

# joc consultants ltd

Chartered Civil & Environmental  
Engineering Consultants

16<sup>th</sup> May 2017

Your reference:

Our reference: 17/013/JO'C

The Development Team/Planning  
Yorkshire Water  
Western House  
Western Way  
Halifax Road  
BRADFORD  
West Yorkshire  
BD6 2LZ

**For the attention of Jim McGlade**

Dear Mr McGlade,

**Turnpike Filling Station, Wakefield Road, Barnsley, S75 6JX**  
**Planning application number: 2015/1480**

I refer to our telephone conversation on 10<sup>th</sup> May 2017 concerning the above site.

We have considered the options for surface water disposal from the site and have reached the following conclusions:

*1. Disposal by infiltration (soakaway)*

We do not consider that infiltration drainage is appropriate at a road fuel filling station owing to the presence of potential contamination. This view is supported by section 3.25(d) in the Building Regulations Approved Document H3 which states:

*'Infiltration devices should not be built...(d) where the presence of any contamination in the run-off could result in pollution of groundwater source or resource.'*

*2. Disposal to a watercourse*

There is no watercourse to which the site has access for the disposal of surface water. We have discussed with Barnsley Highways department the possibility of a surface water discharge to the highway drain adjacent to the site in Shaw Lane, but the authority has confirmed in its email dated 10<sup>th</sup> May 2017 (reproduced at Annex A) that it will not permit any such discharge.

*3. Disposal to the foul sewer*

In the absence of other feasible options we request that Yorkshire Water permit a controlled discharge to the 225mm foul sewer in Wakefield Road at a rate not exceeding 11.3 l/s, which is 70% of the calculated 1 in 1 year brownfield run-off rate from the whole site, as shown in the calculation at Annex B. Attenuation storage will be provided to retain the excess volume from the critical storm duration which is approximately 33 minutes, based on the proposed discharge rate, as shown in Figure 1 at Annex C. Tables 1 and 2, (also at Annex C) show the required attenuation storage to be 21m<sup>3</sup> based on the average of the central and upper end climate change allowances of 10% and 20% respectively.

Given that the site historically drained to the foul sewer with no restriction to surface water run-off, I trust you will agree that the development represents an improvement compared with the previous drainage regime.

I shall be grateful if you will confirm that the proposed discharge to the sewer is acceptable.

Yours sincerely,

John O'Connor  
Director

**ANNEX A**

**Copy of email dated 10<sup>th</sup> May 2017 from Barnsley MBC**

## John O'Connor

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**From:** Atkins , Wayne [WayneAtkins@barnsley.gov.uk]  
**Sent:** 10 May 2017 09:48  
**To:** 'John O'Connor'  
**Cc:** 'Tony Stead'; Grayson , Ian; McGrath , Philip  
**Subject:** RE: Turnpike Filing Station S75 6JX

John,

Unfortunately we, as Highway Authority have a policy of not allowing third parties to discharge flows from private land into the Highway Drainage network. This is to prevent any disputes in the future regarding ownership and responsibility for repairs and any possible pollution incidents.

If you need any further information please let me know.

Regards

Wayne Atkins  
Principal Engineer – Drainage  
Environment & Transport  
Place Directorate  
Barnsley Metropolitan Borough Council

Telephone: 01226 772182  
E-mail: [wayneatkins@barnsley.gov.uk](mailto:wayneatkins@barnsley.gov.uk)

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**From:** John O'Connor [<mailto:jocconsultants@btconnect.com>]  
**Sent:** 10 May 2017 09:28  
**To:** Atkins , Wayne  
**Cc:** 'Tony Stead'  
**Subject:** Turnpike Filing Station S75 6JX

Wayne,

[Planning Application No: 2015/1480](#)

Further to our telephone conversation I am writing to you concerning the redevelopment of the above site and I attach an copy of the sewer plan for your reference.

We have consulted Yorkshire Water regarding the discharge of surface water from the site and they have refused to accept surface water from the site into the 225mm foul sewer in Wakefield Road until all other options have been discounted. They mentioned a highway drain running parallel to Shaw Lane which passes the site before crossing Wakefield Road and suggested this might be an option for surface water disposal. I understand from our conversation however, that the highway authority will not permit surface water from the site to enter the highway drain and I shall be grateful if you will confirm this in writing, so that we may revert to Yorkshire Water.

