Attachment No. A.1

Supporting Information

AMENDMENT DETAILS	DATE

T.J.O'CONNOR & ASSOCIATES
CONSULTING ENGINEERS
CORRIG HOUSE, CORRIG ROAD, SANDYFORD, DUBLIN 18.
Tel: 295 2321 Fax: 295 4541

PROJECT: KILCORMAC WWTW – DISCHARGE LICENCE APPLICATION

CLIENT: OFFALY COUNTY COUNCIL

DRAWING TITLE: LAYOUT MAP

SCALE: NTS @ A3	JOB NO: 2873	DRAWING NO: KILCORMAC–01
DATE: APR'08	DRAWN BY: D.D	

AMENDMENT DETAILS	DATE

T.J.O'CONNOR & ASSOCIATES
CONSULTING ENGINEERS
CORRIG HOUSE, CORRIG ROAD, SANDYFORD, DUBLIN 18.
Tel: 295 2321 Fax: 295 4541

PROJECT: KILCORMAC WWTW – DISCHARGE LICENCE APPLICATION

CLIENT: OFFALY COUNTY COUNCIL

DRAWING TITLE: SITE LAYOUT

SCALE: 1:500 @ A3	JOB NO: 2873	DRAWING NO: KILCORMAC–02
DATE: APR'08	DRAWN BY: L.M.	

\\P3-062\projects\2873 Kilcormac WWTW - Discharge Licence Application\Kilcormac\2873-KILCORMAC-02.dwg

Attachment No. B.1

Drawing of the agglomeration served by the waste water works showing the boundary.

FRANKFORD
Cill Chormaic

PARK
An Pháirc

BALLYCOLLIN LOWER
Baile Uí Choileáin Íochtarach

KILGOLAN LOW
Coill an Gha

Kilcormac or Frankford

Silver River
Abhainn an Airgid

Buckley's Hole

Sports Ground

Sports Ground
School

Arthur's Well

St. Cormac's Well

Stepping Stones

Quarry

Convent

Cemetery

Park Hills

Park Wood

Spring Gardens

Spring Garden House

Church (Cobh) Carmelite of Cemetery

Bunnaboy Bridge

AMENDMENT DETAILS	DATE

T.J.O'CONNOR & ASSOCIATES
CONSULTING ENGINEERS
CORRIG HOUSE, CORRIG ROAD, SANDYFORD, DUBLIN 18.
Tel: 295 2321 Fax: 295 4541

PROJECT: KILCORMAC WWTW – DISCHARGE LICENCE APPLICATION

CLIENT: OFFALY COUNTY COUNCIL

DRAWING TITLE: AGGLOMERATION MAP

SCALE: NOT TO SCALE	JOB NO:	DRAWING NO:
DATE: APR'08	DRAWN BY: D.D	2873	KILCORMAC–03

Attachment No. B.2

Drawings of the site boundary and overall site plan, including labelled discharge, monitoring and sampling points.

SW 1
PRIMARY DISCHARGE POINT
E: 218088, N:214314

SW 2
SECONDARY DISCHARGE POINT
E: 218106, N:214281

SW 3
STORM WATER OVERFLOW
E: 218130, N:214242

EFFLUENT SAMPLING POINT
E: 218086, N:214310

INFLUENT SAMPLING POINT
E: 218111, N:214241

SITE BOUNDARY

WASTEWATER TREATMENT PLANT
E: 218094, N:214272

SILVER RIVER

TO KILCORMAC

AMENDMENT DETAILS	DATE

T.J.O'CONNOR & ASSOCIATES
CONSULTING ENGINEERS
CORRIG HOUSE, CORRIG ROAD, SANDYFORD, DUBLIN 18.
Tel: 295 2321 Fax: 295 4541

PROJECT: KILCORMAC WWTW – DISCHARGE LICENCE APPLICATION

CLIENT: OFFALY COUNTY COUNCIL

DRAWING TITLE: SITE BOUNDARY MAP

SCALE: 1:500 @ A3	JOB NO: 2873	DRAWING NO: KILCORMAC–04
DATE: APR'08	DRAWN BY: D.D	

N

aSW1d
DOWNSTREAM SAMPLING POINT
E:217720, N:214683

aSW1u
UPTREAM SAMPLING POINT
E:218555, N:214098

FRANKFORD
Cill Chormaic

Kilcormac or Frankford

PARK
An Pháirc

BALLYCOLLIN LOWER
Baile Uí Choileáin Íochtarach

KILGOLAN LOW
Coill an Gho

Buckley's Hole

Silver River

Arthur's Well

St. Cormac's Well

Stepping Stones

Quarry

Carnel

Sports Ground

Sports Ground
School

Park Hills

Park Wood

River Brosna

St. Cormacs Park

Cemetery

AMENDMENT DETAILS	DATE

T.J.O'CONNOR & ASSOCIATES
CONSULTING ENGINEERS
CORRIG HOUSE, CORRIG ROAD, SANDYFORD, DUBLIN 18.
Tel: 295 2321 Fax: 295 4541

PROJECT: KILCORMAC WWTW – DISCHARGE LICENCE APPLICATION

CLIENT: OFFALY COUNTY COUNCIL

DRAWING TITLE: SAMPLING POINTS

SCALE: NTS @ A3	JOB NO: 2873	DRAWING NO: KILCORMAC–05
DATE: APR'08	DRAWN BY: D.D	

Attachment No. B.3

Drawings of the primary discharge point, including labelled monitoring and sampling points associated with the discharge point.

AMENDMENT DETAILS	DATE

T.J.O'CONNOR & ASSOCIATES
CONSULTING ENGINEERS
CORRIG HOUSE, CORRIG ROAD, SANDYFORD, DUBLIN 18.
Tel: 295 2321 Fax: 295 4541

PROJECT: KILCORMAC WWTW – DISCHARGE LICENCE APPLICATION

CLIENT: OFFALY COUNTY COUNCIL

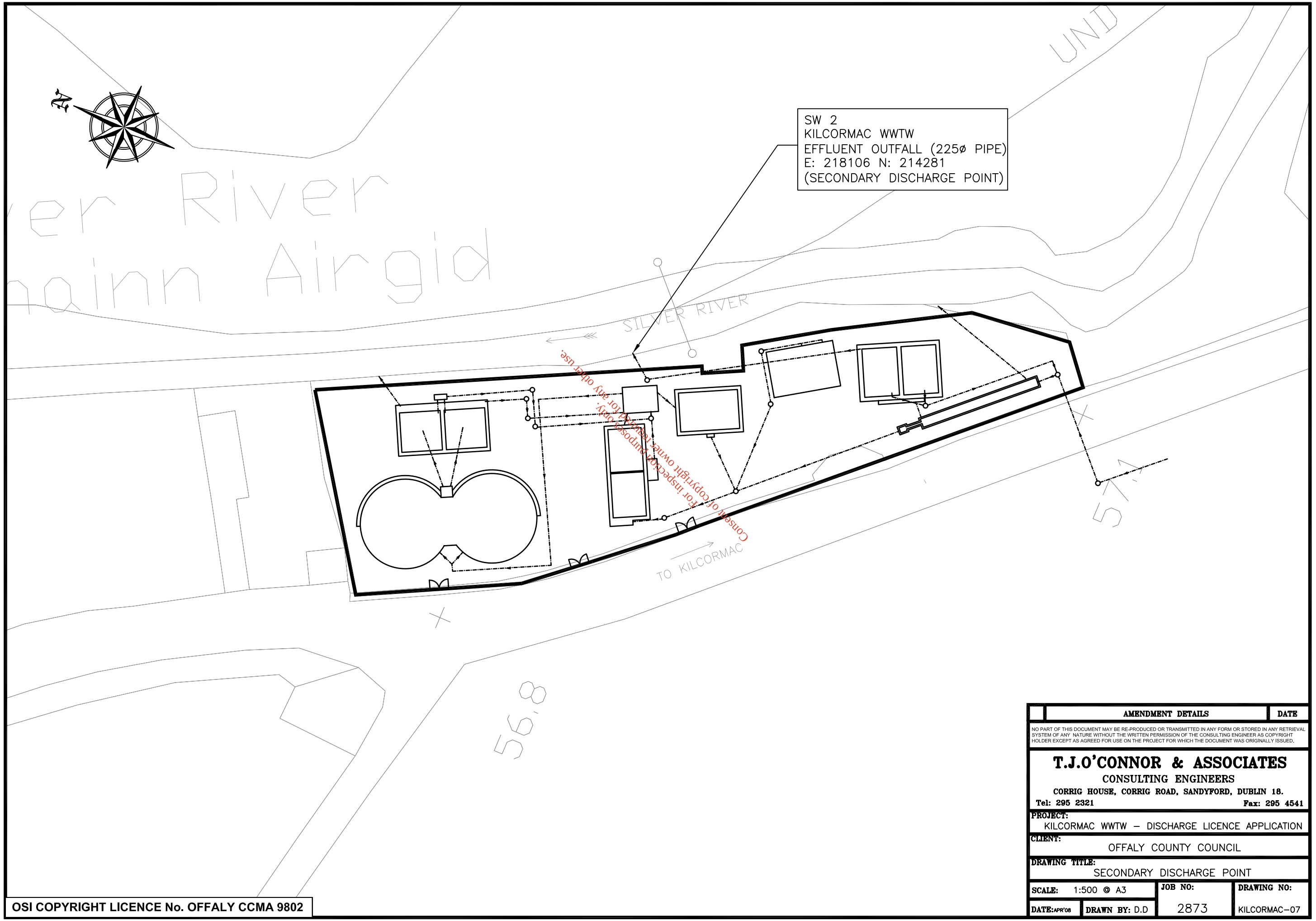
DRAWING TITLE: PRIMARY DISCHARGE POINT

SCALE: 1:500 @ A3	JOB NO: 2873	DRAWING NO: KILCORMAC–06
DATE: APR'08	DRAWN BY: D.D	

\\P3-062\projects\2873 Kilcormac WWTW - Discharge Licence Application\Kilcormac\2873-KILCORMAC-06 (B3).dwg

Attachment No. B.4

Drawings of the secondary discharge point(s), including labelled monitoring and sampling points associated with the discharge point(s).



AMENDMENT DETAILS	DATE

T.J.O'CONNOR & ASSOCIATES
CONSULTING ENGINEERS
CORRIG HOUSE, CORRIG ROAD, SANDYFORD, DUBLIN 18.
Tel: 295 2321 Fax: 295 4541

PROJECT: KILCORMAC WWTW – DISCHARGE LICENCE APPLICATION

CLIENT: OFFALY COUNTY COUNCIL

DRAWING TITLE: SECONDARY DISCHARGE POINT

SCALE: 1:500 @ A3		JOB NO: 2873	DRAWING NO: KILCORMAC–07
DATE: APR'08	DRAWN BY: D.D		

Attachment No. B.5

Drawings of storm water overflow point(s) associated with the waste water works, including labelled monitoring and sampling points associated with the discharge point(s).

N

SW 1
WWTP (PRIMARY)
E: 218088 N: 214314

SW 2
WWTP (SECONDARY)
E: 218106 N: 214281

SW 3
WWTP
E: 218130, N:214242

SW 4
BROUGHALL ROAD
E: 218287 N: 214182

FRANKFORD
Cill Chormaic

PARK
An Pháirc

BALLYCOLLIN LOWER
Baile Uí Choileáin Íochtarach

KILGOLAN L
Coill an G

Kilcormac or Frankford

Silver River
Abhainn an Airgid

AMENDMENT DETAILS	DATE

T.J.O'CONNOR & ASSOCIATES
CONSULTING ENGINEERS
CORRIG HOUSE, CORRIG ROAD, SANDYFORD, DUBLIN 18.
Tel: 295 2321 Fax: 295 4541

PROJECT: KILCORMAC WWTW – DISCHARGE LICENCE APPLICATION

CLIENT: OFFALY COUNTY COUNCIL

DRAWING TITLE: STORM OVERFLOW LOCATIONS

SCALE: 1:5000 @ A3	JOB NO: 2873	DRAWING NO: KILCORMAC–08
DATE: APR'08	DRAWN BY: D.D	

Attachment No. B.6

The most recent planning permission, including a copy of all conditions, and where an EIS was required, copies of any such EIS and any certification associated with the EIS.

Not applicable as construction of wastewater treatment works predates planning/EIS requirements.

Attachment No. B.7 (i)

Location of discharges located within Shannon Free Airport Development Company area

Not Applicable

Attachment No. B.7 (iii)

A copy of the notice issued to the relevant local authority.

Not Applicable

Attachment No. B.8

A copy of the site notice and a drawing showing its location and newspaper advertisement

OFFALY COUNTY COUNCIL
Comhairle Chontae Uíbh Fhailí

SITE NOTICE

APPLICATION TO THE ENVIRONMENTAL PROTECTION AGENCY FOR A WASTEWATER DISCHARGE LICENCE

In accordance with the Waste Water Discharge (Authorisation) Regulations 2007, Offaly County Council, Áras an Chontae, Tullamore, Co. Offaly is applying to the Environmental Protection Agency for a Waste Water Discharge Licence for discharges from the Kilcormac agglomeration.

The application concerns a primary and secondary discharge from the Wastewater Treatment Works (WWTW) at Kilcormac and storm water discharge from a storm water overflow at Kilcormac Wastewater Treatment Works and from a storm water overflow from the collection system at Kilcormac.

The existing WWTW treats wastewater to a secondary treatment level using primary settlement and sludge digestion, percolating filter beds and final settlement, with secondary (cold) sludge digestion.

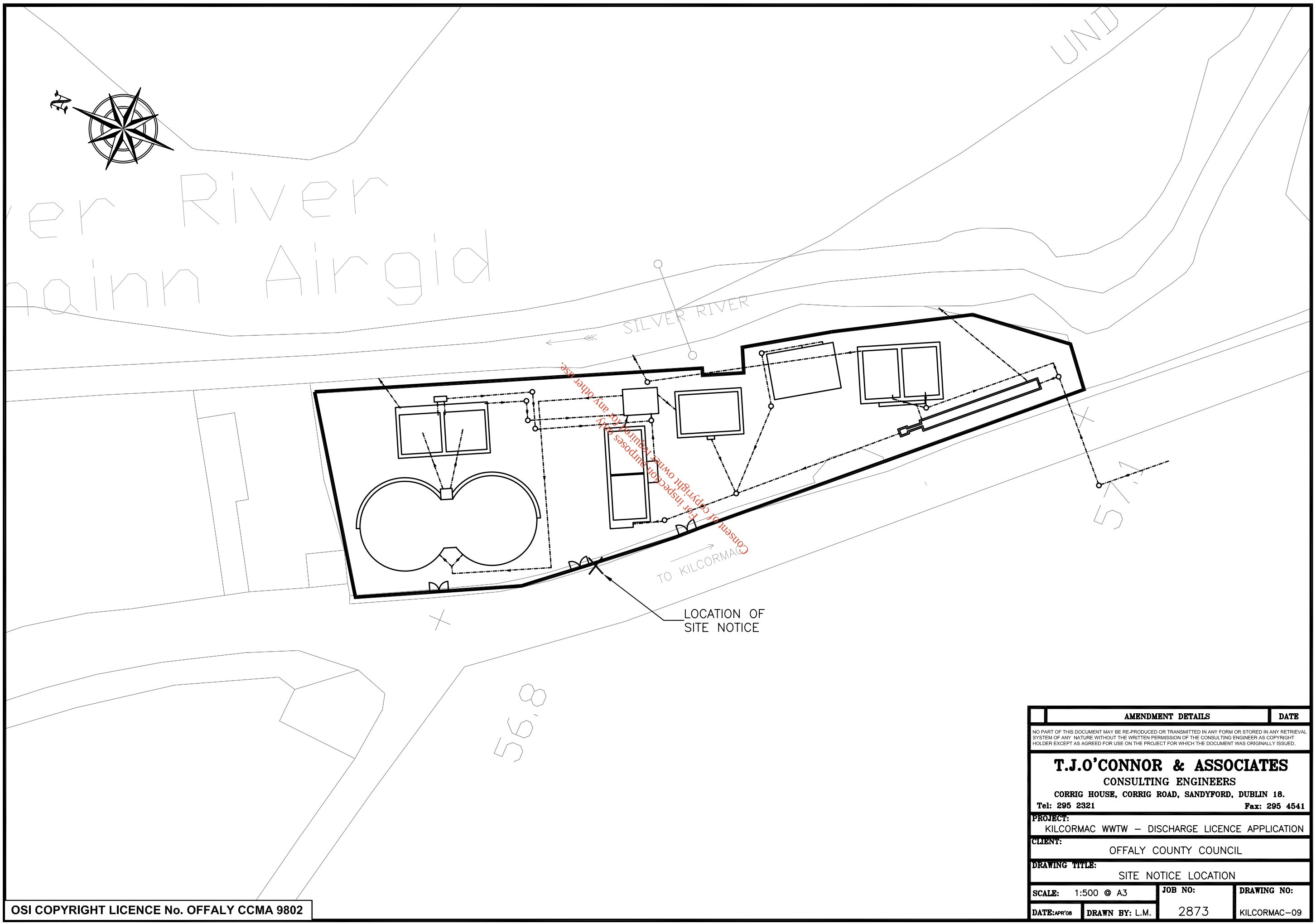
Plant Name	Location	National Grid Ref.
Kilcormac Wastewater Treatment Works	Ferbane Road, Kilcormac	E 218094 N 214272

Discharge Type	Location	Receptor	Grid Reference
Primary	Kilcormac WWTW	River Silver	E 218088 N 214314
Secondary	Kilcormac WWTW	River Silver	E 218106 N 214281
Storm water (WWTP Overflow)	Kilcormac WWTW	Outfall Pipe from WWTW to River Silver	E 218130 N 214242
Storm water (Sewerage Collection System Overflow)	Broughal Road	Outfall Pipe from Sewerage Collection System to River Silver	E 218287 N 214182

A copy of the application for the Waste Water Discharge Licence and such further information relating to the application as may be furnished to the Agency in the course of the Agency's consideration of the Application shall as soon as is practicable after receipt by the Agency be available for inspection or purchase at the:

- **Environmental Protection Agency, PO Box 3000, Johnstown Castle Estate, Co. Wexford, Lo Call 1890 335599 Telephone: 053-9160600 Fax: 053-9160699 Email: info@epa.ie**
  and at
- **Offaly County Council Offices, Áras an Chontae, Charleville Road, Tullamore, Co. Offaly, Telephone: 05793 46800 Fax: 05793 46868**
  Email: tshanahan@ofallycoco.ie

Submissions in relation to the application may be made to the Environmental Protection Agency at its headquarters described above
Michael Roche
Director of Services
Environment & Water Services



AMENDMENT DETAILS	DATE

T.J.O'CONNOR & ASSOCIATES
CONSULTING ENGINEERS
CORRIG HOUSE, CORRIG ROAD, SANDYFORD, DUBLIN 18.
Tel: 295 2321 Fax: 295 4541

PROJECT: KILCORMAC WWTW – DISCHARGE LICENCE APPLICATION

CLIENT: OFFALY COUNTY COUNCIL

DRAWING TITLE: SITE NOTICE LOCATION

SCALE: 1:500 @ A3	JOB NO: 2873	DRAWING NO: KILCORMAC–09
DATE: APR'08	DRAWN BY: L.M.	

