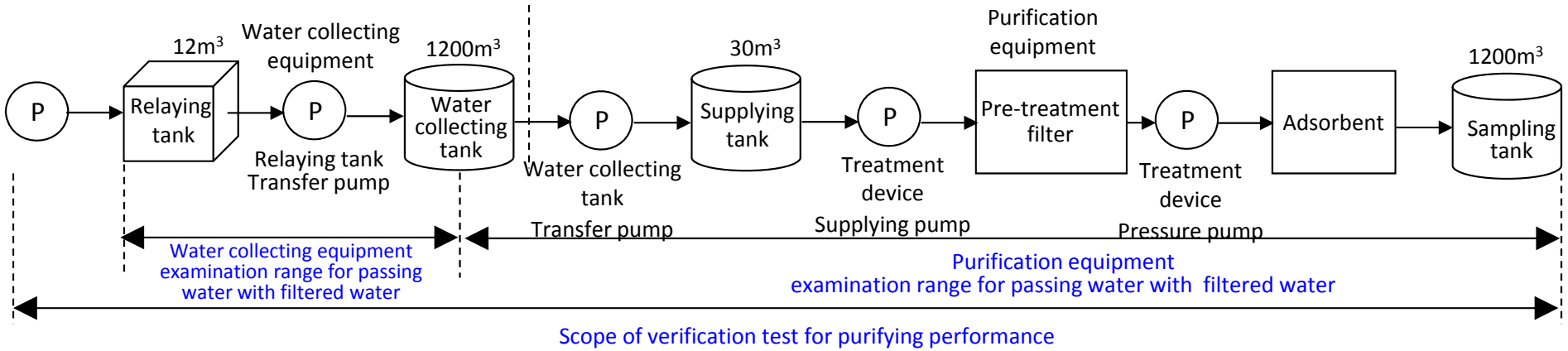


3-1 Overall schedule



Note: The schedule is subject to change in the course of adjustment with construction works.

3-2. Schedule on Verification test for purifying performance (incl. analysis)

