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South Dublin County Council
Planning Department
County Hall,
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05 May 2022

RE: PLANNING REF SD 21A/0346 ADDITIONAL INFORMATION RESPONSE

Dear Sir / Madam,

In response to the Decision Order Number: 0242 for Planning Reference No. SD 21A/0346 dated 22nd February 2022 we hereby submit our responses to the requests for additional information on the Water Services related items only:-

3.(i) The applicant is requested to submit a report showing surface water attenuation calculations for proposed development. The Applicant is requested to detail what attenuation in m3 is required and what is provided in m3. Include the site area, the area of different surface types such as, green roofs, buildings, roads, permeable paving, green areas in m2 and their respective run off coefficients. Also show the SAAR (Standard Annual Average Rainfall) value and site specific Met Eireann rain fall data. Show what surface water attenuation is provided and what is required in m3 for proposed development. All surface water should be attenuated by means of SuDs (Sustainable Drainage Systems) where possible. The applicant must include SuDs as part of their development. Examples of such SuDs features are as follows but not limited to.

- ***Permeable Paving***
- ***Grasscrete***
- ***Green Roofs***
- ***Swales***
- ***Tree pits***
- ***Planter boxes,***
- ***Other such SuDs***

If SuDs does not provide sufficient surface water attenuation, the Applicant is requested to show on a drawing how surface water will be attenuated for the proposed development. The drawing must show that surface water and foul water drainage systems are drawing to separate pipe networks.

Response:

The current application relates to 6 structures proposed within the confines of the existing Pfizer Pharmaceutical Campus, Grange Castle Business Park, Dublin 22. The existing campus was developed under planning ref S00A/0455, S01A/0205, S01A/0790, SD03A/0247, SD04A/0658, SD06A/0111, SD07A/0308, SD16A/0236, SD17A/0192, SD18A/0004 & SD18A/0269.

The existing campus is fully operational and currently serviced by an existing road network, foul network, surface water network and attenuation pond.

The existing Pfizer Pharmaceutical Campus site characteristics comprises a mix of roofs, roads, hardstanding and soft landscaping. Refer to Figure 1 below for an indication of the site existing layout and finished surfaces.