OFFALY COUNTY COUNCIL

APPLICATION TO THE ENVIRONMENTAL PROTECTION AGENCY FOR A WASTE WATER DISCHARGE LICENCE

In accordance with the Waste Water Discharge (Authorisation) Regulations 2007, Offaly County Council, Aras an Chontae, Tullamore, Co. Offaly is applying to the Environmental Protection Agency for a Waste Water Discharge Licence for discharges from the Kilcormac agglomeration.

The application concerns a primary and secondary discharge from the Wastewater Treatment Works (WWTW) at Kilcormac and storm water discharges from a storm overflow at Kilcormac Wastewater Treatment Works and from a storm overflow from the collection system at Kilcormac.

The existing WWTW treats wastewater to a secondary treatment level using primary settlement and sludge digestion, percolating filter beds and final settlement, with secondary (cold) sludge digestion.

Plant Name	Location	National Grid Ref.
Kilcormac Wastewater Treatment Works	Ferbane Rd., Kilcormac	E 218094 N 214272

Discharge Type	Location	Receptor	Grid Reference
Primary	Kilcormac WWTW	River Silver	E 218088 N 214314
Secondary	Kilcormac WWTW	River Silver	E 218106 N 214281
Storm water (WWTP Overflow)	Kilcormac WWTW	Outfall Pipe from WWTW to River Silver	E 218130 N 214242
Storm water (Sewerage Collection System Overflow)	Broughal Road	Outfall Pipe from Sewerage Collection System to River Silver	E 218287 N 214182

A copy of the application for the Waste Water Discharge Licence and such further information relating to the application as may be furnished to the Agency in the course of the Agency's consideration of the Application shall as soon as is practicable after receipt by the Agency be available for inspection or purchase at the Environmental Protection Agency, PO Box 3000, Johnstown Castle Estate, Co. Wexford.
Lo Call: 1890 335599 Telephone: 053-9160600 Fax: 053-9160699
Email: info@epa.ie
and at
Offaly County Council Offices, Aras an Chontae, Charleville Road, Tullamore, Co. Offaly,
Telephone: 05793 46800 Fax: 05793 46868 Email: tshanahan@offalycoco.ie

Submissions in relation to the application may be made to the Environmental Protection Agency at its headquarters described above

Michael Roche
Director of Services
Environment & Water Services

Pursuant to the requirements of Part 8 of the Local Government (Planning & Development) Regulations 2001 as amended, notice is hereby given that Offaly County Council proposes the following works at Shannon Harbour:

Re-alignment of the through road through the village including definition by kerbing. Rising the road level in the village above the flood level of the Shannon Flood. Re-alignment and reconstruction of the existing road junctions in accordance with road engineering good practice. The provision of defined pedestrian crossings within the village. The provision of new and the upgrading of existing paved areas within the village, including new road surfacing and associated drainage. The provision of village signage, junction signage and speed control signage. The provision of street lighting, seating, litter bins and ancillary landscaping and site works. The provision of new and upgrading of existing underground utility and municipal services.

The plans and particulars of the proposed development will be available for inspection or purchase at a fee not exceeding the reasonable cost of making a copy during normal public opening hours at the Council's headquarters, Aras an Chontae, Charleville Road, Tullamore, the Council offices at Birr Civic Offices, Wilmer Road, Birr and at Banagher Branch Library, from **Wednesday 18th February 2009 to Wednesday 1st April, 2009.**

Submissions or observations with respect to the proposed development, dealing with the proper planning and sustainable development of the area in which the development would be situated may be made in writing to Director of Service, Environment Section, Offaly County Council, Aras an Chontae, Charleville Road, Tullamore, to arrive **no later than Wednesday 15th April 2009 at 4.00 p.m.**

Michael Roche
Director of Services
Aras an Chontae
Charleville Road
Tullamore

ROADS ACT 1993 – NOTICE OF DECISION

TEMPORARY CLOSING OF THE L-06009-3 AT LYNALLY, COUNTY OFFALY

The Council gives notice of its decision to close, temporarily the following road in accordance with Section 75 of the Roads Act 1993 (S.I. 197 of 1993) and the Roads Regulation 1994.

L-06009-3 Lynally road, from junction with the N52 to the junction with the L-06009-2 Lynally to Screggan road.

The road will be closed from Monday, February 23rd, for four weeks.

The road closure is necessary to carry out drainage and roadworks for the Tullamore Bypass.

Reasonable vehicular access and safe pedestrian access will be provided for local residents, factories, commercial premises and public amenities during the period of the closure.

Alternative Route is as follows:

Vehicles travelling towards Tullamore shall be diverted along the L-06009-2 from Lynally to the N52 at Screggan Cross.

Vehicles travelling towards Lynally shall be diverted at Screggan Cross to the junction with the Lynally road and the Rahan road.

Offaly County Council regrets any inconvenience to road users but the closures are necessary.

Frank Heslin
Director of Services
Transportation and Emergency Services.

offaly.ie

NOTICE PUBLISHING COMMENCEMENT OF AUDIT DUNGAR JOINT BURIAL BOARD

Dungar Joint Burial Board,
The Lodge,
Dungar, Roscrea

Notice is hereby given that the audit of the accounts of the above-named Burial Board for the financial year ended on the 31st day of December 2007 will be commenced by Mr. Thomas O'Callaghan, Local Government Auditor, on the 4th March 2009. Objections to any matter contained in the said several accounts will be heard by the Local Government Auditor during the audit.

Written notice of any proposed objection, setting out the relevant particulars and grounds on which it is to be made, should be sent to the above Local Government Auditor at 1 Show Ground View, Ennis, Co. Clare within ten days of the commencement of the audit. The accounts will be open during office hours to the inspection of all persons interested for seven days before the commencement of the audit.

Dated this 18th day of February 2009

Michael Roche
Director of Services

REGISTRATION OF DEEDS AND TITLE ACT 1964 AND 2006

REGISTERING WITH LAND CERTIFICATE

An application has been received from the Registered Owner, mentioned in the Schedule hereto for an order dispensing with Land Certificate issued in respect of the lands specified in the Schedule which original Land Certificate is stated to have been lost or inadvertently destroyed. The Land Certificate will be dispensed with unless notification is recieved in the Land Registry within twenty eight days from the date of publication of this notice, that the Original Certificate is in existance and in the custody of some person other than the registered owner. Any such notification should state the grounds on which the Certificate is being held.

DATED THIS THE 16TH DAY OF FEBRUARY 2009

Property Registration Authority

SCHEDULE

REFERENCE:	2006TI0028F
REGISTERED OWNER:	NOEL MINNOCK
FOLIO:	51725
COUNTY:	OFFALY
LANDS:	CLONKELLY
BARONY:	BALLYBRITT

It Pays To Advertise With The Tribune

Cards N Things

Bridge Centre, Tullamore

REQUIRE WEEKEND SUPERVISOR

Thurs & Fri evenings 5pm - 9pm
Saturday & Sunday.
Send c.v's to the above address

EXPERIENCED BAR PERSON REQUIRED

To busy Pub in Tullamore area

Good working conditions

Apply to Box No. 385

WELL ESTABLISED GP Practice in North Tipperary has an opening for a Practice Manager

This is a maternity leave position and will run for a minimum of 6 months. Excellent MS Office skills and office experience is essential.

Please send your curriculum vitae with a covering letter to Box Number 719

ROMAQUIP

Clearing a Way in Winter...

Romaquip Ltd., Syngefield, Birr, Co. Offaly 057 9120836 www.romaquip.com

Office Administrator / Receptionist

Ideal candidates should have a proven track record in managing an accounting and administration system, maintaining a wage system (Quickpay) and be competent in all other general office duties.
Good communication and interpersonal skills would also be required. Attractive renumeration package available.

Replies to : The Personnel Manager, Romaquip Ltd, Birr, Co. Offaly,
Tel: 057 9120836 Fax: 057 9121084
Email: info@romaquip.com

ISM
(Irish School of Motoring)

Ireland's *No1* Driving School, are offering a new Franchise opportunity in Tullamore and surrounding areas.

Suitable candidates will be self-employed and will benefit from a full support package from ISM, including exclusive new online booking technology

Contact
Stephen Boylan
on 1850-530-430
or 087-677-5522.

STAFF WANTED

NORTH TIPPERARY VOCATIONAL EDUCATION COMMITTEE
COISTE GAIRMOIDEACHAIS THIOBRAID ÁRANN THUAIDH

VEC

Applications are invited for the following Posts that may arise for the academic year 2008/2009:

BTEI/Community Education Tutors
Ref: NT183 - Personal Development Group Facilitator (with Counselling & Psychotherapy qualifications)
Ref: NT184 - ESOL

North Tipperary V.E.C. is an equal opportunities employer. Canvassing will disqualify.
Completed application forms should reach the undersigned by Friday at 12 noon on 27th February 2009.
Application Forms are available from our website www.tipperaryvec.ie or from the above office Phone 067-31250.
Please contact the Human Resource Department for further information.
David Leahy, Chief Executive Officer, North Tipperary V.E.C. Administrative Offices, Church Road, Nenagh, Co. Tipperary.

NDP

"Co-funded by the Irish Government and E.U. under the National Development Plan 2007-2013."

PART- TIME
STAFF WANTED FOR BUSY PUB
APPLY IN WRITING TO BOX NO. 386

Thriving pub to lease

Tullamore Area
Box No. 722

IYJS Irish Youth Justice Service

Helping the Constantly gone

Project-based Youth Worker

Roscrea Area Youth Diversion Project (RAYProject)

ROSCREA 2000 LTD

Roscrea 2000 Ltd provides community and youth work services through project, group and community work in Roscrea. We are inviting applications for a project based youth worker, working in the new Roscrea Garda Youth Diversion Project, to be based in Roscrea.
This is a challenging and rewarding post for individuals interesting in working closely with young people from 12 to 17 years old.

The successful candidate will have a third level qualification in Youth/Community work or a related discipline and experience of practical working with young people, particularly those who fall under the target group identified in the Garda Youth Diversion Project Guidelines.
An understanding of Youth Work and skills in challenging behaviour, social inclusion, facilitation, group work, report writing and evaluation will be important and experience in the voluntary sector is an advantage.

Garda Vetting will apply to this post.
Further details for this position and Application Forms are available from
Deirdre Cahir,
Youth Project Coordinator,
Roscrea 2000 Ltd
Tel: 0505 23379
email: info@roscrea2000.com

Closing date for receipt of applications: 6th March 2009

NDP

GALRO
Guardians of Lives of Rehabilitation Offer

MENTORS
Required For Immediate Start

Innovative rehabilitation support services for young people to enable independent living and access to social/recreational and economic activity in local communities.
We immediately require full-time (35hrs/week) and part-time (20hrs/week) Mentors in Tullamore/Birr area to support young people with independent living and access to social and economic life in the community.
This post would suit male or female applicants. Ideally applicants will have experience working with young people with challenging behaviour and/or have a relevant qualification. Have a keen interest in sport and recreational activity, with a genuine interest in involving young people in the local community; teaching music at a basic level is an added advantage. Own transport essential with full driving licence.
Successful candidates will be required to work a roster, which includes day, evening and weekend work.
Salary €32,760pa (full-time post), pro rata for part-time.
Written applications in strictest confidence to:
GALRO,
Mill House,
Killashee Street,
Longford, marked for the attention of Carol.
Telephone 043 49991.
Fax 043 45597.
Email: info@galroireland.ie
Closing date Friday 6th March 2009.

DO YOU NEED more money? Earn €200 - €600 per week without affecting your current job. Ph 057 86 35813, 086 2405669. www.grabalife.eu, info@grabalife.eu. Free information pack incl. DVD.

REGISTERED CHILDMINDER available. Daingean area. Non smoker. Own car. References available. Tel 086 2322154.

EXPERIENCED and reliable Irish lady available for home help for the elderly (Monday - Saturday). Can prepare and cook hot meals. Shopping, cleaning, appointments. Tullamore area. Ring (087) 9742715.

HAVE YOU been recently made redundant? Did you ever consider a career in sales working full time? One of Ireland's leading companies is now recruiting a sales rep in your area to assist the ongoing demand for our products. If you're a car owner and interested, call 087-2789426 for an interview.

EARN €500pm collecting /delivering Catalogues. For free info text name and address to 087 215 6276 or 01-2 4 8 2 2 1 9 www.earnmoneyforme.com

WOMAN AVAILABLE to mind children in her own home. Play area outside. References available. Birr area. Contact 086 3461950.

LADY AVAILABLE for child minding, non smoker. Clara area. Call any time. 087 6414822.

RELIABLE IRISH LADY available for: • Housework • laundry, ironing; • home help for elderly; • hospital, doctor, hair or any appointments; • preparing and cooking hot meals; • doing food shopping. Monday - Friday, 9.30 - 2.30, Tullamore and surrounding areas. Tel 087-7485940.

LATVIAN LADY, 27, available, for childminding, housework / cleaning, ironing, cooking in Clara, Tullamore and surrounding areas. Tel 086 2162096.

CHILDMINDER REQUIRED to mind 2 boys and a baby girl in their own home. Mon - Fri, 8am - 5.30pm. Must have own transport to drop and collect boys to Ballinagar N.S. Phone 087 9821762.

FULL TIME REGISTERED NURSE required for small nursing home in Co. Westmeath. Experience in care of the elderly essential. Box No. 721.

BARBER REQUIRED. Experience essential. Full or part time. Applications to Portland Barbers, Tullamore or call 087 6140832 or 086 1720035.

FULL TIME REGISTERED NURSE required for small nursing home in Co. Westmeath. Experience in care of the elderly essential. All applications to P.O. Box 384, Tullamore Tribune, William St, Tullamore, Co. Offaly by March 2nd 2009.

EXPERIENCED Tractor Driver available. Birr / Roscrea area. Contact 087 9471609.

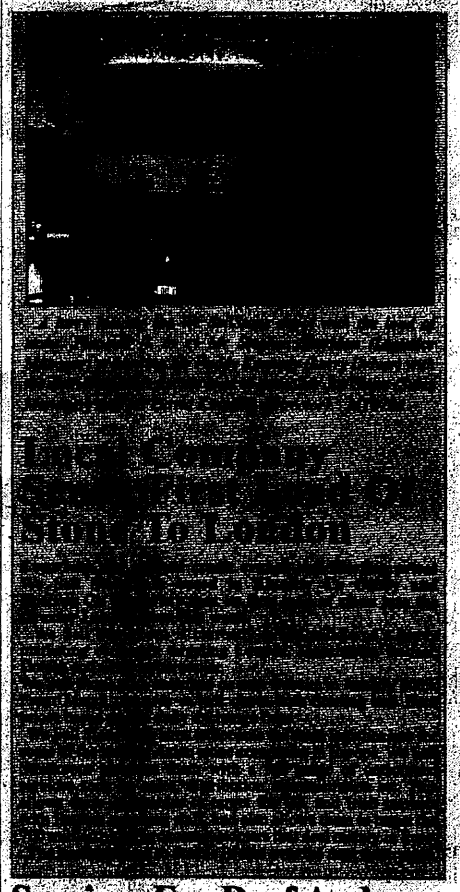
CHILDMINDER AVAILABLE to mind children in her own home, Tullamore area. Tel: 087-7727448.

HOMEWORK CLUB / After School Care facility provided in family home, Tullamore town, central location. Contact Paula: 085 1202015.

EXPERIENCED, RELIABLE CHILDMINDER has one space available to mind your child in her home, Monday to Friday, 7.30 - 6.00, Tullamore area. Please contact 086 2359977.

WANTED: Person to help with ordinate and teach primary school choir. Experience of choir / vocal training essential. CV and references to Principal, Sacred Heart Primary School, Roscrea, Co. Tipperary. Airhill, Roscrea, Co. Tipperary. Ph. 0505-21620. Fax 0505-21620.

required part-time. Must have Montessori experience and Garda clearance. Tullamore area. Phone 087 9933761.



Services For Deaf And Hard Of Hearing People

Services for deaf and hard of hearing people are on twice a month – 1st & 3rd Wednesday of every month from 10a.m. to 1p.m., at the Old Health Centre, Johns Terrace, Birr, starting on Wednesday 4th March 2009.

Deafhear.ie is a voluntary body, which provides a range of services for Deaf and Hard of Hearing people and their families. These services include Family Support; Deaftech - Technology / equipment; Sign Language Classes, Lip-reading Classes, Citizens Information, Communication Support; support to access Training and Employment; Literacy Assistance; Tinnitus Support via the Irish Tinnitus Association (ITA); Information and Advocacy. HSE Hearing aids can receive minor repairs and batteries for all hearing aids can be purchased for €3 for a packet of six.

For more information please contact: Deafhear.ie Midlands, Church Street, Tullamore, Co. Offaly. Tel / Minicom: (057) 9351606 Fax: (057) 9326425 Text: (057) 9326421 email: tullamore@deafhear.ie

Attachment No. B.10

Development programme including copies of approved funding and timeframes for completion.

Kilcormac Sewerage Scheme

Offaly County Council propose to upgrade the sewerage scheme for the village of Kilcormac to provide for the longer term needs of the village. The existing system is now more than 20 years old and is occasionally producing a poor quality effluent which would not be of the required quality for the receiving waters. A new sewerage scheme, including works to the collection system and wastewater treatment plant, is proposed to provide for the sustainable development of the village. The design population figure for Kilcormac was agreed with Offaly County Council's Forward Planning Unit at 2,500 person's equivalent at a senior management meeting.

The existing sewer network is proposed to be extended to cater for all existing and proposed properties included in the development plan for the village. The new/upgraded system would be constructed based on complete separation of surface water and foul flows from new developments. A new storm water system is proposed to provide for the collection of surface runoff from new developments and where possible/economic, to remove surface water from the existing combined drainage system. New foul sewers would be designed to convey a flow rate of 6 multiples of the calculated dry weather flow. It is also proposed to construct new sewers in Main Street and Broughal Road to facilitate the abandonment of the existing overflow at the Main Street/Broughal Road junction. Also, a small number of defects on existing sewerage pipes would require local repairs.