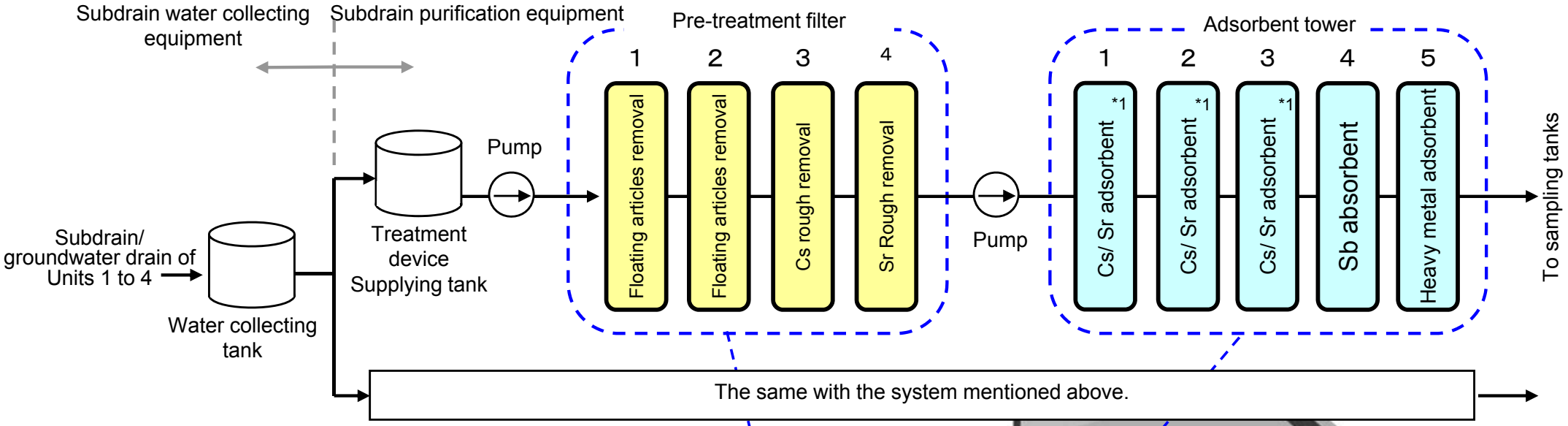


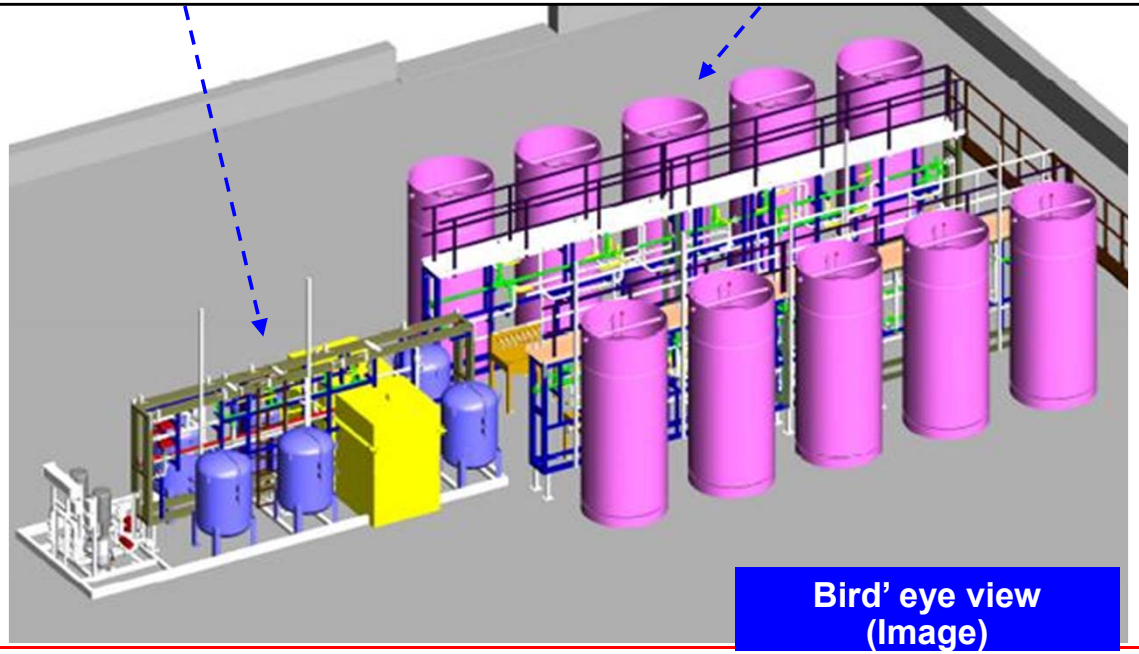
	June			July			August			September			October to
	Beg.	Mid.	Late	Beg.	Mid.	Late	Beg.	Mid.	Late	Beg.	Mid.	Late	
The whole	Installation works (System B)			Installation works (System A)									
Before-use Inspection							▼ Implementation plan approved on 8/6						
Water collecting/purification equipment	Passing water examination with filtered water						▽8/12 Start up of groundwater pump up from subdrain pits		▽8/20 Verification test for purifying performance				
Analysis *									Analysis (Cs, gross β, and H-3)				
									Detailed analysis (in-house)				
									Detailed analysis (external, third parties)				

+ analysis results will be reported in an timely manner.

[Reference] Subdrain purification equipment

System composition outline





Bird' eye view (Image)

*1 Filter which absorbs Cs or Sr, or both of Cs and Sr depending on water quality.
Verification test for purifying performance is planned to follow the below composition of towers.
1st tower: Sr adsorbent
2nd tower: Sr adsorbent
3rd tower: Cs&Sr adsorbent

[Reference] Main conditions/ specifications for subdrain water treatment facilities

Item	Contents
Design throughput (100% flow)	1,200m^3/day X 2 systems (purification facilities)
Radioactive concentration at the exit of facilities	Cs-137： 1 Bq/L or less *2 Sr-90 ： 1 Bq/L or less *2
Decontamination coefficient *1	Cs-137： 10^4 or more *2 Sr-90 ： 10^3 or more *2
Seismic class	Class B

*1 Index indicating a degree to which radioactive materials (contamination sources) are removed through decontamination treatment.
*2 Estimated value for major nuclides

[Reference] Installation construction of subdrain water treatment facilities

Newly installed subdrain pit N1 (excavation completed)

Water collecting tank installation

No 1 relaying tank installation

Exterior of the building (Southeast side)

Inside the building

Sampling tank installation