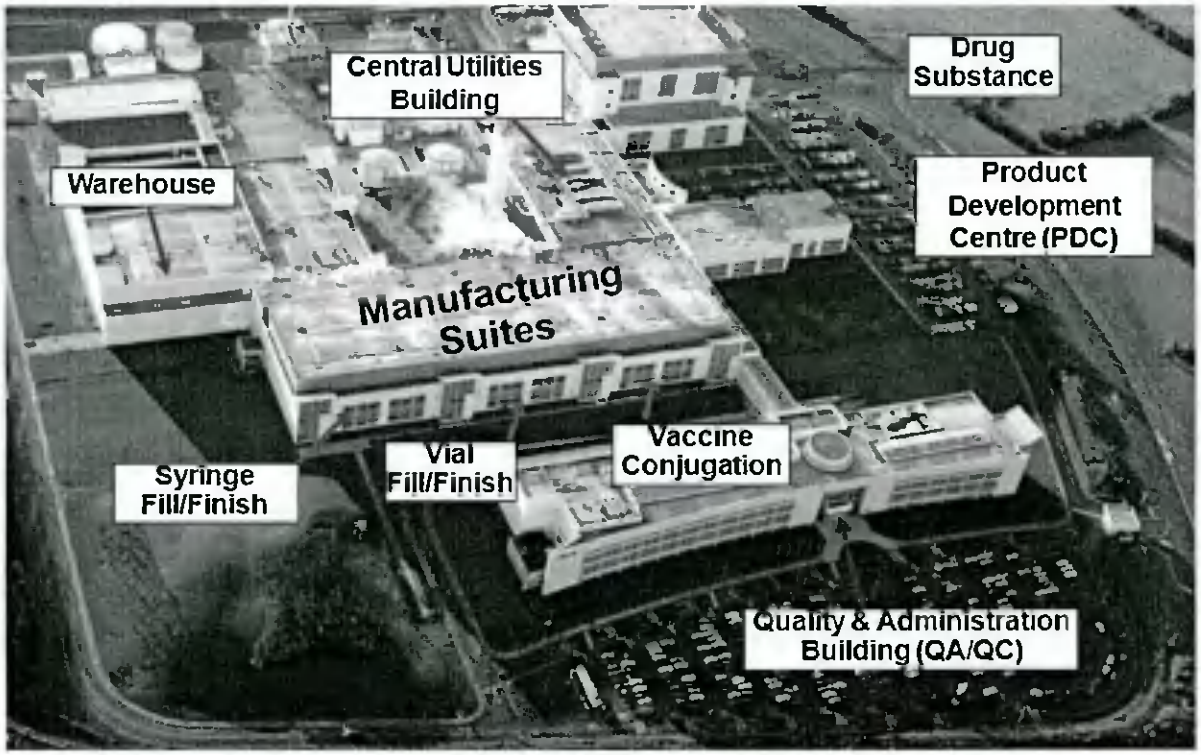


Figure 1 Existing Site Layout

A breakdown of the existing Pfizer Pharmaceutical Campus Site characteristics has been provided below.

Existing Catchment Characteristics			
Pfizer Grange Castle	**Area (m^2)**	**Runoff Coefficient**	**Effective Area (m^2)**
Roofs - (Draining to gullies)	50,810	1.00	50810.0
Roads - (Draining to gullies)	16,250	0.80	13000.0
Carparking - (Draining to gullies)	36,090	0.80	28872.0
Permeable Paving	5,480	0.70	3836.0
Concrete Footpaths/Yards - (Draining to gullies)	22,580	0.80	18064.0
Contractors Stone Compound (Clause 804 Assumed)	62,820	0.50	31410.0
Parks/Open Space	155,970	0.30	46791.0

Impermeable Contributing Area **19.278** Hectares

The existing attenuation pond, which is located to the north of the Pfizer Pharmaceutical Campus, was constructed as part of the original development works associated with the Grange Castle Business Park. The pond was designed to limit surface water discharge at a rate 1.2m^3/s from the developed Grange Castle lands to the Kilmahuddrick Stream.

The pond has a storage capacity of approximately 30000m^3 and was designed for the 100 year storm event. It currently caters for surface water runoff from approximately 85ha of hardstanding area.

There have been no recorded operational issues over the life of the pond thus far.

The current Pfizer Pharmaceutical Campus has five existing oil/petrol interceptors which currently screen out silts and hydrocarbons emanating from within it.

Refer to Figure 2 below for the location of the existing attenuation pond.