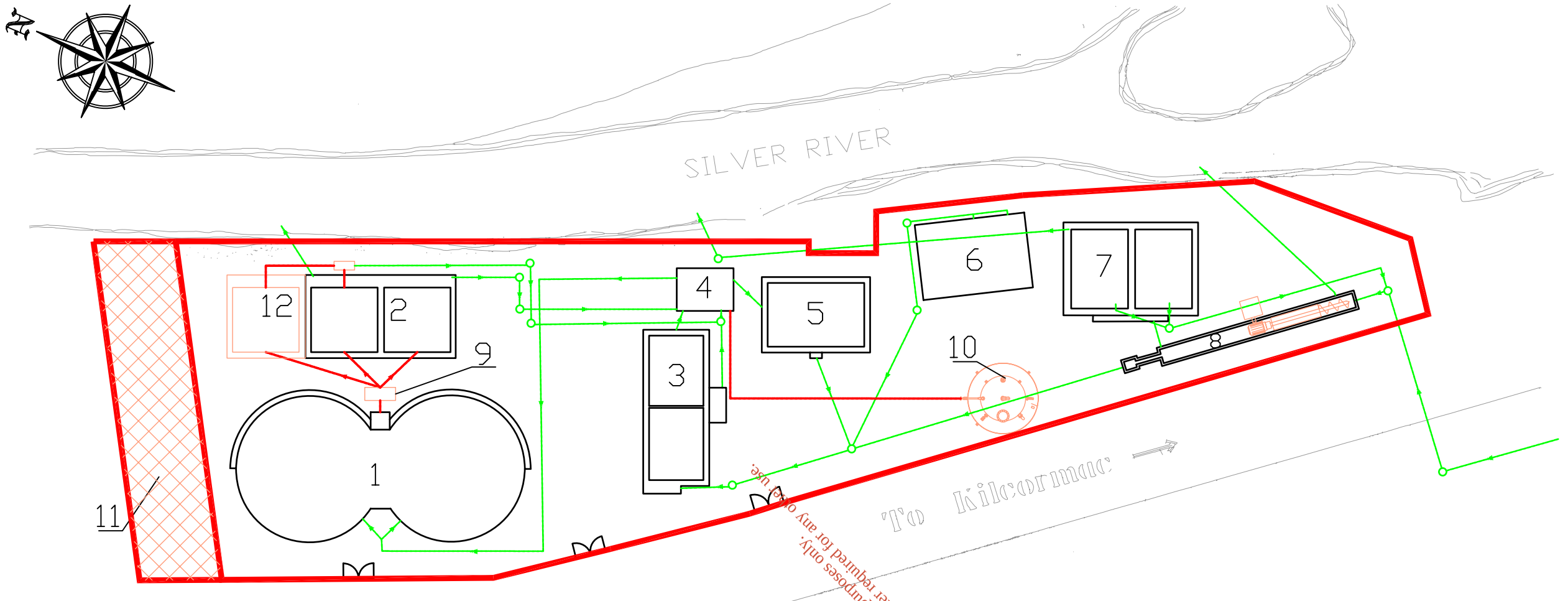
To accommodate proposed development north of the River Silver, the pumping station at Bridge Street would be upsized from 10l/s to 18l/s and the existing rising main replaced. A full mechanical and electrical refurbishment of the station would include the provision of new pumps, pipework, valves, control panels etc., and also an emergency overflow from the station to the river. A number of existing pipes would be upsized to accommodate the additional flow.

To accommodate the proposed increase in the treatment capacity of the wastewater treatment works to 2,500 p.e., it is proposed to base the expansion of the plant around modifications to the existing plant rather than the construction of a new plant at a greenfield site elsewhere. Following calculations on the capacities of the existing treatment stages, it is shown that the existing Imhoff tanks could continue to provide effective primary settlement of the incoming wastewater up to the 2,500 p.e. load proposed. It has also been shown that the trickling filters could be modified by the replacement of the filter medium to provide the required specific surface area for the increase in load proposed. However, the inlet works, interstage pumping stations and final effluent clarifiers would require substantial modifications to accommodate the increased load and to improve the standard of preliminary treatment provided. It is also proposed to provide ferric dosing to effect chemical precipitation of phosphorus to achieve a proposed 2mg/l standard. Other minor works would include a new

fencing/boundary wall and miscellaneous works to refurbish the control building. Drawing Kilcormac-10 attached illustrates the proposed layout for the upgrading works to the treatment works.

At the WwTW, the new inlet works proposed will provide for the abandonment of the existing overflow to the Silver River. The works will instead provide for a single overflow of screened wastewater to the existing stormwater tank which, when full, will discharge to the Silver River at the existing secondary discharge location.

It is important to note that, while a preliminary report has been prepared for Offaly County Council, describing the above proposed works and estimated costs for same, approval from the Department of the Environment for the scheme has not yet been granted.



1—PERCOLATING FILTERS — NEW FILTER MEDIA AND DISTRIBUTOR ARMS

2—HUMUS TANKS

3—IMHOFF TANK

4—PUMPING STATION — NEW PUMPSTES AND PIPEWORK

5—SLUDGE DIGESTION TANK

6—CONTROL BUILIDING

7—STORM TANKS

8—PROPOSED INLET WORKS — NEW SPIRAL SCREEN AND MISCELLANEOUS WORKS

9—NEW DISTRIBUTION CHAMBER

10—PROPOSED FERRIC STORAGE TANK AND DOSING PUMPS

11—TEMPORARY WAYLEAVE MAY BE REQUIRED FOR THIS LAND DURING CONSTRUCTION OF NEW CLARIFIER (12)

12—PROPOSED HUMUS TANK

	AMENDMENT DETAILS	DATE

T.J.O'CONNOR & ASSOCIATES
CONSULTING ENGINEERS
CORRIG HOUSE, CORRIG ROAD, SANDYFORD, DUBLIN 18.
Tel: 295 2321 Fax: 295 4541

PROJECT: KILCORMAC WWTW—DISCHARGE LICENCE APPLICATION

CLIENT: OFFALY COUNTY COUNCIL

DRAWING TITLE: PROPOSED WWTP FOR KILCORMAC

SCALE: 1:2500 @ A3	JOB NO:	DRAWING NO:
DATE: JAN'09	DRAWN BY: D.D	2873	KILCORMAC—10

\\P3-062\projects\2873 Kilcormac WWTW - Discharge Licence Application\Kilcormac\2873-KILCORMAC-10.dwg

Attachment No. B.11

Relevant correspondence issued in relation to a Section 63 Notice

Not Applicable

Attachment No. B.12

The most recent licence issued under the Foreshore Act 1933

Not Applicable

Attachment No. C.1

Supporting documentation with regard to the plant and process capacity, systems, storm water overflows, emergency overflows, etc., including flow diagrams of each with any relevant additional information.

The WwTW at Kilcormac is located to the north west of the village, on the western bank of the River Silver. The plant was built in 1989 on a relatively small site, between the River and a roadway. It has a design population of 2000 and comprises an inlet works, Imhoff tanks, trickling filters, final settlement, a stormwater tank and sludge holding tank (refer to drawing nos. Kilcormac-01 and -02 in Attachment A.1 for plant location, plant layout and process flow diagrams for treatment works and drawing Kilcormac-04 in Attachment B.2 for details of stormwater overlflow location). The flow to the inlet works is passed through a macerator which shreds any solid matter (such as rags and plastics) in the incoming flow. An overflow comprising a 230mm deep half round 375mm diameter channel with a double side weir, at the upstream end of the inlet channel limits the flow forward to the works to 6 DWF (some 30 l/s) and also provides for emergency discharges to the river in the event that the macerator becomes blocked or suffers mechanical or electrical failure.

A flume at the downstream end of the inlet channel controls the depth of flow. A side weir overflow upstream of the flume regulates the flow forward to the main treatment stream to some 15 l/s. Flows in excess of this value are discharged to a stormwater holding tank which in turn discharges to the Silver River when full. The stormwater holding tank is rectangular and of concrete construction. It has two compartments separated by a dividing wall. Each of the two compartments has its own manually operated submersible storm water return pump which delivers the flow back to the inlet works via an 80mm diameter rising main The total capacity of the tank is some 320 m^3.

After the inlet works the flow is passed forward (by gravity) to one of two Imhoff tanks. This stage of the treatment process (effectively) provides for primary settlement of the flow with the settled sludge held in a separate compartment on the bottom of the tanks. Thereafter, the settled effluent discharges to the wet well of an inter-stage pumping station. Here the flow is mixed with recirculated final effluent from the outfall which irrigates the filter beds in low flow conditions and improves the overall standard of the treated effluent by double passing a proportion of the wastewater through the works. The pumping station lifts the flow to the rotating distributor arms over two trickling filter beds and the flow trickles downward over the filter media. The effluent from the filter beds is collected in peripheral channels at the base of filters and conveyed onward to the humus tanks. The humus tanks are rectangular in plan and hopper-bottomed with sludge withdrawal from the base of the hopper via a 150mm diameter pipe. The tanks provide for the removal (by settlement) of bacterial growths (humus) which may have slewed off in the trickling filters. The settled effluent from the tanks overflows to peripheral channels which in turn discharge to an external channel running outside the clarifiers. Fiberglass flumes at opposite ends of this channel provide for evenly splitting the flow between the outfall to the river and the recirculation pipework to the inter-stage pumping station.

Sludge from the Imhoff tanks and from the humus tanks is periodically drawn off using sludge pipework connected to the wet well of a sludge pumping station. This station is located alongside the inter-stage pumping station, referred to previously, and is equipped with two submersible pumps. These pumps lift the flow into a sludge holding tank. Some degree of (cold) sludge digestion will take place in this tank and it is described as a digestion tank in drawing Kilcormac-02 attached. The sludge is removed by private contractor, approximately twice a month, to the WwTW in Birr for further treatment. An estimated 60-65m^3 of sludge is transported off-site per month. This tank has a capacity of some 242 m^3 and is equipped with a floating draw off arm which returns the supernatant sludge liquor to main treatment stream downstream of the inlet works.

C.1.1 Storm Water Overflows

As the Kilcormac Sewerage Scheme was built prior to the publication of '*Procedures and Criteria for Storm Water Overflows*', we would conclude that the storm water overflows may not meet the design criteria established in this document.

It is proposed to abandon the existing stormwater overflow at the Broughal Road/Main Street junction. New sewers are to be constructed with the required capacity to convey the increased flow to the WwTW.

At the WwTW, the new inlet works proposed will provide for the abandonment of the existing overflow to the Silver River. The works will instead provide for a single overflow of screened wastewater to the existing stormwater tank which, when full, will discharge to the Silver River at the existing secondary discharge location.

C.1.2 Pumping Stations

Bridge Street Pumping Station

- This pumping station operates on 1No. Duty and 1No. Assist pump with a maximum pumping rate of 9.0l/s.
- There is no permanent generator or generator socket installed in this pumping station.
- There is no storage capacity available at this pumping station.
- There is no emergency overflow to the receiving waters from this pumping station.

It is proposed as part of the upgrade works, to upgrade this pumping station to 18l/s pumping rate and replace the existing rising main. A full mechanical and electrical refurbishment of the station is also proposed and would include the provision of new pumps, pipework, valves, control panels etc., and also an

emergency overflow from the station to the river. This arrangement will also provide for the connection of a generator, when required.

Attachment No. C.2

Supporting documentation on the design and construction of any and all discharge outfalls, including stormwater overflows, from the waste water works

Primary Discharge Outfall (SW1) – 225mm diameter concrete outfall pipe

Secondary Discharge Outfall (SW2) – 225mm diameter concrete outfall pipe

Storm Water Overflow (SW3) – 300mm diameter concrete overflow pipe

Storm Water Overflow (SW4) – 375mm diameter concrete overflow pipe

Attachment No. D.1

Details of all discharges of waste water from the agglomeration

Note to Tables D.1(i)(a), D.1(ii)(a) and D.1(iii)(a)

We have noted that the EPA have prepared a spreadsheet with estimated ninety-fifth percentile flows and dry weather flows for a number of gauging stations and rivers, including the Silver River at Kilcormac. This spreadsheet describes the Kilcormac station as obsolete but includes an estimate of the 95th %ile flow in the Silver River of 0.18m^3/s. The estimate provided herein of 0.316m^3/s was compiled in connection with the preparation of a preliminary report for the sewerage scheme in Kilcormac, and is based on an analysis of the catchment characteristics using the 'Hydra' software. This software was complied by the Institute of Hydrology under an EU funded contract for the European Small Hydropower Association and is specifically designed to evaluate low flow conditions for small Irish rivers, such as the River Silver at Kilcormac, and is based on the local meteorological conditions for the particular location. This software provides highly accurate estimates of low flows in rivers, which are based on well understood hydrological principles.

With reference to Tables D.1(i)(b) and D.1(i)(c) for characteristics of current emissions, we note that the Council's intentions, with regard to the application for the primary discharge, is to achieve compliance with the Urban Wastewater Treatment Regulations and Water Quality (Dangerous Substances) Regulations. Under the terms of the Wastewater Treatment Regulations, there are no maximum daily averages. The regulations are instead predicated on a maximum number of permitted failures of samples of treated effluent to achieve defined upper limit values for a small number of parameters, which does not include many of the substances listed in Tables D.1(i)(b) and D.1(i)(c). It follows that a certain number of exceedances of the upper limit values are permitted, and that (in theory) there is no maximum set on the concentration of the parameters listed in the regulations. Tables D.1(i)(b) and D1.(i)(c) should be interpreted in this context.

We note that the Urban Wastewater Treatment Regulations set a limit of 2mg/l for Total Phosphorus for discharges from urban wastewater treatment plants to sensitive areas. Although the Silver River is not classed as a sensitive area in these Regulations, a limit of 2mg/l of Total Phosphorus in the effluent discharged from the plant has been committed to for the upgraded treatment plant. This limit has therefore been used in completing Table D.1(i)(b).

Refer to drawing Kilcormac-04 in Attachment B.2 for locations of discharge points.

TABLE D.1(i)(a): EMISSIONS TO SURFACE/GROUND WATERS (Primary Discharge Point)

Discharge Point Code: SW1

Source of Emission:	Treated Effluent
Location:	Kilcormac WwTW
Grid Ref. (12 digit, 6E, 6N):	E: 218088 N:214314
Name of receiving waters:	Silver River
River Basin District:	Shannon International River Basin District
Designation of receiving waters:	None
Flow rate in receiving waters:	_____ $m^3.sec^{-1}$ Dry Weather Flow 0.316 $m^3.sec^{-1}$ 95%ile flow

Emission Details:

(i) Volume emitted 84,260m^3/year			
Normal/day	230.85 m^3	Maximum/day	360 m^3
Maximum rate/hour	15 m^3	Period of emission (avg)	60 min/hr 24 hr/day 365 day/yr
Dry Weather Flow	0.0027 m^3/sec		

TABLE D.1(i)(b): EMISSIONS TO SURFACE/GROUND WATERS - Characteristics of the emission (Primary Discharge Point)

Discharge Point Code: SW1

Number	Substance	As discharged	
		Max. daily average	
1	pH	-	
2	Temperature	-	
3	Electrical Conductivity(@25°C)	-	
		Max. daily average (mg/l)	**kg/day**
4	Suspended Solids	35	8.08
5	Ammonia (as N)	-	-
6	Biochemical Oxygen Demand	25	5.77
7	Chemical Oxygen Demand	125	28.86
8	Total Nitrogen (as N)	-	-
9	Nitrite (as N)	-	-
10	Nitrate (as N)	-	-
11	Total Phosphorus (as P)	2	0.462
12	Orthophosphate (as P)[Note 1]	-	-
13	Sulphate (SO_4)	-	-
14	Phenols (sum) [Note 2] (ug/l)	-	-

Note 1: For waste water samples this monitoring should be undertaken on a sample filtered on 0.45μm filter paper.
Note 2: USEPA Method 604, AWWA Standard Method 6240, or equivalent.

TABLE D.1(i)(c): DANGEROUS SUBSTANCE EMISSIONS TO SURFACE/GROUND WATERS

Primary Discharge Point - Characteristics of the emission

Discharge Point Code: SW1

Number	Substance	As discharged		
		Max. daily average (µg/l)	kg/day	kg/year
1	Atrazine	1.0	0.000231	0.0843
2	Dichloromethane	10.0	0.00231	0.8426
3	Simazine	1.0	0.000231	0.0843
4	Toluene	10.0	0.00231	0.8426
5	Tributyltin	0.001	2.3085×10^{-7}	8.424×10^{-5}
6	Xylenes	10.0	0.00231	0.8426
7	Arsenic	25	0.00578	2.107
8	Chromium	30	0.00693	2.528
9	Copper	30	0.00693	2.528
10	Cyanide	10	0.00231	0.8426
11	Fluoride	500	0.1154	42.13
12	Lead	10	0.00231	0.8426
13	Nickel	50	0.01154	4.213
14	Zinc	100	0.0231	8.426
15	Boron	-	-	-
16	Cadmium	-	-	-
17	Mercury	-	-	-
18	Selenium	-	-	-
19	Barium	-	-	-

TABLE D.1(ii)(a): EMISSIONS TO SURFACE/GROUND WATERS
(Secondary Discharge Point) (1 table per discharge point)

Discharge Point Code: SW2

Source of Emission:	Settled, mixed storm water sewage (emergency overflow)
Location:	Kilcormac WwTW
Grid Ref. (12 digit, 6E, 6N):	E: 218106 N:214281
Name of receiving waters:	Silver River
River Basin District:	Shannon International River Basin District
Designation of receiving waters:	None
Flow rate in receiving waters:	_____ $m^3.sec^{-1}$ Dry Weather Flow 0.316 $m^3.sec^{-1}$ 95%ile flow

Emission Details:

(i) Volume emitted: Not known m^3/year			
Normal/day	Not known m^3	Maximum/day	Not known m^3
Maximum rate/hour	Not known m^3	Period of emission (avg)	_____min/hr _____hr/day _____day/yr
Dry Weather Flow	m^3/sec		

TABLE D.1(ii)(b): EMISSIONS TO SURFACE/GROUND WATERS - Characteristics of the emission (1 table per discharge point)
(Secondary Discharge Point)

Discharge Point Code: SW2 - No monitored results available

Number	Substance	As discharged	
		Max. daily average	
1	pH		
2	Temperature		
3	Electrical Conductivity (@25°C)		
		Max. daily average (mg/l)	**kg/day**
4	Suspended Solids		
5	Ammonia (as N)		
6	Biochemical Oxygen Demand		
7	Chemical Oxygen Demand		
8	Total Nitrogen (as N)		
9	Nitrite (as N)		
10	Nitrate (as N)		
11	Total Phosphorus (as P) Note 1		
12	Orthophosphate (as P)		
13	Sulphate (SO_4)		
14	Phenols (sum) Note 2 (ug/l)		

Note 1: For waste water samples this monitoring should be undertaken on a sample filtered on 0.45μm filter paper.
Note 2: USEPA Method 604, AWWA Standard Method 6240, or equivalent.