Regards,

John O'Connor  
Director

**joc consultants ltd**

Park Farm House  
Leathley Lane  
Leathley

Otley  
LS21 2JU

Tel/fax: 0113 284 2838

[www.jocconsultants.co.uk](http://www.jocconsultants.co.uk)

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## **ANNEX B**

### **Calculation of brownfield run-off rate**

## 17/013: Turnpike Filling Station, Barnsley

### Estimate of peak run-off rate

16-May-17

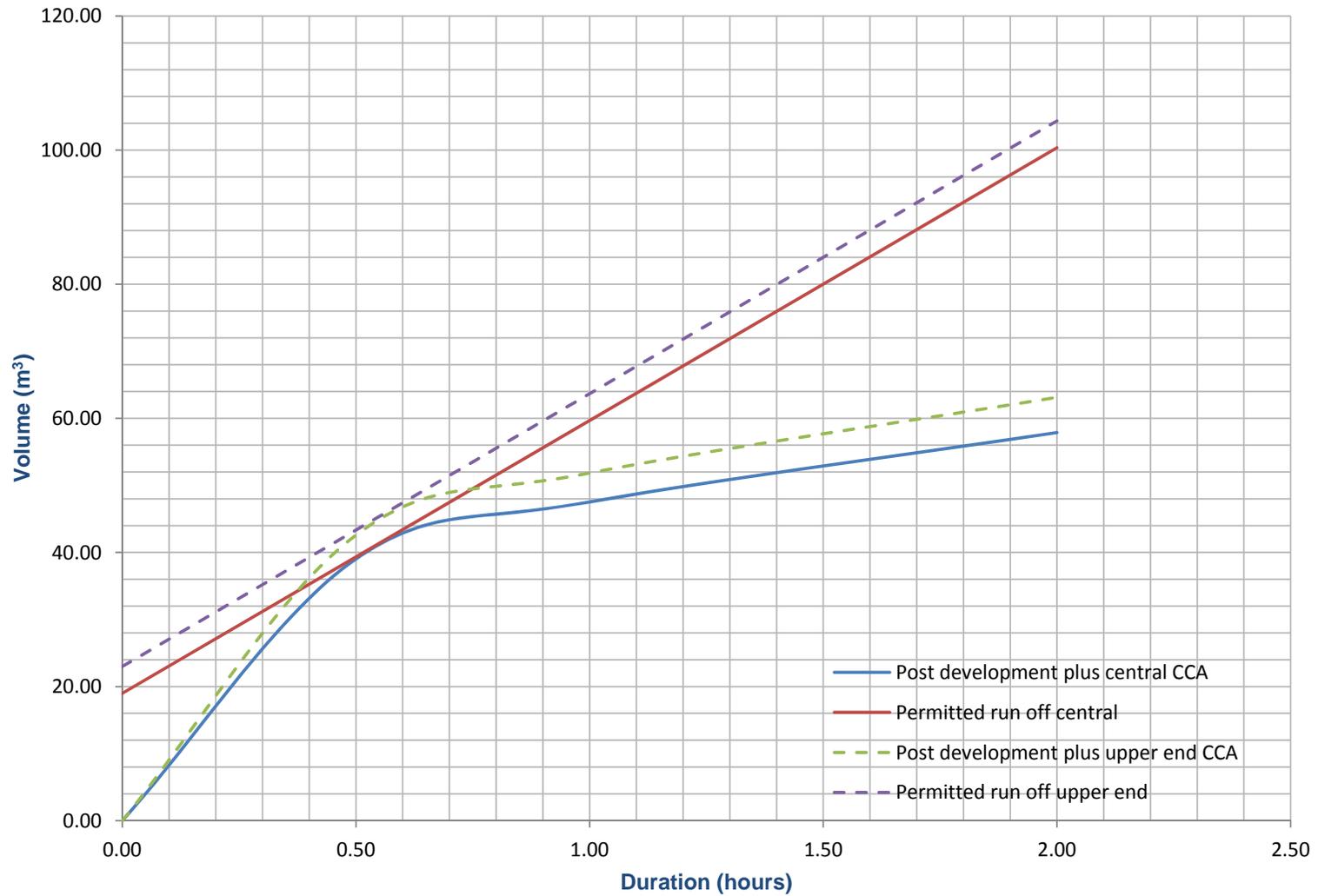
NGR	433440	410590	
Catchment area	1624.00 m <sup>2</sup>		
% Impermeable (PIMP)	100		
Area draining to sewer	1624.00 m <sup>2</sup>		
Length of catchment: L	56 m	approx	
Catchment surface	Impermeable		
C <sub>v</sub>	1.00		
Time of entry	4 min	estimated	
Time of flow	1.00 min	estimated	
Time of concentration T <sub>c</sub>	5.00 min		
Check for 1-year event:			
M1-5min rainfall	3.14 mm		
Point intensity	37.69 mm/h		
ARF	0.95		
Average intensity	35.80 mm/h		
Peak flow rate	16 l/s		
70% of peak flow rate	11.31 l/s		