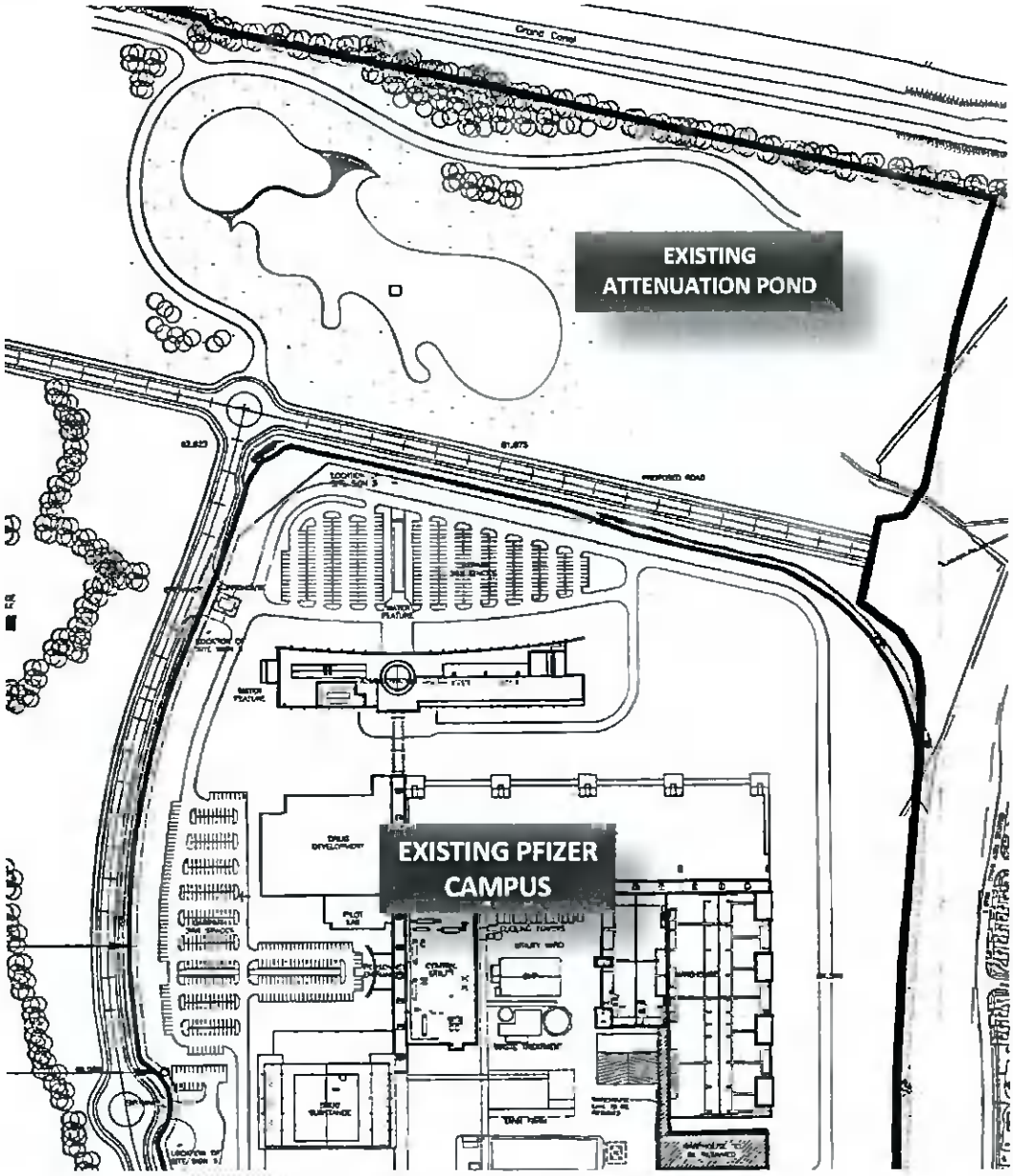


Figure 2 Existing Attenuation Basin Pond

The current proposals, include the installation of the following:

- Freezer Plant Platform Structure - 154m^2
- Airlock - 38m^2
- Data Centre Unit - 32m^2
- Pallet Storage Building - 41m^2
- Boiler Water Chemical Dosing Unit - 17m^2
- MRO Stores Building - 493m^2

Refer to Figure 3 below for the location of the proposed installations.