TABLE D.1(ii)(c): DANGEROUS SUBSTANCE EMISSIONS TO SURFACE/GROUND WATERS

Secondary Discharge Point - Characteristics of the emission (1 table per discharge point)

Discharge Point Code: SW2 - No monitored results available

Number	Substance	As discharged		
		Max. daily average (µg/l)	kg/day	kg/year
1	Atrazine			
2	Dichloromethane			
3	Simazine			
4	Toluene			
5	Tributyltin			
6	Xylenes			
7	Arsenic			
8	Chromium			
9	Copper			
10	Cyanide			
11	Fluoride			
12	Lead			
13	Nickel			
14	Zinc			
15	Boron			
16	Cadmium			
17	Mercury			
18	Selenium			
19	Barium			

TABLE D.1(iii)(a): EMISSIONS TO SURFACE/GROUND WATERS
(Storm Water Overflow) (1 table per discharge point)

Discharge Point Code: SW3

Source of Emission:	Stormwater overflow
Location:	Kilcormac WwTW
Grid Ref. (12 digit, 6E, 6N):	E: 218130 N:214242
Name of receiving waters:	Silver River
River Basin District:	Shannon International River Basin District
Designation of receiving waters:	None
Flow rate in receiving waters:	_____ $m^3.sec^{-1}$ Dry Weather Flow 0.316 $m^3.sec^{-1}$ 95%ile flow

Emission Details:

(i) Volume emitted: Not known m^3/year			
Normal/day	Not known m^3	Maximum/day	Not known m^3
Maximum rate/hour	m^3	Period of emission (avg)	_____min/hr _____hr/day _____day/yr

TABLE D.1(iii)(a): EMISSIONS TO SURFACE/GROUND WATERS
(Storm Water Overflow) (1 table per discharge point)

Discharge Point Code: SW4

Source of Emission:	Combined stormwater overflow
Location:	Broughal Road, Kilcormac
Grid Ref. (12 digit, 6E, 6N):	E:218287 N:214182
Name of receiving waters:	Silver River
River Basin District:	Shannon International River Basin District
Designation of receiving waters:	None
Flow rate in receiving waters:	_____ $m^3.sec^{-1}$ Dry Weather Flow 0.316 $m^3.sec^{-1}$ 95%ile flow

Emission Details:

(i) Volume emitted: Not known m^3/year			
Normal/day	Not known m^3	Maximum/day	Not known m^3
Maximum rate/hour	m^3	Period of emission (avg)	_____min/hr _____hr/day _____day/yr

EntityName	StationName	SamplePurpose	SampleLabCode	SampleDate	Ammonia(N	BOD	Chemical Oxygen Demand	Conductivity @ 20°C	Nitrates(N)	Nitrites(N)	Ortho-phosphate	pH	Temperature	Total Nitrogen	Total Phosphorus	Total Suspended Solids
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	06435323	09/02/2006	71.08	100	643	1031	8.36	NT	5.06	7.54	NT	80	8.47	246
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	06435386	21/03/2006	29.9	170	736	1135	10.56	0.07854	3.21	7.7	NT	74.4	10.9	366
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	06435485	28/06/2006	23.25	230	495	NT	0.45	<0.06	13.1	7.29	18	34	6	22
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	06435506	26/07/2006	57	340	606	1917	<0.2	0.04	20.87	Sub Con	NT	NT	14.6	422
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	06435609	07/09/2006	40.05	160	1083	1152	0.8	0.08	10.1	8.12	NT	64	7.9	328
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	06435766	21/11/2006	9.65	238.75	428	714	NT	NT	6.22	7.82	NT	28	5.6	182
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	07435827	11/01/2007	2.72	33	77	311	3	0.0746	6.47	7.4	NT	4	1	50.5
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	07435923	06/03/2007	7.88	121.47	308	670	NT	0.2496	1.17	7.57	NT	8	2.26	156
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	07435945	03/04/2007	26.25	>327.5	1407	NT	NT	0.2724	18.83	7.95	NT	71	>3.5	858
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	07435979	03/05/2007	51.7	411	1053	1204	NT	NT	NT	8.1	NT	NT	NT	427
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	07436033	06/06/2007	46.6	369.1	797	NT	NT	0.006	16.58	8.15	NT	82	9.53	286
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	07436065	26/06/2007	33.1	229.16	468	1020	NT	0.0046	12.52	8.14	NT	>27.5	8.06	225
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	07437026	19/07/2007	36.26	>400.5	750	1062	0.4	0.0314	12.81	8	NT	83	8.53	246
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	07437062	14/08/2007	11.54	59.85	339	653	NT	0	5.05	7.54	NT	11	3.8	179
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	07437180	18/09/2007	32.44	>388.05	774	1171	NT	0.0475	6.99	8.08	NT	50	5.6	215
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	07437224	18/10/2007	38.58	226.43	478	NT	NT	NT	NT	NT	NT	51	5.5	199
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	07437275	15/11/2007	>3	373	1106	1450	NT	NT	NT	8.35	NT	NT	16.28	685
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	07437291	27/11/2007	66.05	285	652	1264	NT	NT	NT	8.33	NT	156	8.89	238
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	07437306	04/12/2007	23.3	364	683	956	NT	NT	NT	8.03	NT	51	7.52	312
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	08437329	08/01/2008	6.88	89.5	265	624	NT	NT	NT	7.52	NT	31	1.49	81
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	08437399	14/02/2008	29.24	367	773	1077	NT	NT	1.589	7.59	NT	52	NT	272
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	08437446	11/03/2008	26.04	213	502	1052	NT	NT	NT	7.84	NT	NT	5.63	200
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	08437510	07/05/2008	32.42	215.5	529	1212	NT	NT	12.81	7.96	NT	48	8.99	215
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	08437537	27/05/2008	32.54	286	639	1160	NT	NT	NT	7.46	NT	>32.5	7.06	247
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	08437572	19/06/2008	41.36	151.5	335	1309	NT	NT	16.66	8.23	NT	101	7.17	123
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	08437612	10/07/2008	20.94	141	279	960	NT	NT	11.7	7.87	NT	25	4.69	91
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	08437684	26/08/2008	16.6	72	427	992	NT	NT	13.17	7.73	NT	27.2	4.46	161
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	08437730	23/09/2008	43.48	368	802	1208	NT	NT	9.69	7.24	NT	65	9.15	110.5
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	08437793	28/10/2008	16.4	286	790	659	NT	NT	14.35	7.06	NT	10	7.79	576
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	08437807	11/11/2008	23.3	151	3.93	1092	NT	NT	11.54	8.05	NT	24.4	4.49	160
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	08437859	04/12/2008	25.04	138.5	476	986	NT	NT	8.9	7.88	NT	41	4.53	190

Attachment No. D.2

Tabular Data on Discharge Points

PT_CD	PT_TYPE	LA_NAME	RWB_TYPE	RWB_NAME	DESIGNATION	EASTING	NORTHING
Point Code Provide label ID's	Point Type (e.g., Primary/ Secondary/ Storm Water Overflow)	Local Authority Name (e.g., Donegal County Council)	Receiving Water Body Type (e.g., River, Lake, Groundwater, Transitional, Coastal)	Receiving Water Body Name (e.g., River Suir)	Protected Area Type (e.g., SAC, candidate SAC, NHA, SPA etc.)	6E-digit GPS Irish National Grid Reference	6N-digit GPS Irish National Grid Reference
SW1	Primary Discharge	Offaly County Council	River	Silver	None	218088	214314
SW2	Secondary Discharge	Offaly County Council	River	Silver	None	218106	214281
SW3	Stormwater Overflow	Offaly County Council	River	Silver	None	218130	214242
SW4	Combined Sewer Overflow	Offaly County Council	River	Silver	None	218287	214182

Attachment No. E1

Waste Water Discharge Frequency and Quantities for Primary and Secondary Discharge Points

Composite Sampling is in place at the primary discharge point.

TABLE E.1(i): WASTE WATER FREQUENCY AND QUANTITY OF DISCHARGE – Primary and Secondary Discharge Points

Identification Code for Discharge point	Frequency of discharge (days/annum)	Quantity of Waste Water Discharged (m^3/annum)
SW1 (P)	365	84,260
SW2 (S)	Not known	Not known

TABLE E.1(ii): WASTE WATER FREQUENY AND QUANTITY OF DISCHARGE – Storm Water Overflows

Identification Code for Discharge point	Frequency of discharge (days/annum)	Quantity of Waste Water Discharged (m^3/annum)	Complies with Definition of Storm Water Overflow
SW3	Not known	Not known	Yes
SW4	Not known	Not known	Yes

Attachment No. E2

Programmes for environmental monitoring for Monitoring and Sampling Points.

Refer to drawings Kilcormac-04 and Kilcormac-05 in Attachment B.2 for locations of sampling points.

Offaly County Council
Sampling Location for UWWT Regulations (2008)

			Co-Ordinates		Frequency/yr
Site name	**Sampling location**	**River Name**	**X**	**Y**	
effluent Kilcormac	see site descriptions				
u/s Kilcormac	East Bridge	Silver River (kilcormac)	218555	214098	12
d/s Kilcormac	Br 1 km d/s of Kilcormac	Silver River (kilcormac)	217720	214683	12

INDEX

SOP NUMBER:	TITLE:
1	Measurement of Biochemical Oxygen Demand
2	Measurement Of Chemical Oxygen Demand
3	Measurement of Ammonia-Salicyclate Method
4	Total Nitrogen (Test N' Tube) TNT Persulfate Digestion Method
5	Total Phosphorous (Test N' Tube) Acid Persulfate Digestion
6	Measurement of Orthophosphate- Ascorbic acid
7	Nitrate High Range (Test N' Tube) – Chromotropic Acid Method
8	Nitrite Low Range – Diazotization Method
9	Composite Sampler Operation
10	Collection and Handling of Samples
11	Measurement of pH
12	Measurement of Dissolved Oxygen
13	Mixed Liquor Suspended Solids
14	Measurement of Ammonia- Nessler Method
15	Measurement of Conductivity
16	Oxi330 Cleaning
17	Re-setting fume hood timer
18	HR 200 Analytical Balance Calibration

ANALYTICAL STANDARD OPERATING PROCEDURE

SOP NO. Env. Lab No: 10	PAGE: 1 of 5
PREPARED BY: Catherine Hogan	DATE: 27/06/08
TITLE: Collection and handling of samples	Version: 001

1.0 WARNING AND SAFETY PRECAUTIONS

Routine field safety precautions shall be followed by analysts taking grab / composite samples from rivers, lakes and sewerage treatment plants.

2.0 INTRODUCTION

There are two methods of Sampling used by Offaly County Council Environment Lab

2.1 GRAB SAMPLING
2.2 COMPOSITE SAMPLING.

2.1 Grab sampling is just what it sounds like; all of the test material is collected at one time. As such, a grab sample reflects performance only at the point in time that the sample was collected, and then only if the sample was properly collected. Grab samples are taken from plants that are below 500 design P.E in size. Grab samples are also taken from rivers i.e. upstream and downstream of WWTP. A grab sample would also be taken from possible potential pollution sites when investigating a complaint.

2.2 Composite Sampling is done using a 24hr portable sampler see SOP NO. Env Lab 009. Composite samples provide a more representative sample and show a more accurate picture of the performance of the Treatment Plant in the previous 24hrs. Composite samples are taken in the larger plants i.e. >500 P.E in size.

Composite samples should be collected in a cooled storage container to maintain the integrity of the samples, after the 24hrs the samples should be collected and transported back to the laboratory for immediate analysis

2 APPARATUS

2.2 Sampling Apparatus/ Scoopers
2.3 Sample Bottles
2.4 Dissolved Oxygen Meter
2.5 Sterile anti-bacterial wipes
2.6 Permanent pen
2.7 Gloves
2.8 Field Log Sheet (C.S 15)
2.9 Composite Sampler

ANALYTICAL STANDARD OPERATING PROCEDURE

SOP NO. Env. Lab No: 10	PAGE: 2 of 5
PREPARED BY: Catherine Hogan	DATE: 27/06/08
TITLE: Collection and handling of samples	Version: 001

3 SAMPLE TAKING AND HANDLING

4.1

A) Field Log Sheet (C.S 15)

The field log sheet should be used when out sampling to record the date and time, type of sample, method used to collect the sample e.g. Composite or grab, location, name of person that collected the sample and any comments. This sheet can also be used to record DO and Temp. of river samples.

B) Sample Labels

A label must be put on all samples collected to identify the sample when it is brought back to the laboratory.

C) Chain of custody record

A chain of custody record should accompany every sample that is subcontracted i.e. in the case of a major pollution incident such as an oil spill. It must include the following: sample number, signatures of collector, date and time and address of collection, sample type, if sample is preserved or not and the turnaround time required. The form also includes information on analysis requested.

4.2 Sampling Methods

Samples are taken over 24hr using the composite sampler or manually using the sample apparatus (scooper) in the case of grab samples. There is a separate scooper for river samples and influent/effluent samples. The samples taken for monitoring of the Urban Waste Water Treatment Regulations are taken in clean 1000ml plastic bottles. If sampling a pollution incident e.g. an oil spill always consult with the subcontracting laboratory to enquire about preservation and sampling containers and where possible use appropriate containers provided by the laboratory.

ANALYTICAL STANDARD OPERATING PROCEDURE

SOP NO. Env. Lab No: 10	PAGE: 3 of 5
PREPARED BY: Catherine Hogan	DATE: 27/06/08
TITLE: Collection and handling of samples	Version: 001

4.3 Procedure for Collecting Samples.

a) River Samples

River samples are to be taken from Bridges if at all possible, safety must always be taken into account when sampling from bridges or banks of rivers. In the case of a pollution incident the sampling order is downstream, discharge pipe and then upstream.
The scooper should first be rinsed out with the water that is to be sampled, then position the scooper facing the direction of the flow of the river and fill the scooper, next rinse out the bottle with some sample then fill the sample bottle to overflow (unless using a sample bottle with preservative). Cap the bottle, label and return to the laboratory. If taking the DO of the river sample leave some sample in the scooper and use this to measure the DO. See section 4.4 for sample storage. If using an external lab ensure chain of custody record is completed.

b) Influent/Effluent Samples

The effluent sample should be taken first (if taking a grab sample) followed by the influent to avoid contamination. The scooper should first be rinsed out with the liquid to be sampled, next rinse the sample bottle, then fill the sample bottle to full to overflow.
When collecting the effluent from a composite sampler,

- first turn off the sampler
- disconnect the sampling tube and wire
- Shake the bottle to mix the sample
- Rinse out the sample bottle with some sample
- Fill the sample bottle to overflow (unless using a sample bottle with preservative).
- Take the sampling pipe out of the channel, rinse off and place back into plastic bag for transport back to the laboratory.
- See section 4.4 for sample storage.
- If using an external lab ensure chain of custody record is completed.

ANALYTICAL STANDARD OPERATING PROCEDURE

SOP NO. Env. Lab No: 10 PAGE: 4of 5

PREPARED BY: Catherine Hogan DATE: 27/06/08

TITLE: Collection and handling of samples Version: 001

Table 4.1 Specific requirements for Sampling

Sample Type	Equipment	Tests to be carried out on site	Volume	Location
Waste Water treatment plants	1. Scooper and pole. 2.1 litre plastic sample bottle 3.Gloves 4. Antibacterial wipes 5. Composite Sampler. 6. Permanent marker and labels.		1 litre	Samples are taken from the influent and effluent (composite samples). . Rinse scooper then bottle with sample first then take sample.
River Samples	1. Scooper and pole. 2.1 litre plastic sample bottle 3.Gloves 4. Antibacterial wipes 5. Permanent marker and labels.	For river samples, DO and Temperature reading should be taken on site.	1 litre	Upstream and Downstream of WWTP
Pollution incident	**Contact the consulting laboratory for details.** 1. Chain of custody record. 2. Field log sheet 3. Permanent marker 4. Cameras 5. GPS	Varies depending on the type of incident.	This will depend on the type of analysis to be carried out by the consulting lab. 1 litre is needed for most physical and chemical analysis.	Record all locations using GPS on the field log sheet.

ANALYTICAL STANDARD OPERATING PROCEDURE

SOP NO. Env. Lab No: 10	PAGE: 5 of 5
PREPARED BY: Catherine Hogan	DATE: 27/06/08
TITLE: Collection and handling of samples	Version: 001

4.4 Sample Storage and Preservation.

Temperature and DO should be tested on site as these parameters can change very quickly. Microbiological activity may affect the nitrate-nitrite-ammonia content, pH or BOD concentration and therefore the shorter the time that elapse between collection of a sample and its analysis the better. All samples should be stored overnight at <4ºc if analysis cannot commence immediately, the temperature should then be increased to 20ºc ± 1ºc before analysis commences or room temperature. In the case of samples for Dangerous Substance analysis these bottles must not be overfilled as there are preservatives in the bottles and overfilling will cause loss of the preservative.

5. CALIBRATION STANDARDS.

Refer to SOP Env. Lab.11 for the pH meter, SOP Env. Lab 15 for the Conductivity meter and SOP Env Lab.12 for dissolved oxygen measurement.

6. ANALYTICAL PROCEDURE

6.1 Conductivity measurement
Refer to SOP Env. Lab. No15 Place the probe in the sample and record the reading on the laboratory sheet C.S 1.

6.2 pH measurement.
Refer to SOP Env. Lab. No 11 Place the probe in the sample and record the reading on the laboratory sheet C.S 1.

6.3 Dissolved Oxygen measurement
Refer to SOP Env. Lab. No 12. Place the probe in the sample and record the reading on the field log sheet C. S 15 along with the Temperature.

7. SOP APPROVAL

SIGNED:_____ DATE:_____
Catherine Casey
Environmental Technician.

APPROVED:_____ DATE:_____
Ide O Connell
Assistant Scientist

Kilcormac Sampling Sites. Receiving Waters: Silver River

1) WWTP

Tullamore to Kilcormac/Birr Road – N52.

Drive through Kilcormac past the bridge and take a right turn for Ferbane opposite supermarket. Go 200 meters and it is on the right-hand side behind stone walls through galvanise gates.

a) Influent

b) **Effluent**

To the rear of the plant at one of the outflow channels.

2) Upstream on Silver River

Opposite Dolans garage on the right at picnic area beside bridge.

3) Downstream on Silver River

This site is located further down past the WWTP. There is a new house with orange stone walls, the sampling point is at the bridge opposite this.

a) Influent b) Effluent

2) Upstream

Attachment No. E3

Tabular Data on Monitoring and Sampling Points

PT_CD	PT_TYPE	MON_TYPE	EASTING	NORTHING	VERIFIED
Point Code Provide label ID's assigned in section E of application	Point Type (e.g., Primary, Secondary, Storm Water Overflow)	Monitoring Type M = Monitoring S = Sampling	6E-digit GPS Irish National Grid Reference	6N-digit GPS Irish National Grid Reference	Y = GPS used N = GPS not used
aSW1u	Primary	S	218555	214098	Not known
aSW1d	Primary	S	217720	214683	Not known

Attachment No. E4

The sampling data pertaining to the discharge based on the samples taken in the 12 months preceding the making of the application.