**ANNEX C**

**Figure 1**

**Tables 1 & 2**

**Figure 1: Surface water run-off from a 3.3% A.E.P. rainfall event including CCA  
(post-development- whole site)**



**Table 1: Post-development rapid response run-off from impervious area (3.3% A.E.P. rainfall including central CCA)**

Duration hours	Rainfall at Site mm	Area (m <sup>2</sup> )			Volume (m <sup>3</sup> )			Controlled run off m <sup>3</sup>	Tangent m <sup>3</sup>
		Impervious Area (ha)	Pervious Area (ha)	Total Area (ha)	Impervious Area	Pervious Area	Run-off Volume		
		C <sub>v</sub> 95.0%	C <sub>v</sub> 0.0%					Controlled rate (l/s) 11.3	
0.00	0.0	0.16	0.00	0.16	0.00	0.00	0.00	0.00	19.00
0.50	25.3	0.16	0.00	0.16	39.03	0.00	39.03	20.34	39.34
1.00	30.8	0.16	0.00	0.16	47.52	0.00	47.52	40.68	59.68
2.00	37.5	0.16	0.00	0.16	57.87	0.00	57.87	81.36	100.36
3.00	42.1	0.16	0.00	0.16	65.00	0.00	65.00	122.04	141.04
4.00	45.7	0.16	0.00	0.16	70.43	0.00	70.43	162.72	181.72
6.00	51.2	0.16	0.00	0.16	78.91	0.00	78.91	244.08	263.08
8.00	55.4	0.16	0.00	0.16	85.53	0.00	85.53	325.44	344.44
12.00	62.0	0.16	0.00	0.16	95.72	0.00	95.72	488.16	507.16
18.00	71.9	0.16	0.00	0.16	110.99	0.00	110.99	732.24	751.24
24.00	79.9	0.16	0.00	0.16	123.21	0.00	123.21	976.32	995.32
36.00	92.5	0.16	0.00	0.16	142.72	0.00	142.72	1464.48	1483.48
48.00	102.7	0.16	0.00	0.16	158.51	0.00	158.51	1952.64	1971.64
72.00	110.4	0.16	0.00	0.16	170.39	0.00	170.39	2928.96	2947.96
96.00	116.3	0.16	0.00	0.16	179.38	0.00	179.38	3905.28	3924.28
144.00	125.0	0.16	0.00	0.16	192.79	0.00	192.79	5857.92	5876.92
192.00	131.6	0.16	0.00	0.16	202.97	0.00	202.97	7810.56	7829.56
Total Storage Requirement (m <sup>3</sup> )									19.00

**Table 2: Post-development rapid response run-off from impervious area (3.3% A.E.P. rainfall including upper end CCA)**

Duration hours	Rainfall at Site mm	Area (m <sup>2</sup> )			Volume (m <sup>3</sup> )			Controlled run off m <sup>3</sup>	Tangent m <sup>3</sup>
		Impervious Area (ha)	Pervious Area (ha)	Total Area (ha)	Impervious Area	Pervious Area	Run-off Volume		
		C <sub>v</sub> Impervious	C <sub>v</sub> 0.0%					Controlled rate (l/s) 11.3	
0.0	0.0	0.16	0.00	0.16	0.00	0.00	0.00	0.00	23.00
0.5	27.6	0.16	0.00	0.16	42.58	0.00	42.58	20.34	43.34
1.0	33.6	0.16	0.00	0.16	51.84	0.00	51.84	40.68	63.68
2.0	40.9	0.16	0.00	0.16	63.13	0.00	63.13	81.36	104.36
3.0	46.0	0.16	0.00	0.16	70.91	0.00	70.91	122.04	145.04
4.0	49.8	0.16	0.00	0.16	76.83	0.00	76.83	162.72	185.72
6.0	55.8	0.16	0.00	0.16	86.09	0.00	86.09	244.08	267.08
8.0	60.5	0.16	0.00	0.16	93.31	0.00	93.31	325.44	348.44
12.0	67.7	0.16	0.00	0.16	104.42	0.00	104.42	488.16	511.16
18.0	78.5	0.16	0.00	0.16	121.08	0.00	121.08	732.24	755.24
24.0	87.1	0.16	0.00	0.16	134.41	0.00	134.41	976.32	999.32
36.0	100.9	0.16	0.00	0.16	155.70	0.00	155.70	1464.48	1487.48
48.0	112.1	0.16	0.00	0.16	172.92	0.00	172.92	1952.64	1975.64
72.0	120.5	0.16	0.00	0.16	185.88	0.00	185.88	2928.96	2951.96
96.0	126.8	0.16	0.00	0.16	195.69	0.00	195.69	3905.28	3928.28
144.0	136.3	0.16	0.00	0.16	210.31	0.00	210.31	5857.92	5880.92
192.0	143.5	0.16	0.00	0.16	221.42	0.00	221.42	7810.56	7833.56
Total Storage Requirement (m <sup>3</sup> )									23.00

Average: 21.00