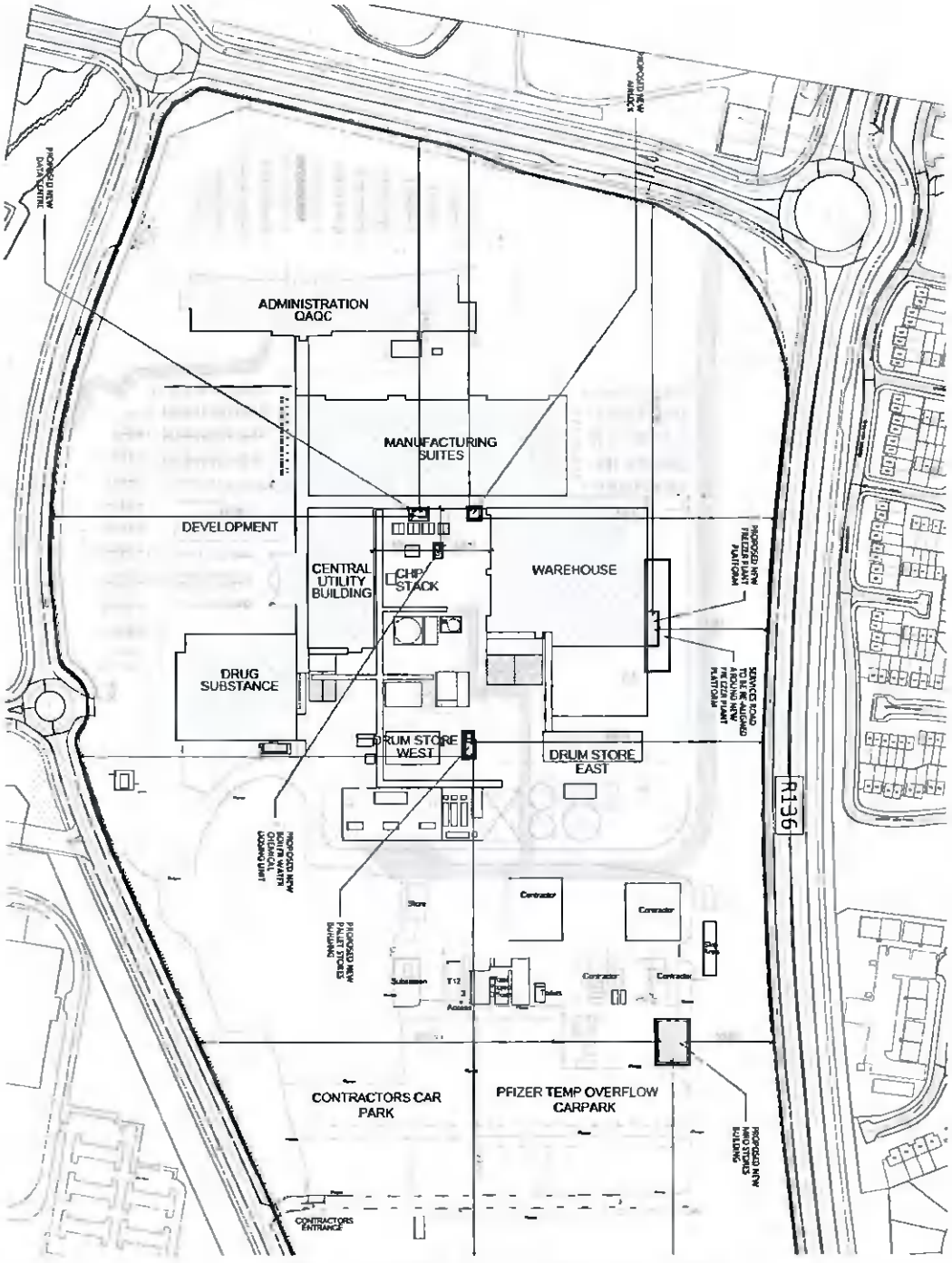


Figure 3 Proposed Installations Locations

Attenuation Requirement Assessment:

The proposed installations will be constructed within areas which are currently drained to and attenuated by the existing 30,000m³ capacity pond located within the Grange Castle Campus.

Five of the installations will be located within areas that are currently comprised of concrete paved yards (Freezer Plant Platform Structure, Airlock, Data Centre Unit, Pallet Storage Building, Boiler Water Chemical Dosing Unit) and one installation will be located within the existing stoned builders' compound (MRO Stores Building).

A comparison of the effect of the proposed five installations located in existing concrete yard areas on the existing and proposed Effective Impermeable Contributing areas indicate an increase of 56m².

Current Effective Impermeable Contributing Area					Total Effective Contributing Area (m²)
Proposed Installation Location	Area (m²)	Current Finish/Surface	Runoff Coefficient	Effective Area (m²)	
Freezer Plant Platform Structure	154	Concrete Yard	0.80	123.2	226
Airlock	38	Concrete Yard	0.60	30.4	
Data Centre Unit	32	Concrete Yard	0.80	25.6	
Pallet Storage Building	41	Concrete Yard	0.60	32.8	
Boiler Water Chemical Dosing Unit	17	Concrete Yard	0.80	13.6	

Proposed Effective Impermeable Contributing Area					Total Effective Contributing Area (m²)
Proposed Installation Location	Area (m²)	Proposed Finish/Surface	Runoff Coefficient	Effective Area (m²)	
Freezer Plant Platform Structure	154	Roof	1.00	154.0	282
Airlock	38	Roof	1.00	38.0	
Data Centre Unit	32	Roof	1.00	32.0	
Pallet Storage Building	41	Roof	1.00	41.0	
Boiler Water Chemical Dosing Unit	17	Roof	1.00	17.0	

The proposed 0.03% increase to the existing overall effective impermeable area (19.3 hectares) for the proposed five installations located in the existing concrete yard areas is considered to be negligible and will be sufficiently catered for within the existing 30000m³ off-site attenuation pond.

Currently, the existing builders' compound, located to the south of the main campus buildings and yards drains directly to ground via the in situ hardstanding stone material. Runoff from this stoned compound is catered for within the existing 30000m³ off-site attenuation pond. A comparison of the effect of the proposed MRO Stores Building installation located within the existing stoned builders' compound on the existing and proposed Effective Impermeable Contributing areas indicate an increase of 247m².