EntityName	StationName	SamplePurpose	SampleLabCode	SampleDate	Ammonia(N)	BOD	Chemical Oxygen Demand	Conductivity @ 20°C	Nitrates(N)	Nitrites(N)	Ortho-phosphate	pH	Temperature	Total Nitrogen	Total Phosphorus	Total Suspended Solids
Kilcormac Waste Water Treatment Plant	Effluent Kilcormac	Discharge Monitoring - TP	06435324	09/02/2006	38.5	8	90.7	901	10.56	NT	4.98	7.7	7	56	5.87	38
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	06435323	09/02/2006	71.08	100	643	1031	8.36	NT	5.06	7.54	NT	80	8.47	246
Kilcormac Waste Water Treatment Plant	Effluent Kilcormac	Discharge Monitoring - TP	06435387	21/03/2006	21.25	10	64	1046	54.12	1.0385	4.69	7.65	NT	61.6	7.1	42
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	06435386	21/03/2006	29.9	170	736	1135	10.56	0.07854	3.21	7.7	NT	74.4	10.9	366
Kilcormac Waste Water Treatment Plant	Effluent Kilcormac	Discharge Monitoring - TP	06435486	28/06/2006	6.05	18	47	NT	3.41	<0.06	11.1	7.39	16	24	4.4	46
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	06435485	28/06/2006	23.25	230	495	NT	0.45	<0.06	13.1	7.29	18	34	6	22
Kilcormac Waste Water Treatment Plant	Effluent Kilcormac	Discharge Monitoring - TP	06435507	26/07/2006	2.68	34	57	1447	33	1.04	13.45	8.2	NT	NT	5.4	<5
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	06435506	26/07/2006	57	340	606	1917	<0.2	0.04	20.87	Sub Con	NT	NT	14.6	422
Kilcormac Waste Water Treatment Plant	Effluent Kilcormac	Discharge Monitoring - TP	06435610	07/09/2006	3.54	12	60.9	657	9.2	0.6	11.12	7.62	NT	23	NT	16
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	06435609	07/09/2006	40.05	160	1083	1152	0.8	0.08	10.1	8.12	NT	64	7.9	328
Kilcormac Waste Water Treatment Plant	Effluent Kilcormac	Discharge Monitoring - TP	06435767	21/11/2006	3.39	18.6	66.3	585	NT	NT	5.52	7.47	NT	12	3.3	20
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	06435766	21/11/2006	9.65	238.75	428	714	NT	NT	6.22	7.82	NT	28	5.6	182
Kilcormac Waste Water Treatment Plant	Effluent Kilcormac	Discharge Monitoring - TP	07435828	11/01/2007	0.61	6.2	30.8	424	12	0.2065	3.12	7.59	NT	7	1.06	7
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	07435827	11/01/2007	2.72	33	77	311	3	0.0746	6.47	7.4	NT	4	1	50.5
Kilcormac Waste Water Treatment Plant	Effluent Kilcormac	Discharge Monitoring - TP	07435924	06/03/2007	0.79	13.33	61.1	577	NT	0.2579	4.7	7.86	NT	31.5	1.8	22.5
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	07435923	06/03/2007	7.88	121.47	308	670	NT	0.2496	1.17	7.57	NT	8	2.26	156
Kilcormac Waste Water Treatment Plant	Effluent Kilcormac	Discharge Monitoring - TP	07435946	03/04/2007	5.284	>33.79	72.3	NT	NT	>0.3	7.99	7.7	NT	21.5	3.01	21.8
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	07435945	03/04/2007	26.25	>327.5	1407	NT	NT	0.2724	18.83	7.95	NT	71	>3.5	858
Kilcormac Waste Water Treatment Plant	Effluent Kilcormac	Discharge Monitoring - TP	07435980	03/05/2007	5.25	26.2	87.9	1168	NT	NT	NT	7.64	NT	NT	NT	24
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	07435979	03/05/2007	51.7	411	1053	1204	NT	NT	NT	8.1	NT	NT	NT	427
Kilcormac Waste Water Treatment Plant	Effluent Kilcormac	Discharge Monitoring - TP	07436034	06/06/2007	2.364	18.54	66.9	NT	NT	0.543	12.1	7.67	NT	68	4.43	18.5
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	07436033	06/06/2007	46.6	369.1	797	NT	NT	0.006	16.58	8.15	NT	82	9.53	286
Kilcormac Waste Water Treatment Plant	Effluent Kilcormac	Discharge Monitoring - TP	07436066	26/06/2007	2.146	10.86	56.6	801	NT	0.8064	11.99	7.7	NT	23.6	4.1	11.34
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	07436065	26/06/2007	33.1	229.16	468	1020	NT	0.0046	12.52	8.14	NT	>27.5	8.06	225
Kilcormac Waste Water Treatment Plant	Effluent Kilcormac	Discharge Monitoring - TP	07437027	19/07/2007	2.216	9.6	44.2	672	20.6	0.4628	10.375	7.66	NT	23.5	3.7	8
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	07437026	19/07/2007	36.26	>400.5	750	1062	0.4	0.0314	12.81	8	NT	83	8.53	246
Kilcormac Waste Water Treatment Plant	Effluent Kilcormac	Discharge Monitoring - TP	07437063	14/08/2007	0.584	17.02	61.1	494	8.6	0.1409	4.26	7.64	NT	10	1.467	12.5
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	07437062	14/08/2007	11.54	59.85	339	653	NT	0	5.05	7.54	NT	11	3.8	179
Kilcormac Waste Water Treatment Plant	Effluent Kilcormac	Discharge Monitoring - TP	07437181	18/09/2007	11.9	45.65	165	1014	15	2.282	14.085	7.89	NT	51.5	5.35	51
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	07437180	18/09/2007	32.44	>388.05	774	1171	NT	0.0475	6.99	8.08	NT	50	5.6	215
Kilcormac Waste Water Treatment Plant	Effluent Kilcormac	Discharge Monitoring - TP	07437225	18/10/2007	6.772	10.7	59.7	NT	22.7	NT	NT	NT	NT	30	4.29	13
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	07437224	18/10/2007	38.58	226.43	478	NT	NT	NT	NT	NT	NT	51	5.5	199
Kilcormac Waste Water Treatment Plant	Effluent Kilcormac	Discharge Monitoring - TP	07437276	15/11/2007	5.84	3	73	1099	NT	NT	NT	7.89	NT	NT	4.6	13
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	07437275	15/11/2007	>3	373	1106	1450	NT	NT	NT	8.35	NT	NT	16.28	685
Kilcormac Waste Water Treatment Plant	Effluent Kilcormac	Discharge Monitoring - TP	07437292	27/11/2007	5.82	17	77.7	999	NT	NT	NT	7.86	NT	65.5	4.28	25.5
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	07437291	27/11/2007	66.05	285	652	1264	NT	NT	NT	8.33	NT	156	8.89	238
Kilcormac Waste Water Treatment Plant	Effluent Kilcormac	Discharge Monitoring - TP	07437307	04/12/2007	1.924	9	62.6	637	NT	NT	NT	7.4	NT	14	2	9.5
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	07437306	04/12/2007	23.3	364	683	956	NT	NT	NT	8.03	NT	51	7.52	312
Kilcormac Waste Water Treatment Plant	Effluent Kilcormac	Discharge Monitoring - TP	08437330	08/01/2008	3.81	18	55.6	539	8.4	NT	NT	7.45	NT	3.2	2.08	9
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	08437329	08/01/2008	6.88	89.5	265	624	NT	NT	NT	7.52	NT	31	1.49	81
Kilcormac Waste Water Treatment Plant	Effluent Kilcormac	Discharge Monitoring - TP	0843`7400	14/02/2008	7	25	92.6	963	19.8	NT	8.83	7.75	NT	23.2	3.59	40
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	08437399	14/02/2008	29.24	367	773	1077	NT	NT	1.589	7.59	NT	52	NT	272
Kilcormac Waste Water Treatment Plant	Effluent Kilcormac	Discharge Monitoring - TP	08437447	11/03/2008	3.18	14.3	62.1	599	14.2	0.382	NT	7.53	NT	16.8	2.95	11
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	08437446	11/03/2008	26.04	213	502	1052	NT	NT	NT	7.84	NT	NT	5.63	200
Kilcormac Waste Water Treatment Plant	Effluent Kilcormac	Discharge Monitoring - TP	08437511	07/05/2008	1.944	11.2	74.8	995	33.6	0.5532	5.505	7.72	NT	25.4	4.77	11.5
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	08437510	07/05/2008	32.42	215.5	529	1212	NT	NT	12.81	7.96	NT	48	8.99	215
Kilcormac Waste Water Treatment Plant	Effluent Kilcormac	Discharge Monitoring - TP	08437538	27/05/2008	1.184	10	62	996	31.7	0.4816	NT	7.74	NT	35.2	4.18	10.5
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	08437537	27/05/2008	32.54	286	639	1160	NT	NT	NT	7.46	NT	>32.5	7.06	247
Kilcormac Waste Water Treatment Plant	Effluent Kilcormac	Discharge Monitoring - TP	08437573	19/06/2008	3.65	15	77	662	14.9	0.516	10.42	7.57	NT	29.2	3.81	18
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	08437572	19/06/2008	41.36	151.5	335	1309	NT	NT	16.66	8.23	NT	101	7.17	123
Kilcormac Waste Water Treatment Plant	Effluent Kilcormac	Discharge Monitoring - TP	08437613	10/07/2008	2.17	13	53	721	15	0.47	7.38	7.7	NT	21.7	3.11	19
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	08437612	10/07/2008	20.94	141	279	960	NT	NT	11.7	7.87	NT	25	4.69	91
Kilcormac Waste Water Treatment Plant	Effluent Kilcormac	Discharge Monitoring - TP	08437685	26/08/2008	2.12	9	46	765	18.1	0.056	2.58	7.83	NT	19.6	2.53	13
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	08437684	26/08/2008	16.6	72	427	992	NT	NT	13.17	7.73	NT	27.2	4.46	161
Kilcormac Waste Water Treatment Plant	Effluent Kilcormac	Discharge Monitoring - TP	08437731	23/09/2008	2.54	15	70	1015	39.6	0.84	14.52	7.55	NT	44	4.07	19
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	08437730	23/09/2008	43.48	368	802	1208	NT	NT	9.69	7.24	NT	65	9.15	110.5
Kilcormac Waste Water Treatment Plant	Effluent Kilcormac	Discharge Monitoring - TP	08437794	28/10/2008	10.3	>17	81	951	10.6	0.104	7.76	7.76	NT	24.9	3.07	26.5
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	08437793	28/10/2008	16.4	286	790	659	NT	NT	14.35	7.06	NT	10	7.79	576
Kilcormac Waste Water Treatment Plant	Effluent Kilcormac	Discharge Monitoring - TP	08437808	11/11/2008	6.46	12	55	805	13.1	0.7524	7.33	7.83	NT	22.2	2.48	9
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	08437807	11/11/2008	23.3	151	3.93	1092	NT	NT	11.54	8.05	NT	24.4	4.49	160
Kilcormac Waste Water Treatment Plant	Effluent Kilcormac	Discharge Monitoring - TP	08437860	04/12/2008	3.99	17	72	824	22	0.461	10.8	7.69	NT	27.5	3.68	24
Kilcormac Waste Water Treatment Plant	Influent Kilcormac	Discharge Monitoring - TP	08437859	04/12/2008	25.04	138.5	476	986	NT	NT	8.9	7.88	NT	41	4.53	190

Test Report

Customer: Offaly County Council
Water Services,Offaly County
14/01/2009
Aras an Chontae, Charleville
19/09/2008
Tullamore
19/09/2008
Co. Offaly
Account.: 9598

Report No.: 40021
Report Date:
Received Date:
Analysis Date:
Order No.:
Page: 1 of 2
RevisionDate:

Sample ID: 61101

Description: Final effluent from Kilcormac WWTP. Taken 18.09.08 at 1600hrs by CMcC (Q-Lab) 53'10'42N 07'42'45W
212ft

ID	*Test*	*SOP*	*Results*
61101	Cyanide mg/l	Subcontracted	<0.05
61101	Conductivity, uS/cm @ 20°C	STM-C-	907
61101	Boron as B mg/l	Subcontracted	0.07
61101	Selenium as Se mg/l	Subcontracted	<0.04
61101	Chromium as Cr mg/l	Subcontracted	<0.01
61101	Zinc as Zn mg/l	Subcontracted	<0.01
61101	Nickel as Ni mg/l	Subcontracted	<0.01
61101	Dichloromethane ug/l	Subcontracted	<1
61101	Fluoride as F, mg/l	Subcontracted	<0.50
61101	Simazine ug/l	Subcontracted	<0.01
61101	Copper as Cu, mg/l	Subcontracted	<0.01
61101	Barium as Ba mg/l	Subcontracted	0.09
61101	COD mg/l	STM-C-	49
61101	BOD, mg/l	STM-C-	17
61101	Ammonia as NH3-N, mg/l	STM-C-	<0.02
61101	Suspended Solids, mg/l	STM-C-	8
61101	Lead as Pb, mg/l	Subcontracted	<0.03
61101	pH value	STM-C-	7.32
61101	Phenols, ug/l	Subcontracted	<0.5
61101	Total Nitrogen as N, mg/l	STM-C-	45.6
61101	Nitrates as NO3 mg/l	STM-C-	110.8
61101	Nitrites as NO2, mg/l	STM-C-	3.8

Test Report

Customer: Offaly County Council
Water Services,Offaly County
14/01/2009
Aras an Chontae, Charleville
19/09/2008
Tullamore
19/09/2008
Co. Offaly

Account.: 9598

Report No.: 40021
Report Date:
Received Date:
Analysis Date:
Order No.:
Page: 2 of 2
RevisionDate:

61101	Total Phosphorous as P, mg/l	STM-C-	3.95
61101	Dissolved oxygen, mg/l	STM-C-	7.11
61101	Atrazine ug/l	Subcontracted	<0.01
61101	Arsenic as As mg/l	Subcontracted	<0.02
61101	Sulphates as SO4, mg/l	STM-C-	54
61101	Mercury as Hg mg/l	Subcontracted	<0.01
61101	Temperature, °C	STM-C-	14.4
61101	Cadmium as Cd mg/l	Subcontracted	<0.01
61101	Xylenes ug/l	Subcontracted	<1
61101	Tributyltin ug/l	Subcontracted	<0.05
61101	Toluene ug/l	Subcontracted	<1
61101	Ortho Phosphates (as mg P/L)	STM-C-	3.70

Comments

Report Authorised Peter O'Byrne Chem. Lab. Manager

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Test Report

Customer: Offaly County Council
Water Services,Offaly County
14/01/2009
Aras an Chontae, Charleville
08/10/2008
Tullamore
09/10/2008
Co. Offaly

Account.: 9598

Report No.: 40476
Report Date:
Received Date:
Analysis Date:
Order No.:
Page: 1 of 2
RevisionDate:

Sample ID: 61803

Description: Final Effluent Sample taken at Kilcormac WWTP 08/10/08 11.00hrs by Conor McCormack (Q-Lab) 53'10'42N 07'42'45W 212ft

ID	*Test*	*SOP*	*Results*
61803	Total Nitrogen as N, mg/l	STM-C-	23.0
61803	BOD, mg/l	STM-C-	20
61803	Mercury as Hg mg/l	Subcontracted	<0.01
61803	Temperature, °C	STM-C-	12.1
61803	Cadmium as Cd mg/l	Subcontracted	<0.01
61803	Xylenes ug/l	Subcontracted	<1
61803	Tributyltin ug/l	Subcontracted	<0.10
61803	Barium as Ba mg/l	Subcontracted	0.09
61803	Phenols, ug/l	Subcontracted	<0.5
61803	Copper as Cu, mg/l	Subcontracted	<0.01
61803	Nitrates as NO3 mg/l	STM-C-	108.1
61803	Nitrites as NO2, mg/l	STM-C-	2.8
61803	Total Phosphorous as P, mg/l	STM-C-	3.95
61803	Dissolved oxygen, mg/l	STM-C-	7.00
61803	Ortho Phosphates (as mg P/L)	STM-C-	3.80
61803	COD mg/l	STM-C-	102
61803	Sulphates as SO4, mg/l	STM-C-	51
61803	Selenium as Se mg/l	Subcontracted	<0.04
61803	Suspended Solids, mg/l	STM-C-	10
61803	Conductivity, uS/cm @ 20°C	STM-C-	911
61803	Arsenic as As mg/l	Subcontracted	<0.02
61803	Toluene ug/l	Subcontracted	<1

Test Report

Customer: Offaly County Council
Water Services,Offaly County
14/01/2009
Aras an Chontae, Charleville
08/10/2008
Tullamore
09/10/2008
Co. Offaly
Account.: 9598

Report No.: 40476
Report Date:
Received Date:
Analysis Date:
Order No.:
Page: 2 of 2
RevisionDate:

61803	Simazine ug/l	Subcontracted	0.02
61803	Dichloromethane ug/l	Subcontracted	<1
61803	pH value	STM-C-	7.61
61803	Boron as B mg/l	Subcontracted	0.06
61803	Ammonia as NH3-N, mg/l	STM-C-	0.21
61803	Chromium as Cr mg/l	Subcontracted	<0.01
61803	Zinc as Zn mg/l	Subcontracted	0.02
61803	Nickel as Ni mg/l	Subcontracted	<0.01
61803	Lead as Pb, mg/l	Subcontracted	<0.03
61803	Fluoride as F, mg/l	Subcontracted	<0.10
61803	Cyanide mg/l	Subcontracted	<0.05
61803	Atrazine ug/l	Subcontracted	0.04

Comments

Report Authorised Peter O'Byrne Chem. Lab. Manager

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Test Report

Customer:	Offaly County Council	*Report No.:*	40749
	Water Services,Offaly County	*Report Date:*	
	14/01/2009		
	Aras an Chontae, Charleville	*Received Date:*	
	21/10/2008		
	Tullamore	*Analysis Date:*	
	21/10/2008		
	Co. Offaly	*Order No.:*	
Account.:	9598	*Page:*	1 of 2
		RevisionDate:	

Sample ID: 62340

Description: Final Effluent Sample taken at Kilcormac WWTP 21/10/08 11.00hrs by Conor McCormack (Q-Lab) 53'10'42N 07'42'45W 212ft

ID	*Test*	*SOP*	*Results*
62340	Boron as B mg/l	Subcontracted	0.08
62340	Nitrites as NO2, mg/l	STM-C-	1.6
62340	Cadmium as Cd mg/l	Subcontracted	<0.01
62340	Xylenes ug/l	Subcontracted	<1
62340	Tributyltin ug/l	Subcontracted	<0.10
62340	Toluene ug/l	Subcontracted	<1
62340	Simazine ug/l	Subcontracted	<0.01
62340	Mercury as Hg mg/l	Subcontracted	<0.01
62340	Atrazine ug/l	Subcontracted	<0.01
62340	pH value	STM-C-	7.80
62340	Selenium as Se mg/l	Subcontracted	<0.04
62340	Chromium as Cr mg/l	Subcontracted	<0.01
62340	Zinc as Zn mg/l	Subcontracted	0.03
62340	Phenols, ug/l	Subcontracted	<0.1
62340	Total Nitrogen as N, mg/l	STM-C-	18.9
62340	Nitrates as NO3 mg/l	STM-C-	81.0
62340	Dichloromethane ug/l	Subcontracted	<1
62340	Ortho Phosphates (as mg P/L)	STM-C-	3.00
62340	Lead as Pb, mg/l	Subcontracted	<0.03
62340	Fluoride as F, mg/l	Subcontracted	0.10
62340	Cyanide mg/l	Subcontracted	<0.05
62340	Copper as Cu, mg/l	Subcontracted	<0.01

Test Report

Customer:	Offaly County Council Water Services,Offaly County 14/01/2009 Aras an Chontae, Charleville 21/10/2008 Tullamore 21/10/2008 Co. Offaly	*Report No.:*	40749
		Report Date:	
		Received Date:	
		Analysis Date:	
		Order No.:	
Account.:	9598	*Page:*	2 of 2
		RevisionDate:	

62340	Barium as Ba mg/l	Subcontracted	0.06
62340	Sulphates as SO4, mg/l	STM-C-	49
62340	Temperature, °C	STM-C-	12.0
62340	Dissolved oxygen, mg/l	STM-C-	6.02
62340	Nickel as Ni mg/l	Subcontracted	<0.01
62340	COD mg/l	STM-C-	51
62340	BOD, mg/l	STM-C-	11.8
62340	Ammonia as NH3-N, mg/l	STM-C-	0.19
62340	Suspended Solids, mg/l	STM-C-	10
62340	Conductivity, uS/cm @ 20°C	STM-C-	914
62340	Arsenic as As mg/l	Subcontracted	<0.02
62340	Total Phosphorous as P, mg/l	STM-C-	3.10

Comments

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Test Report

Customer:	Offaly County Council	*Report No.:*	41362
	Water Services,Offaly County	*Report Date:*	
	14/01/2009		
	Aras an Chontae, Charleville	*Received Date:*	
	12/11/2008		
	Tullamore	*Analysis Date:*	
	12/11/2008		
	Co. Offaly	*Order No.:*	
Account.:	9598	*Page:*	1 of 2
		RevisionDate:	

Sample ID: 63213

Description: Final Effluent Sample taken at Kilcormac WWTP 12/11/08 11.15hrs by Conor McCormack (Q-Lab) 53'10'42N 07'42'45W 212ft

ID	*Test*	*SOP*	*Results*
63213	Zinc as Zn mg/l	Subcontracted	0.01
63213	Sulphates as SO4, mg/l	STM-C-	44
63213	Toluene ug/l	Subcontracted	<1
63213	Simazine ug/l	Subcontracted	<0.01
63213	Dichloromethane ug/l	Subcontracted	<1
63213	Atrazine ug/l	Subcontracted	<0.01
63213	Boron as B mg/l	Subcontracted	0.06
63213	Xylenes ug/l	Subcontracted	<1
63213	Chromium as Cr mg/l	Subcontracted	<0.01
63213	Cadmium as Cd mg/l	Subcontracted	<0.01
63213	Nickel as Ni mg/l	Subcontracted	<0.01
63213	Lead as Pb, mg/l	Subcontracted	<0.03
63213	Fluoride as F, mg/l	Subcontracted	0.07
63213	Cyanide mg/l	Subcontracted	<0.05
63213	Copper as Cu, mg/l	Subcontracted	<0.01
63213	Barium as Ba mg/l	Subcontracted	0.08
63213	Selenium as Se mg/l	Subcontracted	<0.04
63213	Ammonia as NH3-N, mg/l	STM-C-	0.13
63213	Total Nitrogen as N, mg/l	STM-C-	20.2
63213	Nitrates as NO3 mg/l	STM-C-	81.3
63213	Nitrites as NO2, mg/l	STM-C-	2.1
63213	Total Phosphorous as P, mg/l	STM-C-	2.81

Test Report

Customer: Offaly County Council
Water Services,Offaly County
14/01/2009
Aras an Chontae, Charleville
12/11/2008
Tullamore
12/11/2008
Co. Offaly

Account.: 9598

Report No.: 41362
Report Date:
Received Date:
Analysis Date:
Order No.:
Page: 2 of 2
RevisionDate:

63213	Dissolved oxygen, mg/l	STM-C-	8.00
63213	Ortho Phosphates (as mg P/L)	STM-C-	2.65
63213	Tributyltin ug/l	Subcontracted	<0.01
63213	BOD, mg/l	STM-C-	14.7
63213	Phenols, ug/l	Subcontracted	<0.5
63213	Suspended Solids, mg/l	STM-C-	8
63213	Conductivity, uS/cm @ 20°C	STM-C-	863
63213	Arsenic as As mg/l	Subcontracted	<0.02
63213	pH value	STM-C-	8.07
63213	Mercury as Hg mg/l	Subcontracted	<0.01
63213	Temperature, °C	STM-C-	10.8
63213	COD mg/l	STM-C-	39

Comments

Report Authorised Peter O'Byrne Chem. Lab. Manager

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EntityName	StationName	StationLocalCode	SamplePurpose	SampleLabCode	SampleDate	CompletionDate	Easting	Northing	Alkalinity	Ammonia(N)	BOD	Chloride	COD	Colour	Conductivity @ 25°C	Dissolved Oxygen % Saturation	Dissolved Oxygen (Measurement)	Hardness	Nitrates(N)	Nitrites(N)	Ortho-Phosphate (P)	pH	Suspended Solids	Temperature	Total Nitrogen
25S02 - SILVER (KILCORMAC)	0320 - East Br Kilcormac	320	UWWT Reg - Shannon RBD	08960461	19/03/2008	14/10/2008	218555	214098		0.036	1.87	20	25		586	99.7	12.27		3.365	0.012	0.01	8.11	2.8	6.5	3.1
25S02 - SILVER (KILCORMAC)	0320 - East Br Kilcormac	320	UWWT Reg - Shannon RBD	08960793	15/05/2008	14/10/2008	218555	214098	289.09	0.022	1.13	20.64	18	38	608	118.8000031	12.03	303.6	3.821	0.007	0	8.26	4.4	14.80000019	3.59
25S02 - SILVER (KILCORMAC)	0320 - East Br Kilcormac	320	UWWT Reg - Shannon RBD	08960962	19/06/2008	14/10/2008	218555	214098		0.025	2.7	14.55	41		337	100.6999969	10.59		1.207	0.002	0.003	8.22	10.9	12.69999981	1.47
25S02 - SILVER (KILCORMAC)	0320 - East Br Kilcormac	320	WFD Programme - Shannon RBD	08960054	17/01/2008	14/10/2008	218555	214098	245.98	0.043	1.55	19.92	13	80	573	97.2	11.28	271	3.513	0.014	0.014	8	16	7.1	3.6
25S02 - SILVER (KILCORMAC)	0320 - East Br Kilcormac	320	WFD Programme - Shannon RBD	08960267	20/02/2008	14/10/2008	218555	214098	291	0.039	1.27	17.39	10	34	636	94.9	11.47	296	4.189	0.015	0.009	8.19	0.6	6.6	4.48
25S02 - SILVER (KILCORMAC)	0320 - East Br Kilcormac	320	WFD Programme - Shannon RBD	08960631	17/04/2008	14/10/2008	218555	214098	292.13	0.013	1.51	19.82	34	36	631	107.1999969	12.45	299.7	3.754	0.006	0	8.26	1.2	8	3.83
25S02 - SILVER (KILCORMAC)	0320 - East Br Kilcormac	320	WFD Programme - Shannon RBD	08961129	16/07/2008	14/10/2008	218555	214098	277.36	0.025	1.1	18.24	29	65	563	89.5	9.29	277.9	2.529	0.011	0.019	8.29	4	14.19999981	2.51
25S02 - SILVER (KILCORMAC)	0320 - East Br Kilcormac	320	WFD Programme - Shannon RBD	08961316	14/08/2008	14/10/2008	218555	214098	205.72	0.044	1.8	15.74	46	181	447	89	9.27	238.7	1.798	0.013	0.015	7.59	6.6	13.39999962	2.37
25S02 - SILVER (KILCORMAC)	0320 - East Br Kilcormac	320	WFD Programme - Shannon RBD	08961493	10/09/2008	14/10/2008	218555	214098	201.94	0.029	1.05	14.46	46	156	448	92	9.47	226.6	1.531	0.007	0.008	7.85	11	12	1.97

Test Report

Customer:	Offaly County Council	*Report No.:*	40023
	Water Services,Offaly County	*Report Date:*	
	14/01/2009		
	Aras an Chontae, Charleville	*Received Date:*	
	19/09/2008		
	Tullamore	*Analysis Date:*	
	19/09/2008		
	Co. Offaly	*Order No.:*	
Account.:	9598	*Page:*	1 of 2
		RevisionDate:	

Sample ID: 61103

Description: Riverwater upstream of discharge from Kilcormac WWTP. Taken 18.09.08 at 1620hrs by CMcC (Q-Lab)
53'19'37N, 07'43'18W, 230ft

ID	*Test*	*SOP*	*Results*
61103	Nitrites as NO2, mg/l	STM-C-	<0.010
61103	Suspended Solids, mg/l	STM-C-	2
61103	Copper as Cu, mg/l	Subcontracted	<0.01
61103	Barium as Ba mg/l	Subcontracted	0.18
61103	Conductivity, uS/cm @ 20°C	STM-C-	531
61103	Sulphates as SO4, mg/l	STM-C-	15
61103	Phenols, ug/l	Subcontracted	<0.5
61103	Fluoride as F, mg/l	Subcontracted	0.06
61103	Nitrates as NO3 mg/l	STM-C-	11.5
61103	Lead as Pb, mg/l	Subcontracted	<0.03
61103	Total Phosphorous as P, mg/l	STM-C-	0.03
61103	Dissolved oxygen, mg/l	STM-C-	9.40
61103	Ortho Phosphates (as mg P/L)	STM-C-	0.02
61103	COD mg/l	STM-C-	15
61103	BOD, mg/l	STM-C-	1.9
61103	Ammonia as NH3-N, mg/l	STM-C-	<0.02
61103	Total Nitrogen as N, mg/l	STM-C-	2.6
61103	Dichloromethane ug/l	Subcontracted	<1
61103	pH value	STM-C-	7.97
61103	Mercury as Hg mg/l	Subcontracted	<0.01
61103	Temperature, °C	STM-C-	12.2
61103	Cadmium as Cd mg/l	Subcontracted	<0.01

Test Report

Customer: Offaly County Council
Water Services,Offaly County
14/01/2009
Aras an Chontae, Charleville
19/09/2008
Tullamore
19/09/2008
Co. Offaly
Account.: 9598

Report No.: 40023
Report Date:
Received Date:
Analysis Date:
Order No.:
Page: 2 of 2
RevisionDate:

61103	Xylenes ug/l	Subcontracted	<1
61103	Tributyltin ug/l	Subcontracted	<0.05
61103	Cyanide mg/l	Subcontracted	<0.05
61103	Simazine ug/l	Subcontracted	<0.01
61103	Arsenic as As mg/l	Subcontracted	<0.02
61103	Atrazine ug/l	Subcontracted	<0.01
61103	Boron as B mg/l	Subcontracted	0.03
61103	Selenium as Se mg/l	Subcontracted	<0.04
61103	Chromium as Cr mg/l	Subcontracted	<0.01
61103	Zinc as Zn mg/l	Subcontracted	<0.01
61103	Nickel as Ni mg/l	Subcontracted	<0.01
61103	Toluene ug/l	Subcontracted	<1

Comments

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Test Report

Customer:	Offaly County Council Water Services,Offaly County 14/01/2009 Aras an Chontae, Charleville 08/10/2008 Tullamore 09/10/2008 Co. Offaly	*Report No.:*	40477
		Report Date:	
		Received Date:	
		Analysis Date:	
		Order No.:	
Account.:	9598	*Page:*	1 of 2
		RevisionDate:	

Sample ID: 61804

Description: Sample taken upstream of discharge point at Kilcormac WWTP 08/10/08 11.45hrs by Conor McCormack
(Q-Lab) 53'19'37N, 07'43'18W, 230ft

ID	*Test*	*SOP*	*Results*
61804	Lead as Pb, mg/l	Subcontracted	<0.03
61804	Total Nitrogen as N, mg/l	STM-C-	11.1
61804	Dichloromethane ug/l	Subcontracted	<1
61804	Atrazine ug/l	Subcontracted	<0.01
61804	Boron as B mg/l	Subcontracted	<0.01
61804	Selenium as Se mg/l	Subcontracted	<0.04
61804	Chromium as Cr mg/l	Subcontracted	<0.01
61804	Toluene ug/l	Subcontracted	<1
61804	Nickel as Ni mg/l	Subcontracted	<0.01
61804	Tributyltin ug/l	Subcontracted	<0.10
61804	Fluoride as F, mg/l	Subcontracted	<0.10
61804	Cyanide mg/l	Subcontracted	<0.05
61804	Copper as Cu, mg/l	Subcontracted	<0.01
61804	Barium as Ba mg/l	Subcontracted	0.17
61804	Sulphates as SO4, mg/l	STM-C-	22
61804	Phenols, ug/l	Subcontracted	<0.5
61804	Zinc as Zn mg/l	Subcontracted	<0.01
61804	Conductivity, uS/cm @ 20°C	STM-C-	530
61804	Nitrites as NO2, mg/l	STM-C-	<0.010
61804	Total Phosphorous as P, mg/l	STM-C-	<0.02
61804	Dissolved oxygen, mg/l	STM-C-	9.48
61804	Ortho Phosphates (as mg P/L)	STM-C-	<0.02

Test Report

Customer:	Offaly County Council Water Services,Offaly County 14/01/2009 Aras an Chontae, Charleville 08/10/2008 Tullamore 09/10/2008 Co. Offaly	*Report No.:* *Report Date:* *Received Date:* *Analysis Date:* *Order No.:*	40477
Account.:	9598	*Page:* *RevisionDate:*	2 of 2

61804	COD mg/l	STM-C-	39
61804	BOD, mg/l	STM-C-	1.8
61804	Simazine ug/l	Subcontracted	<0.01
61804	Suspended Solids, mg/l	STM-C-	2
61804	Nitrates as NO3 mg/l	STM-C-	11.1
61804	Arsenic as As mg/l	Subcontracted	<0.02
61804	pH value	STM-C-	7.76
61804	Mercury as Hg mg/l	Subcontracted	<0.01
61804	Temperature, °C	STM-C-	10.8
61804	Cadmium as Cd mg/l	Subcontracted	<0.01
61804	Xylenes ug/l	Subcontracted	<1
61804	Ammonia as NH3-N, mg/l	STM-C-	<0.02

Comments

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Test Report

Customer:	Offaly County Council	*Report No.:*	40750
	Water Services,Offaly County	*Report Date:*	
	14/01/2009		
	Aras an Chontae, Charleville	*Received Date:*	
	21/10/2008		
	Tullamore	*Analysis Date:*	
	21/10/2008		
	Co. Offaly	*Order No.:*	
Account.:	9598	*Page:*	1 of 2
		RevisionDate:	

Sample ID: 62341

Description: Sample taken upstream of discharge point at Kilcormac WWTP 21/10/08 10.45hrs by Conor McCormack

(Q-Lab) 53'19'37N, 07'43'18W, 230ft

ID	*Test*	*SOP*	*Results*
62341	Chromium as Cr mg/l	Subcontracted	<0.01
62341	Barium as Ba mg/l	Subcontracted	0.14
62341	Tributyltin ug/l	Subcontracted	<0.10
62341	Toluene ug/l	Subcontracted	<1
62341	Simazine ug/l	Subcontracted	<0.01
62341	Dichloromethane ug/l	Subcontracted	<1
62341	Atrazine ug/l	Subcontracted	<0.01
62341	Cadmium as Cd mg/l	Subcontracted	<0.01
62341	Selenium as Se mg/l	Subcontracted	<0.04
62341	Temperature, °C	STM-C-	9.4
62341	Zinc as Zn mg/l	Subcontracted	<0.01
62341	Nickel as Ni mg/l	Subcontracted	<0.01
62341	Lead as Pb, mg/l	Subcontracted	<0.03
62341	Fluoride as F, mg/l	Subcontracted	<0.10
62341	Cyanide mg/l	Subcontracted	<0.05
62341	Copper as Cu, mg/l	Subcontracted	<0.01
62341	Boron as B mg/l	Subcontracted	0.02
62341	Total Nitrogen as N, mg/l	STM-C-	2.9
62341	Suspended Solids, mg/l	STM-C-	2
62341	Conductivity, uS/cm @ 20°C	STM-C-	590
62341	Arsenic as As mg/l	Subcontracted	<0.02
62341	pH value	STM-C-	7.86

Test Report

Customer: Offaly County Council
Water Services,Offaly County
14/01/2009
Aras an Chontae, Charleville
21/10/2008
Tullamore
21/10/2008
Co. Offaly

Account.: 9598

Report No.: 40750
Report Date:
Received Date:
Analysis Date:
Order No.:
Page: 2 of 2
RevisionDate:

62341	COD mg/l	STM-C-	38
62341	BOD, mg/l	STM-C-	1.9
62341	Xylenes ug/l	Subcontracted	<1
62341	Phenols, ug/l	Subcontracted	<0.1
62341	Ammonia as NH3-N, mg/l	STM-C-	<0.02
62341	Nitrates as NO3 mg/l	STM-C-	12.0
62341	Nitrites as NO2, mg/l	STM-C-	<0.010
62341	Total Phosphorous as P, mg/l	STM-C-	<0.02
62341	Dissolved oxygen, mg/l	STM-C-	9.38
62341	Ortho Phosphates (as mg P/L)	STM-C-	<0.02
62341	Mercury as Hg mg/l	Subcontracted	<0.01
62341	Sulphates as SO4, mg/l	STM-C-	20

Comments

Report Authorised Peter O'Byrne Chem. Lab. Manager

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Test Report

Customer: Offaly County Council
Water Services,Offaly County
14/01/2009
Aras an Chontae, Charleville
12/11/2008
Tullamore
12/11/2008
Co. Offaly

Account.: 9598

Report No.: 41363
Report Date:
Received Date:
Analysis Date:
Order No.:
Page: 1 of 2
RevisionDate:

Sample ID: 63214

Description: Riverwater upstream of discharge from Kilcormac WWTP. Taken 12.11.08 at 11.00hrs by CMcC (Q-Lab)
53'19'37N, 07'43'18W, 230ft

ID	*Test*	*SOP*	*Results*
63214	Chromium as Cr mg/l	Subcontracted	<0.01
63214	Barium as Ba mg/l	Subcontracted	0.15
63214	Tributyltin ug/l	Subcontracted	<0.01
63214	Toluene ug/l	Subcontracted	<1
63214	Simazine ug/l	Subcontracted	<0.01
63214	Dichloromethane ug/l	Subcontracted	<1
63214	Atrazine ug/l	Subcontracted	<0.01
63214	Cadmium as Cd mg/l	Subcontracted	<0.01
63214	Selenium as Se mg/l	Subcontracted	<0.04
63214	Temperature, °C	STM-C-	7.8
63214	Zinc as Zn mg/l	Subcontracted	<0.01
63214	Nickel as Ni mg/l	Subcontracted	<0.01
63214	Lead as Pb, mg/l	Subcontracted	<0.03
63214	Fluoride as F, mg/l	Subcontracted	0.06
63214	Cyanide mg/l	Subcontracted	<0.05
63214	Copper as Cu, mg/l	Subcontracted	<0.01
63214	Boron as B mg/l	Subcontracted	0.02
63214	BOD, mg/l	STM-C-	0.6
63214	Phenols, ug/l	Subcontracted	<0.5
63214	Total Nitrogen as N, mg/l	STM-C-	3.0
63214	Nitrates as NO3 mg/l	STM-C-	11.0
63214	Nitrites as NO2, mg/l	STM-C-	<0.010