Current Effective Impermeable Contributing Area					Total Effective Contributing Area (m²)
Proposed Installation Location	Area (m²)	Current Finish/Surface	Runoff Coefficient	Effective Area (m²)	
MRO Stores Building	493	Stone Compound	0.50	246.5	247

Proposed Effective Impermeable Contributing Area					Total Effective Contributing Area (m²)
Proposed Installation Location	Area (m²)	Proposed Finish/Surface	Runoff Coefficient	Effective Area (m²)	
MRO Stores Building	493	Roof	1.00	493.0	493

An option of providing a soakaway adjacent to the proposed MRO Stores building was considered, but poor infiltration rates excluded this option as viable. Infiltration results are provided in Appendix A. As a result of an absence of an existing surface water network or local watercourse in close proximity which could be used as a discharge point it is proposed that rainfall runoff would fall directly to the existing surrounding builders' compound. The proposed 0.13% increase to the existing overall effective impermeable area (19.3 hectares) for the proposed MRO Stores located in the existing builders' compound is considered to be negligible and will be sufficiently catered for within the existing 30000m³ off-site attenuation pond.

SuDS Requirement Assessment:

The existing Pfizer Pharmaceutical Campus is fully functional high-tech facility with very specific requirements in relation to sterile/uncontaminated facilities and manufacturing processes.

The five proposed installations that will be constructed within footprint of the existing concrete yard area associated with the Manufacturing Suite, Warehouse and Central Utilities Building are the Freezer Plant Platform Structure, Airlock, Data Centre Unit, Pallet Storage Building and Boiler Water Chemical Dosing Unit. These concrete paved areas are part of the existing facility which is currently fully operational and functional, and introduction of SuDS features to these are therefore not feasible.

In relation to the proposed MRO Stores Building which will be installed within the area that is currently part of the stoned builders' compound the SuDS assessment is as follows:

SuDS/Green Infrastructure Considered for MRO Stores Building		
SuDS Measure	**Measure Adopted**	**Rationale for Selecting/Not Selecting Measure**
Swales	NO	Not Selected - Site constraints, No available green space, site deemed not suitable for infiltration
Tree Pits	NO	Not Selected - Site constraints, distance of 5m above ground from buildings not achievable, site deemed not suitable for infiltration
Rainwater Butts	NO	Not Selected - Not suitable for site, no requirement for potable /non-potable water supply
Rainwater Harvesting	NO	Not Selected - Not suitable for site, no requirement for potable /non-potable water supply
Soakaways	NO	Not Selected - Site deemed not suitable for infiltration
Infiltration Trenches	NO	Not Selected - Site deemed not suitable for infiltration
Permeable Pavement	NO	Not Selected - Not suitable for site, Storage Building comprises a roof and concrete floor slab with no external paved area
Green Roofs	NO	Not Selected - Not suitable for site & cost, Storage Building comprises pitched and cladded roof structure
Blue Roofs	NO	Not Selected - Not suitable for site & cost, Storage Building comprises pitched and cladded roof structure
Filter Drain/Filter Strips	NO	Not Selected - Site deemed not suitable for infiltration
Bioretention Systems	NO	Not Selected - Site constraints, No available green space, site deemed not suitable for infiltration

As indicated above, of the range of SuDS measure considered, primarily due to the confined nature of the site and poor infiltration results, non were deemed feasible for the proposed MRO Stores Building. Infiltration results are provided in Appendix A.

In addition, and as stated previously, there are five existing oil/petrol interceptors which currently screen out silts and hydrocarbons emanating from within the site.

There is no requirement for any foul drainage associated with any of the proposed structures relative to the current application.

In summary, it has been demonstrated that the surface water runoff from the proposed installations is sufficiently catered for within the existing attenuation infrastructure and therefore no additional attenuation measures are necessary. Detailed consideration has also been given with regard to the usual range of SuDS measures typically suited for new developments. However, given the small scale of proposed works and also particular constraints and sensitivities/sterile nature of the existing of the existing Pfizer Pharmaceutical Facility operations, these measures, whilst not necessary given the existing attenuation provisions, are also deemed not to be appropriate and/or feasible for the five proposed installations currently located within the existing campus concrete yard area and the proposed MRO Building currently located within the stoned contractors' compound area.

Yours Sincerely,

Greg Daly
FConsEI BScEng CEng MIEI MIStructE MCIArb MBA
Chartered Engineer-Registered Consulting Engineer
Managing Director

Appendix A *Soakaway Infiltration Test Results BRE Digest 365*

Soakaway Infiltration Test

Project No.: 21-1707
Site: Pfizer MRO Expansion
Test Location: SA01
Test Date: 24 January 2022

CAUSEWAY GEOTECH

	width (m)	length (m)
test pit top dimensions	0.50	1.40
test pit base dimensions	0.45	1.00