Test Report

Customer: Offaly County Council
Water Services,Offaly County
14/01/2009
Aras an Chontae, Charleville
12/11/2008
Tullamore
12/11/2008
Co. Offaly

Account.: 9598

Report No.: 41363
Report Date:
Received Date:
Analysis Date:
Order No.:
Page: 2 of 2
RevisionDate:

63214	Total Phosphorous as P, mg/l	STM-C-	<0.02
63214	Dissolved oxygen, mg/l	STM-C-	9.90
63214	Xylenes ug/l	Subcontracted	<1
63214	COD mg/l	STM-C-	30
63214	Sulphates as SO4, mg/l	STM-C-	23
63214	Ammonia as NH3-N, mg/l	STM-C-	<0.02
63214	Suspended Solids, mg/l	STM-C-	2
63214	Conductivity, uS/cm @ 20°C	STM-C-	493
63214	Arsenic as As mg/l	Subcontracted	<0.02
63214	pH value	STM-C-	7.90
63214	Mercury as Hg mg/l	Subcontracted	<0.01
63214	Ortho Phosphates (as mg P/L)	STM-C-	<0.02

Comments

Report Authorised Peter O'Byrne Chem. Lab. Manager

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Total Oxidised Nitrogen	Total Phosphorus	EntityName	StationName	StationLocalCode	SamplePurpose	SampleLabCode	SampleDate	Easting	Northing	Alkalinity	Ammonia(N)	BOD	Chloride	COD	Colour	Conductivity @ 25°C	Dissolved Oxygen % Saturation	Dissolved Oxygen (Measurement)	Hardness	Nitrates(N)	Nitrites(N)	Ortho-Phosphate (P)	pH	Suspended Solids	Temperature	Total Nitrogen	Total Oxidised Nitrogen	Total Phosphorus
3.377	0.014	25S02 - SILVER (KILCORMAC)	0400 - Br 1km d/s Kilcormac	400	UWWT Reg - Shannon RBD	08960462	19/03/2008	217720	214683		0.033	1.48	20.09	25		591	100.5	12.18		3.554	0.013	0.016	8.09	1.8	6.8	3.3	3.567	0.021
3.828	0.011	25S02 - SILVER (KILCORMAC)	0400 - Br 1km d/s Kilcormac	400	UWWT Reg - Shannon RBD	08960794	15/05/2008	217720	214683	285.37	0.024	1.14	21.4	30	32	605	131	13.13	292.9	4.116	0.012	0.003	8.35	4.8	15.19999981	3.76	4.128	0
1.209	0.021	25S02 - SILVER (KILCORMAC)	0400 - Br 1km d/s Kilcormac	400	UWWT Reg - Shannon RBD	08960963	19/06/2008	217720	214683		0.034	2.9	14.44	36		330	102.3000031	10.66		1.267	0.004	0.013	8.07	10.5	13.19999981	1.48	1.271	0.032
3.527	0.034	25S02 - SILVER (KILCORMAC)	0400 - Br 1km d/s Kilcormac	400	WFD Programme - Shannon RBD	08960055	17/01/2008	217720	214683	250.05	0.046	1.25	20.16	6	64	582	98	11.35	272.1	3.642	0.015	0.016	8.03	6.8	7.4	3.7	3.654	0.038
4.204	0.009	25S02 - SILVER (KILCORMAC)	0400 - Br 1km d/s Kilcormac	400	WFD Programme - Shannon RBD	08960268	20/02/2008	217720	214683	213.848	0.059	1.59	18.03	21	31	639	95.1	11.49	295.8	4.267	0.017	0.02	8.22	2.4	6.6	4.78	4.284	0.014
3.76	0.002	25S02 - SILVER (KILCORMAC)	0400 - Br 1km d/s Kilcormac	400	WFD Programme - Shannon RBD	08960632	17/04/2008	217720	214683	293.76	0.019	0.87	19.98	38	33	635	109.5	12.79	295.9	3.825	0.007	0.006	8.31	4	8.100000381	4	3.832	0.003
2.54	0.008	25S02 - SILVER (KILCORMAC)	0400 - Br 1km d/s Kilcormac	400	WFD Programme - Shannon RBD	08961130	16/07/2008	217720	214683	278.25	0.034	1.7	18.62	32	66	575	90	9.16	276.3	2.678	0.012	0.022	8.27	4.6	14.5	2.72	2.69	0.036
1.811	0.031	25S02 - SILVER (KILCORMAC)	0400 - Br 1km d/s Kilcormac	400	WFD Programme - Shannon RBD	08961317	14/08/2008	217720	214683	210.09	0.042	1.3	15.57	39	175	453	92.09999847	9.57	240.2	1.924	0.013	0.016	7.69	7.8	13.5	2.37	1.937	0.033
1.538	0.027	25S02 - SILVER (KILCORMAC)	0400 - Br 1km d/s Kilcormac	400	WFD Programme - Shannon RBD	08961494	10/09/2008	217720	214683	207.48	0.036	1.24	13.93		152	439	93	9.85	221.8	1.625	0.007	0.011	7.87		12.19999981		1.632	

Test Report

Customer: Offaly County Council
Water Services,Offaly County
Aras an Chontae, Charleville
Tullamore
Co. Offaly
Account.: 9598

Report No.: 40022
Report Date: 14/01/2009
Received Date: 19/09/2008
Analysis Date: 19/09/2008
Order No.:
Page: 1 of 2
RevisionDate:

Sample ID: 61102

Description: Riverwater downstream of discharge from Kilcormac WWTP. Taken 18.09.08 at 1610hrs by CMcC (Q-Lab)53'18'59N, 07'44'15W, 212ft

ID	*Test*	*SOP*	*Results*
61102	Cadmium as Cd mg/l	Subcontracted	<0.01
61102	Nitrites as NO2, mg/l	STM-C-	0.317
61102	Ammonia as NH3-N, mg/l	STM-C-	<0.02
61102	Suspended Solids, mg/l	STM-C-	4
61102	Conductivity, uS/cm @ 20°C	STM-C-	538
61102	Arsenic as As mg/l	Subcontracted	<0.02
61102	pH value	STM-C-	7.86
61102	COD mg/l	STM-C-	23
61102	Temperature, °C	STM-C-	12.3
61102	Ortho Phosphates (as mg P/L)	STM-C-	<0.02
61102	Xylenes ug/l	Subcontracted	<1
61102	Tributyltin ug/l	Subcontracted	<0.05
61102	Toluene ug/l	Subcontracted	<1
61102	Simazine ug/l	Subcontracted	<0.01
61102	Dichloromethane ug/l	Subcontracted	<1
61102	Nitrates as NO3 mg/l	STM-C-	0.097
61102	Mercury as Hg mg/l	Subcontracted	<0.01
61102	Copper as Cu, mg/l	Subcontracted	<0.01
61102	Phenols, ug/l	Subcontracted	<0.5
61102	Total Nitrogen as N, mg/l	STM-C-	2.8
61102	Chromium as Cr mg/l	Subcontracted	<0.01
61102	Zinc as Zn mg/l	Subcontracted	<0.01

Test Report

Customer: Offaly County Council
Water Services,Offaly County
14/01/2009
Aras an Chontae, Charleville
19/09/2008
Tullamore
19/09/2008
Co. Offaly

Account.: 9598

Report No.: 40022
Report Date:
Received Date:
Analysis Date:
Order No.:
Page: 2 of 2
RevisionDate:

61102	Nickel as Ni mg/l	Subcontracted	<0.01
61102	Lead as Pb, mg/l	Subcontracted	<0.03
61102	BOD, mg/l	STM-C-	1.9
61102	Cyanide mg/l	Subcontracted	<0.05
61102	Sulphates as SO4, mg/l	STM-C-	21
61102	Barium as Ba mg/l	Subcontracted	0.15
61102	Atrazine ug/l	Subcontracted	<0.01
61102	Boron as B mg/l	Subcontracted	0.03
61102	Selenium as Se mg/l	Subcontracted	<0.04
61102	Total Phosphorous as P, mg/l	STM-C-	<0.02
61102	Dissolved oxygen, mg/l	STM-C-	9.38
61102	Fluoride as F, mg/l	Subcontracted	0.06

Comments

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Test Report

Customer:	Offaly County Council	*Report No.:*	40478
	Water Services,Offaly County	*Report Date:*	
	14/01/2009		
	Aras an Chontae, Charleville	*Received Date:*	
	08/10/2008		
	Tullamore	*Analysis Date:*	
	09/10/2008		
	Co. Offaly	*Order No.:*	
Account.:	9598	*Page:*	1 of 2
		RevisionDate:	

Sample ID: 61805

Description: Sample taken downstream of discharge point at Kilcormac WWTP 08/10/08 10.50hrs by Conor McCormack

CMcC (Q-Lab)53'18'59N, 07'44'15W, 212ft

ID	*Test*	*SOP*	*Results*
61805	Chromium as Cr mg/l	Subcontracted	<0.01
61805	Barium as Ba mg/l	Subcontracted	0.18
61805	Toluene ug/l	Subcontracted	<1
61805	Simazine ug/l	Subcontracted	<0.01
61805	Dichloromethane ug/l	Subcontracted	<1
61805	Sulphates as SO4, mg/l	STM-C-	24
61805	Atrazine ug/l	Subcontracted	<0.01
61805	Xylenes ug/l	Subcontracted	<1
61805	Selenium as Se mg/l	Subcontracted	<0.04
61805	Cadmium as Cd mg/l	Subcontracted	<0.01
61805	Zinc as Zn mg/l	Subcontracted	<0.01
61805	Nickel as Ni mg/l	Subcontracted	<0.01
61805	Lead as Pb, mg/l	Subcontracted	<0.01
61805	Fluoride as F, mg/l	Subcontracted	<0.10
61805	Cyanide mg/l	Subcontracted	<0.05
61805	Copper as Cu, mg/l	Subcontracted	<0.01
61805	Boron as B mg/l	Subcontracted	<0.01
61805	Ammonia as NH3-N, mg/l	STM-C-	<0.02
61805	Total Nitrogen as N, mg/l	STM-C-	2.9
61805	Nitrates as NO3 mg/l	STM-C-	11.6
61805	Nitrites as NO2, mg/l	STM-C-	0.091
61805	Total Phosphorous as P, mg/l	STM-C-	0.04

Test Report

Customer:	Offaly County Council Water Services,Offaly County 14/01/2009 Aras an Chontae, Charleville 08/10/2008 Tullamore 09/10/2008 Co. Offaly	*Report No.:* *Report Date:* *Received Date:* *Analysis Date:* *Order No.:*	40478
Account.:	9598	*Page:* *RevisionDate:*	2 of 2

61805	Dissolved oxygen, mg/l	STM-C-	9.49
61805	Ortho Phosphates (as mg P/L)	STM-C-	0.04
61805	Tributyltin ug/l	Subcontracted	<0.10
61805	BOD, mg/l	STM-C-	1.8
61805	Phenols, ug/l	Subcontracted	0.6
61805	Suspended Solids, mg/l	STM-C-	2
61805	Conductivity, uS/cm @ 20°C	STM-C-	538
61805	Arsenic as As mg/l	Subcontracted	<0.02
61805	pH value	STM-C-	7.80
61805	Mercury as Hg mg/l	Subcontracted	<0.01
61805	Temperature, °C	STM-C-	10.5
61805	COD mg/l	STM-C-	36

Comments

Report Authorised Peter O'Byrne Chem. Lab. Manager

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Test Report

Customer:	Offaly County Council Water Services,Offaly County 14/01/2009 Aras an Chontae, Charleville 21/10/2008 Tullamore 21/10/2008 Co. Offaly	*Report No.:*	40751
		Report Date:	
		Received Date:	
		Analysis Date:	
		Order No.:	
Account.:	9598	*Page:*	1 of 2
		RevisionDate:	

Sample ID: 62342

Description: Sample taken downstream of discharge point at Kilcormac WWTP 21/10/08 11.15hrs by Conor McCormack

CMcC (Q-Lab)53'18'59N, 07'44'15W, 212ft

ID	*Test*	*SOP*	*Results*
62342	pH value	STM-C-	7.91
62342	Simazine ug/l	Subcontracted	<0.01
62342	Ortho Phosphates (as mg P/L)	STM-C-	0.03
62342	COD mg/l	STM-C-	41
62342	BOD, mg/l	STM-C-	2.0
62342	Ammonia as NH3-N, mg/l	STM-C-	<0.02
62342	Suspended Solids, mg/l	STM-C-	2
62342	Total Phosphorous as P, mg/l	STM-C-	0.04
62342	Arsenic as As mg/l	Subcontracted	<0.02
62342	Nitrites as NO2, mg/l	STM-C-	0.036
62342	Mercury as Hg mg/l	Subcontracted	<0.01
62342	Temperature, °C	STM-C-	9.2
62342	Cadmium as Cd mg/l	Subcontracted	<0.01
62342	Xylenes ug/l	Subcontracted	<1
62342	Tributyltin ug/l	Subcontracted	<0.10
62342	Toluene ug/l	Subcontracted	<1
62342	Conductivity, uS/cm @ 20°C	STM-C-	590
62342	Cyanide mg/l	Subcontracted	<0.05
62342	Atrazine ug/l	Subcontracted	<0.01
62342	Boron as B mg/l	Subcontracted	0.02
62342	Selenium as Se mg/l	Subcontracted	<0.04
62342	Chromium as Cr mg/l	Subcontracted	<0.01

Test Report

Customer: Offaly County Council
Water Services,Offaly County
14/01/2009
Aras an Chontae, Charleville
21/10/2008
Tullamore
21/10/2008
Co. Offaly
Account.: 9598

Report No.: 40751
Report Date:
Received Date:
Analysis Date:
Order No.:
Page: 2 of 2
RevisionDate:

62342	Zinc as Zn mg/l	Subcontracted	<0.01
62342	Nickel as Ni mg/l	Subcontracted	<0.01
62342	Dissolved oxygen, mg/l	STM-C-	9.18
62342	Fluoride as F, mg/l	Subcontracted	<0.10
62342	Dichloromethane ug/l	Subcontracted	<1
62342	Copper as Cu, mg/l	Subcontracted	<0.01
62342	Barium as Ba mg/l	Subcontracted	0.13
62342	Sulphates as SO4, mg/l	STM-C-	24
62342	Phenols, ug/l	Subcontracted	<0.1
62342	Total Nitrogen as N, mg/l	STM-C-	3.1
62342	Nitrates as NO3 mg/l	STM-C-	12.9
62342	Lead as Pb, mg/l	Subcontracted	,0.03

Comments

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Test Report

Customer:	Offaly County Council Water Services,Offaly County 14/01/2009 Aras an Chontae, Charleville 12/11/2008 Tullamore 12/11/2008 Co. Offaly	*Report No.:*	41364
		Report Date:	
		Received Date:	
		Analysis Date:	
		Order No.:	
Account.:	9598	*Page:*	1 of 2
		RevisionDate:	

Sample ID: 63215

Description: Sample taken downstream of discharge point at Kilcormac WWTP 12/11/08 10.30hrs by Conor McCormack

CMcC (Q-Lab)53'18'59N, 07'44'15W, 212ft

ID	*Test*	*SOP*	*Results*
63215	Toluene ug/l	Subcontracted	<1
63215	Zinc as Zn mg/l	Subcontracted	<0.01
63215	Arsenic as As mg/l	Subcontracted	<0.02
63215	pH value	STM-C-	7.92
63215	Mercury as Hg mg/l	Subcontracted	<0.01
63215	Temperature, °C	STM-C-	8.0
63215	Cadmium as Cd mg/l	Subcontracted	<0.01
63215	Suspended Solids, mg/l	STM-C-	2
63215	Tributyltin ug/l	Subcontracted	<0.01
63215	Ammonia as NH3-N, mg/l	STM-C-	<0.02
63215	Simazine ug/l	Subcontracted	<0.01
63215	Dichloromethane ug/l	Subcontracted	<1
63215	Atrazine ug/l	Subcontracted	<0.01
63215	Boron as B mg/l	Subcontracted	0.02
63215	Selenium as Se mg/l	Subcontracted	<0.04
63215	Chromium as Cr mg/l	Subcontracted	<0.01
63215	Xylenes ug/l	Subcontracted	<1
63215	Nitrates as NO3 mg/l	STM-C-	12.0
63215	Lead as Pb, mg/l	Subcontracted	<0.03
63215	Fluoride as F, mg/l	Subcontracted	0.06
63215	Cyanide mg/l	Subcontracted	<0.05
63215	Copper as Cu, mg/l	Subcontracted	<0.01

Test Report

Customer: Offaly County Council
Water Services,Offaly County
14/01/2009
Aras an Chontae, Charleville
12/11/2008
Tullamore
12/11/2008
Co. Offaly
Account.: 9598

Report No.: 41364
Report Date:
Received Date:
Analysis Date:
Order No.:
Page: 2 of 2
RevisionDate:

63215	Barium as Ba mg/l	Subcontracted	0.14
63215	Sulphates as SO4, mg/l	STM-C-	22
63215	Conductivity, uS/cm @ 20°C	STM-C-	495
63215	Total Nitrogen as N, mg/l	STM-C-	3.1
63215	Nickel as Ni mg/l	Subcontracted	<0.01
63215	Nitrites as NO2, mg/l	STM-C-	0.091
63215	Total Phosphorous as P, mg/l	STM-C-	0.03
63215	Dissolved oxygen, mg/l	STM-C-	9.87
63215	Ortho Phosphates (as mg P/L)	STM-C-	0.02
63215	COD mg/l	STM-C-	31
63215	BOD, mg/l	STM-C-	1.9
63215	Phenols, ug/l	Subcontracted	<0.5

Comments

Report Authorised Peter O'Byrne Chem. Lab. Manager

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Attachment No. F.1

Assessment of Impact on Receiving Surface or Ground Water

The results of sampling carried out at East Bridge, approximately 800m upstream of Kilcormac WwTW primary discharge point, indicate an unpolluted existing environment in the receiving waterbody. We note that ortho-phosphate levels (taken to be approximately equal to MRP) in the receiving waters upstream of the final effluent outfall, are within the limits set for the higher quality ratings (Q4 and Q5), as set in the third schedule of the Phosphorus Regulations (SI 258/1998), with the average value over the last year measuring 9μg/l. The results of separate monitoring carried out upstream of the primary discharge point are described in Table F1(i)(a) attached and reflect those results described above. Table F1(i)(b) attached, shows levels of dangerous substances measured in the receiving waters upstream of the discharge point and indicates that most measured levels of these substances are well below the allowable limits set in the Water Quality (Dangerous Substances) Regulations, 2001 (SI No. 12/2001). Although the limits of detection for Cyanide and Lead are above the allowable limits set by the Regulations, it is not expected that the Regulation limits are exceeded for these substances. We also note that the last five substances measured, namely Boron, Cadmium, Mercury, Selenium and Barium have no limits defined in S.I. No.12/2001.

The treated effluent quality of the discharge from the Kilcormac WwTW generally complies with the requirements of the Urban Wastewater Treatment Regulations. The small number of occasional exceedances recorded in respect of BOD and Suspended Solids are allowable within the terms of the Regulations. However, it is proposed to increase the design capacity of the plant to 2,500 p.e. to provide for the sustainable development of the village. The wastewater treatment works will be upgraded to ensure effluent concentration limits of 25mg/l for BOD and 35mg/l for Suspended Solids and will also provide ferric dosing to effect chemical precipitation of phosphorus to achieve a 2mg/l effluent standard. The BOD and Suspended Solids proposed limits are in line with those limits set by the Urban Wastewater Treatment Regulations, 2001 (SI 254/2001). The results of separate monitoring (see attachment E4), describe levels of dangerous substances measured in the effluent. The results indicate that most measured levels of these substances are well below the allowable limits set in the Water Quality (Dangerous Substances) Regulations. Although the limits of detection for Cyanide and Lead are above the allowable limits set by the Regulations, it is not expected that the Regulation limits are exceeded for these substances.

Below are calculations for the assimilative capacity of the receiving water body in relation to the monitored parameters for which limits have been set.
NOTE: All calculations below are based on the following equation:

$$C_{FM} = \frac{(C_{EFF} * Q_{EFF}) + (Q_{BACK} * C_{BACK})}{(Q_{EFF} + Q_{BACK})}$$

where C_{FM} Concentration in the fully mixed final effluent/receiving water (mg/l)

C_{EFF} Concentration of the treated effluent (mg/l)

Q_{EFF} Effluent flowrate (m^3/day)
Q_{BACK} Background flow in the stream as 95 percentile (m^3/day)
C_{BACK} Background level in the receiving Water (mg/l)

BOD

C_{EFF} = 25 mg/l
Q_{EFF} = 231 m^3/day
Q_{BACK} = 27,302 m^3/day
C_{BACK} = 1.56 mg/l

⇒ C_{FM} = 1.76 mg/l

COD

C_{EFF} = 125 mg/l
Q_{EFF} = 231 m^3/day
Q_{BACK} = 27,302 m^3/day
C_{BACK} = 29.1 mg/l

⇒ C_{FM} = 30 mg/l

Suspended Solids

C_{EFF} = 35 mg/l
Q_{EFF} = 231 m^3/day
Q_{BACK} = 27,302 m^3/day
C_{BACK} = 6.32 mg/l

⇒ C_{FM} = 6.56 mg/l

Total Phosphorus

C_{EFF} = 2 mg/l
Q_{EFF} = 231 m^3/day
Q_{MEAN} = 193,709 m^3/day
C_{BACK} = 0.0174 mg/l

⇒ C_{FM} = 0.02 mg/l

The results of sampling carried out at the bridge downstream of Kilcormac WwTW, approximately 1km downstream of Kilcormac WwTW primary discharge point, indicate that the effluent from the WwTW has little effect on BOD, COD and Suspended Solids levels, with average values measured equal to or less than those measured upstream of the effluent point. This is reflected in the assimilative calculations carried out above, which indicate that high dilution levels are available in the receiving waterbody. Although a small rise in Total Phosphorus and ortho-phosphate levels was measured downstream of the primary effluent point, we note that ortho-phosphate levels (taken to be equal to MRP) in the receiving waters downstream of the final effluent outfall are within the limits set for the Q4 water quality standard, as set by the third schedule of the Phosphorus Regulations (SI 258/1998), with the average value over the last year measuring 14μg/l.

Table F1(i)(b) attached for levels of dangerous substances measured in the receiving waters downstream of the discharge point indicate that the effluent from the WwTW has little effect on dangerous substances levels, with values measured similar to those measured upstream of the effluent point. Most measured levels of these substances are well below the allowable limits set in the Water Quality (Dangerous Substances) Regulations, 2001 (SI No. 12/2001). Although the limits of detection for Cyanide and Lead are above the allowable limits set by the Regulations, it is not expected that the Regulation limits are exceeded for these substances. We note that the last five substances measured, namely Boron, Cadmium, Mercury, Selenium and Barium have no limits defined in S.I. No.12/2001. As measured levels of dangerous substances upstream of the primary discharge point are similar to those measured downstream of the discharge point, we can state that emissions of main polluting substances (as defined in the Dangerous Substances Regulations SI No. 12 of 2001) from the WwTW to the receiving water are unlikely to impair the environment.

The Lough Derg and Lough Ree Catchment Management Study (published in 2003) examined the quality of the waters of the upper Shannon River Basin, including the Silver River. The final report included recommendations regarding the need to improve the quality of wastewater treatment at various local authority sewage treatment plants in the catchment, including a number of plants in County Offaly. The report did not identify any specific improvments required at the Kilcormac plant and accordingly, the existing works and the improvement in the effluent quality envisaged in the proposed upgrading works are in full accordance with the plan.

We would also note that, as the works lie within the Shannon International River Basin District, the discharge from the WwTW will be subject to further scrutiny/approval under the Water Framework Directive.

Emissions from Kilcormac WwTW will not have a significant effect on any designated site, as identified on page 17 of the licence application form.

TABLE F.1(i)(a): SURFACE/GROUND WATER MONITORING
(Primary Discharge Point – one table per upstream and downstream location)

Discharge Point Code: ***SW1***

MONITORING POINT CODE: ***Silver River Upstream***

Parameter	Results (mg/l[Note 1])				Sampling method (grab, drift etc.)	Limit of Quantitation (µg)	Analysis method / technique
	Date 18/09/08	Date 08/10/08	Date 21/10/08	Date 12/11/08			
pH	7.97	7.76	7.86	7.9	Grab		
Temperature	12.2	10.8	9.4	7.8	Grab		
Electrical Conductivity (@25°C)	531	530	590	493	Grab		
Suspended Solids	2	2	2	2	Grab		
Ammonia (as N)	<0.02	<0.02	<0.02	<0.02	Grab		
Biochemical Oxygen Demand	1.9	1.8	1.9	0.6	Grab		
Chemical Oxygen Demand	15	39	38	30	Grab		
Dissolved Oxygen	9.40	9.48	9.38	9.90	Grab		
Hardness (as $CaCo_3$)	-	-	-	-	Grab		
Total Nitrogen (as N)	2.6	11.1	2.9	3.0	Grab		
Nitrite (as N)	<0.01	<0.01	<0.01	<0.01	Grab		
Nitrate (as N)	11.5	11.1	12.0	11.0	Grab		
Total Phosphorus (as P)	0.03	<0.02	<0.02	<0.02	Grab		
Orthophosphate (as P) - unfiltered	0.02	<0.02	<0.02	<0.02	Grab		
Sulphate (SO_4)	15	22	20	23	Grab		
Phenols (sum) [Note 2] (ug/l)	<0.5	<0.5	<0.1	<0.5	Grab		

Note 1: Or other unit as appropriate – please specify.
Note 2: USEPA Method 604, AWWA Standard Method 6240, or equivalent.

TABLE F.1(i)(b): SURFACE/GROUND WATER MONITORING (Dangerous Substances)
(Primary Discharge Point - one table per upstream and downstream location)

Discharge Point Code: ***SW1***

MONITORING POINT CODE: ***Silver River Upstream***

Parameter	Results (µg/l)				Sampling method (grab, drift etc.)	Limit of Quantitation	Analysis method / technique
	Date 18/09/08	Date 08/10/08	Date 21/10/08	Date 12/11/08			
Atrazine	<0.01	<0.01	<0.01	<0.01	Grab	0.01	GC-MS
Dichloromethane	<1	<1	<1	<1	Grab	1.0	GC-MS
Simazine	<0.01	<0.01	<0.01	<0.01	Grab	0.01	GC-MS
Toluene	<1	<1	<1	<1	Grab	1.0	GC-MS
Tributyltin	<0.05	<0.10	<0.10	<0.01	Grab	0.01	GC-MS
Xylenes	<1	<1	<1	<1	Grab	1.0	GC-MS
Arsenic	<20	<20	<20	<20	Grab	20	ICP/OES
Chromium	<10	<10	<10	<20	Grab	10	ICP/OES
Copper	<10	<10	<10	<10	Grab	10	ICP/OES
Cyanide	<50	<50	<50	<50	Grab	50	Colorimetry
Fluoride	60	<100	<100	60	Grab	50	ICP/OES
Lead	<30	<30	<30	<30	Grab	30	ICP/OES
Nickel	<10	<10	<10	<10	Grab	10	ICP/OES
Zinc	<10	<10	<10	<10	Grab	10	ICP/OES
Boron	30	<10	20	20	Grab	10	ICP/OES
Cadmium	<10	<10	<10	<10	Grab	10	ICP/OES
Mercury	<10	<10	<10	<10	Grab	10	ICP/OES
Selenium	<40	<40	<40	<40	Grab	40	ICP/OES
Barium	180	170	140	150	Grab	20	ICP/OES

TABLE F.1(i)(a): SURFACE/GROUND WATER MONITORING
(Primary Discharge Point – one table per upstream and downstream location)

Discharge Point Code: ***SW1***

MONITORING POINT CODE: ***Silver River Downstream***

Parameter	Results (mg/l[Note 1])				Sampling method (grab, drift etc.)	Limit of Quantitation	Analysis method / technique
	Date 18/09/08	Date 08/10/08	Date 21/10/08	Date 12/11/08			
pH	7.86	7.8	7.91	7.92	Grab		
Temperature	12.3	10.5	9.2	8.0	Grab		
Electrical Conductivity (@25°C)	538	538	590	495	Grab		
Suspended Solids	4	2	2	2	Grab		
Ammonia (as N)	<0.02	<0.02	<0.02	<0.02	Grab		
Biochemical Oxygen Demand	1.9	1.8	2.0	1.9	Grab		
Chemical Oxygen Demand	23	36	41	31	Grab		
Dissolved Oxygen	9.38	9.49	9.18	9.87	Grab		
Hardness (as $CaCo_3$)	-	-	-	-	Grab		
Total Nitrogen (as N)	2.8	2.9	3.1	3.1	Grab		
Nitrite (as N)	0.317	0.091	0.036	0.091	Grab		
Nitrate (as N)	0.097	11.6	12.9	12.0	Grab		
Total Phosphorus (as P)	<0.02	0.04	0.04	0.03	Grab		
Orthophosphate (as P) - unfiltered	<0.02	0.04	0.03	0.02	Grab		
Sulphate (SO_4)	21	24	24	22	Grab		
Phenols (sum) [Note 2] (ug/l)	<0.5	0.6	<0.1	<0.5	Grab		

Note 1: Or other unit as appropriate – please specify.
Note 2: USEPA Method 604, AWWA Standard Method 6240, or equivalent.

TABLE F.1(i)(b): SURFACE/GROUND WATER MONITORING (Dangerous Substances)
(Primary Discharge Point - one table per upstream and downstream location)

Discharge Point Code: ***SW1***

MONITORING POINT CODE: ***Silver River Downstream***

Parameter	Results (µg/l)				Sampling method (grab, drift etc.)	Limit of Quantitation	Analysis method / technique
	Date 18/09/08	Date 08/10/08	Date 21/10/08	Date 12/11/08			
Atrazine	<0.01	<0.01	<0.01	<0.01	Grab	0.01	GC-MS
Dichloromethane	<1	<1	<1	<1	Grab	1.0	GC-MS
Simazine	<0.01	<0.01	<0.01	<0.01	Grab	0.01	GC-MS
Toluene	<1	<1	<1	<1	Grab	1.0	GC-MS
Tributyltin	<0.05	<0.10	<0.10	<0.01	Grab	0.01	GC-MS
Xylenes	<1	<1	<1	<1	Grab	1.0	GC-MS
Arsenic	<20	<20	<20	<20	Grab	20	ICP/OES
Chromium	<10	<10	<10	<10	Grab	10	ICP/OES
Copper	<10	<10	<10	<10	Grab	10	ICP/OES
Cyanide	<50	<50	<50	<50	Grab	50	Colorimetry
Fluoride	60	<100	<100	60	Grab	50	ICP/OES
Lead	<30	<10	30	<30	Grab	30	ICP/OES
Nickel	<10	<10	<10	<10	Grab	10	ICP/OES
Zinc	<10	<10	<10	<10	Grab	10	ICP/OES
Boron	30	<10	20	20	Grab	10	ICP/OES
Cadmium	<10	<10	<10	<10	Grab	10	ICP/OES
Mercury	<10	<10	<10	<10	Grab	10	ICP/OES
Selenium	<40	<40	<40	<40	Grab	40	ICP/OES
Barium	150	180	130	140	Grab	20	ICP/OES

Attachment No. F.2

Drinking water abstraction point(s)

As far as is known, the nearest drinking water abstraction point downstream of Kilcormac WwTW is situated on the River Shannon at Portumna in County Galway. As this point is located a sufficient distance downstream of the plant, and with the very high levels of dilution available in the main channel of the River Shannon it can be concluded that any effluent from Kilcormac WwTW would not affect the quality of the drinking water abstracted from this point.

Attachment No. G.1

Compliance with Council Directives

Offaly County Council proposes to upgrade Kilcormac Wastewater Treatment Works from 2,000 to 2,500 design p.e. A preliminary report has been compiled to examine the works required for this proposed upgrade. Please refer to Attachment B.10 for a description of proposed upgrade works.

- Dangerous Substances Directive 2006/11/EC

This Directive of the European Parliament and the Council deals with pollution caused by certain dangerous substances into the aquatic environment of the community. Results of monitoring for dangerous substances in the final effluent are given in Attachment E.4. With reference to the Dangerous Substances Regulations, 2001 (SI No. 12/2001), we note that the concentrations of the substances in table one, are all below the specified limits. The concentrations of metals and other substances, listed in table 2 of SI 12/2001, are below the specified limits.

- Water Framework Directive 2000/60/EC

The EU Water Framework Directive aims at improving the water environment. It requires governments to take a new holistic approach to managing their waters and applies to rivers, lakes, groundwater, estuaries and coastal waters. Member States must aim to achieve good status in all waters by 2015 and must ensure that status does not deteriorate in any waters.

As discussed in Section F.1 attached, the Silver River is part of the Shannon International River Basin District (SIRBD) and is covered by the draft River Basin Management Plan for this area. It is proposed to increase the design capacity of Kilcormac WwTW to 2,500 p.e. to provide for sustainable development of the village. The wastewater treatment works would also be upgraded to ensure effluent concentration limits of 25mg/l for BOD and 35mg/l for Suspended solids and ferric dosing would be provided to effect chemical precipitation of phosphorus to achieve a 2mg/l effluent standard. The BOD and Suspended Solids proposed limits are in line with those limits sets by the Urban Wastewater Treatment Regulations, 2001.

- Birds Directive 79/409/EEC

This Directive provides a framework for the conservation and management of, and human interactions with, wild birds in Europe. The receiving water is not designated under any of the following:

  - Special Protection Area
  - Candidate Special Area of Conservation
  - Proposed/Current National Heritage Area
  - Special Area of Conservation

- Groundwater Directives 80/68/EEC & 2006/118/EC

Not Applicable

- Drinking Water Directives 80/778/EEC

Not Applicable

- Urban Waste Water Treatment Directive 91/271/EEC

The objective of this Directive is to protect the environment from the adverse effects of urban waste water discharges and discharges from certain industrial sectors and concerns the collection, treatment and discharge of domestic waste water, mixture of waste water and waste water from certain industrial sectors.

Kilcormac WwTW is designed to treat effluent in accordance with the Urban Wastewater Treatment Regulations 2001. The proposed upgrade of the works will also be designed to comply with this Directive.

- Habitats Directive 92/43/EEC

The main aim of the EC Habitats Directive is to promote the maintenance of biodiversity by requiring Member States to take measures to maintain or restore natural habitats and wild species at a favourable conservation status, introducing robust protection for those habitats and species of European importance. Kilcormac WwTW does not discharge to a Special Area of Conservation.

- Environmental Liabilities Directive 2004/35/EC

The Environmental Liability Directive is about preventing and remedying environmental damage. It aims to hold operators whose activities have caused environmental damage financially liable for remedying this damage, and it aims to hold those whose activities have caused an imminent threat of environmental damage liable for taking preventive actions. The environmental damage is in respect of protected species and natural habitats, water damage and land damage. There are no protected species or habitats along the Silver River.

- Bathing Water Directive 76/160/EEC

Not Applicable

- Shellfish Waters Directive (79/923/EEC).

Not Applicable

Attachment No. G.2

Compliance with Water Quality Standards for Phosphorus Regulations (S.I. No. 258 of 1998).

Upgrade of WwTW

As discussed in Section F, Offaly County Council propose to upgrade Kilcormac WwTW to serve a design population equivalent of 2,500. It is proposed to provide ferric dosing to effect chemical precipitation of phosphorus to achieve a 2mg/l effluent standard. This limit has been derived to provide for compliance with the phosphorus regulations by ensuring that the quantity of phosphorus discharged to the receiving waters will allow for maintenance of the higher quality standards (Q4 and Q5) under the regulations.

Attachment No. G.3

Impact Mitigation

Upgrade of WwTW

As discussed in Section B.10, it is proposed to upgrade the wastewater treatment works and increase the capacity of the works from 2,000 to 2,500 p.e. These works would involve modifications to the existing plant including inlet works, interstage pumping stations and final effluent clarifiers, to accommodate the increased load and to improve the standard of preliminary treatment provided. It is also proposed to provide ferric dosing to effect chemical precipitation of phosphorus to achieve the 2mg/l standard proposed.

Upgrade of Sewerage Network

Also discussed in Section B.10 is the proposal to upgrade the existing foul network by extending it to cater for all existing and proposed properties included in the development plan for the village. The works proposed include new sewerage works to facilitate the abandonment of the existing combined sewerage overflow at Broughal Road/Main Street. The pumping station at Bridge Street would also be upsized and a full mechanical and electrical refurbishment of the station completed as part of the proposed works.

All of the above proposed works would result in a more efficient sewerage system, thereby ensuring increased quality of effluent to the receiving waters and reducing environmental pollution of same.

Attachment No. G.4

Storm Water Overflows

It is proposed to construct new sewers on Main Street and Broughal Road to facilitate the abandonment of the existing overflow at the Main St./Broughal Road Junction (SW4).

At the WwTW, the new inlet works proposed will provide for the abandonment of the existing overflow to the Silver River (SW3).