Analysis using method as described in BRE Digest 365 and CIRIA Report C697-The SUDS Manual

test pit depth (m) 1.20

depth to groundwater before adding water (m) = Dry

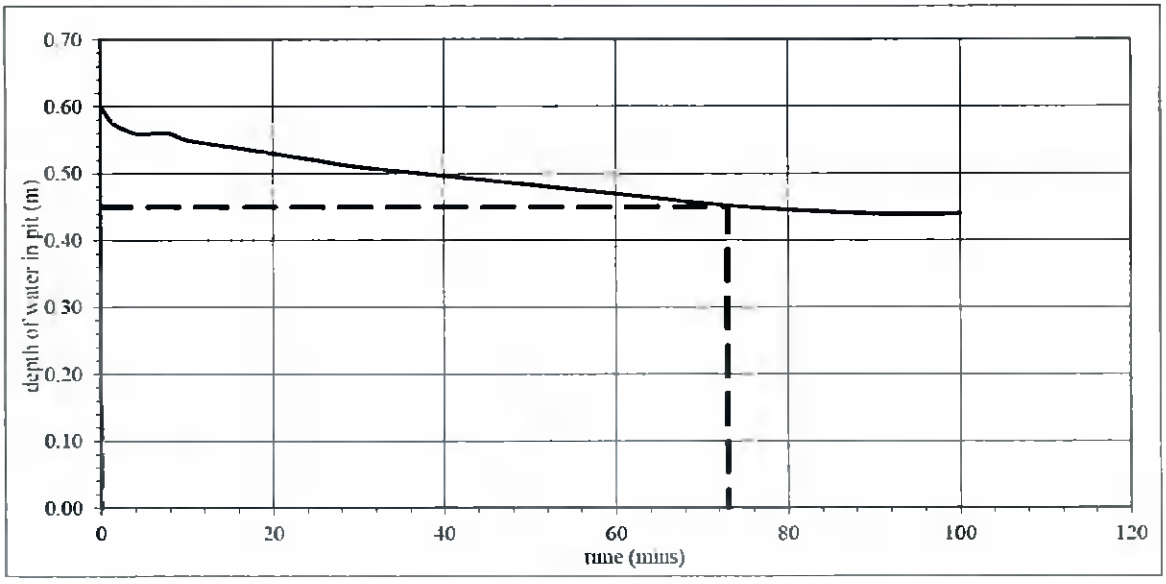
time (mins)	depth to water surface (m)	depth of water in pit (m)
0	0.60	0.60
1	0.62	0.58
2	0.63	0.57
4	0.64	0.56
6	0.64	0.56
8	0.64	0.56
10	0.65	0.55
15	0.66	0.54
20	0.67	0.53
25	0.68	0.52
30	0.69	0.51
45	0.71	0.49
60	0.73	0.47
75	0.75	0.45
90	0.76	0.44
100	0.76	0.44

From graph below:
test start - 75% depth at
0.45 m water depth
time is 73.0 minutes

test end - 25% depth at
0.15 m water depth
time is not determined

infiltration rate (q) is very low

time (mins)	depth to water (m)	depth of water in pit (m)	time elapsed (mins)	volume of water lost (m^3)	Area of walls and base at 50% drop (m^2)	q (m/min)	q (m/h)
73	0.75	0.45		0.15	1.36		
	1.05	0.15					



CAUSEWAY GEOTECH

Project No. 21-1707	**Project Name:** Pfizer MRO Expansion		**Trial Pit ID** SA02
Coordinates 704432.16 E 731322.57 N	**Client:** Pfizer		
Method: Soakaway Prt	**Client's Representative:** MORCE		Sheet 1 of 1 Scale 1:25
Plant: 2.5T Tracked Excavator	**Elevation** 77.97 mOD	**Date:** 25/01/2022	**Logger:** MRG	FINAL

Depth (m)	Sample / Tests	Field Records	Level (mOD)	Depth (m)	Legend	Description	Water
0.60	B4					MADE GROUND: Blackish brown slightly sandy gravelly CLAY with high cobble content, fragments of plastic, brick and concrete. Sand is fine to coarse. Gravel is subangular to subrounded fine to medium. Cobbles are subangular of mixed lithologies.	
0.60	ES1						
1.00	ES2						
1.20	BS						
1.50	ES3		76.47	1.50		End of trial pit at 1.50m	

Water Strikes			
Struck at (m)	Remarks		
		Depth: 1.50	**Remarks:** No groundwater encountered.
		Width: 0.60	
		Length: 2.10	
		Stability: Unstable	**Termination Reason:** Terminated at scheduled depth.
			Last Updated 09/03/2022

AGS