



Integrated Pollution Prevention and Control (IPPC)/Waste Licensing

Review Form and Guidance Note

*For inspection purposes only.
Consent of copyright owner required for any other use.*

for the purposes of

EC Environmental Objectives (Surface Waters) Regulations
2009

EPA Reg. N^o: <i>(Office use only)</i>	<input type="text"/>
--	----------------------

Environmental Protection Agency
P.O. Box 3000, Johnstown Castle Estate, Co. Wexford
Lo Call: 1890 335599 Telephone: 053-9160600 Fax: 053-9160699

INTRODUCTION

This Form is for the purposes of a review of an IPPC/Waste Licence in order to ensure that all authorisations under the *EPA Act 1992 to 2007* and the *Waste Management Acts 1996 to 2010* having discharges liable to cause water pollution are in compliance with the *EC Environmental Objectives (Surface Waters) Regulations 2009*.

While every effort has been made to ensure the accuracy of the material contained in the Review Form, the EPA assumes no responsibility and gives no guarantees, undertakings and warranties concerning the accuracy, completeness or up-to-date nature of the information provided herein and does not accept any liability whatsoever arising from any errors or omissions.

The Review Form and all supporting information shall be submitted to the Headquarters of the Agency in a format of a signed original, one hardcopy and two copies on CD-Rom. In cases where an Environmental Impact Statement (EIS) is required in support of the Review Form, a signed original, one hardcopy plus 16 copies (or 18 copies if the activity is within Energy sector) on CD-Rom shall be submitted.

All pages, including maps/drawings/plans, shall be no larger than A3 size. All files on CD-Rom shall be submitted in searchable PDF format and be no larger than 10MB each in size. All CD-Roms shall be labelled with the Licensee's name, Licence Register Number, address of the activity and name of the file (i.e. Review Form).

For inspection purposes only.
Consent of copyright owner required for any other use.

CONTENTS

SECTION A: GENERAL.....	1
SECTION B: EMISSIONS	3
SECTION C: CONTROL & MONITORING	4
SECTION D: EXISTING ENVIRONMENT & IMPACT OF THE ACTIVITY	6
SECTION E: STATUTORY REQUIREMENTS	8
SECTION F: APPROVED ADJUSTMENTS & CONDITIONS	9
SECTION G: DECLARATION	10
ANNEX 1: TABLES/ATTACHMENTS	11

For inspection purposes only.
Consent of copyright owner required for any other use.

For inspection purposes only.
Consent of copyright owner required for any other use.

SECTION A: GENERAL

A.1 Licensee

Name*:	Basta Hardware Ltd.
Address:	Gallagher Road
	Tubbercurry
	Co. Sligo
Tel:	07191 85032
Fax:	0719186269
e-mail:	lab@bastaparsons.com

* This should be the name of the Licensee which is current on the date this IPPC/Waste Licence Review Form is lodged with the Agency. It should be the name of the legal entity (which can be a limited company or a sole trader). A trading/business name is not acceptable.

Name and Address for Correspondence

Only documentation submitted by the Licensee and by the nominated person will be deemed to have come from the Licensee.

Name:	James Loftus
Address:	Basta Hardware Ltd
	Gallagher road
	Tubbercurry
	Co. Sligo
Tel:	071 9185032
Fax:	0719186269
e-mail:	lab@bastaparsons.com

Address of registered or principal office of Body Corporate (if applicable)

Address:	As Above
Company Register No.	280319
Tel:	
Fax:	
e-mail:	

A.2 Location of Activity

Name:	Basta Hardware Ltd
Address*:	Gallagher road
	Tubbercurry
	Co. Sligo
Tel:	07191 85032
Fax:	07191 86269
Contact Name:	James Loftus
Position:	Plating Supervisor
e-mail:	jloftus@bastaparsons.com

* Include any townland.

National Grid Reference (12 digit 6E,6N)	N54 3.143 W8 44.155

Location maps (no larger than A3), appropriately scaled, with legible grid references should be enclosed in **Attachment N^o A.2**. The site boundary must be outlined on the map in red colour.

Geo-referenced digital drawing files (e.g. AutoCAD files) in Irish Grid projection of the site boundary and overall site plan, including labelled emission points to surface water and their monitoring and sampling locations, are also required.

For inspection purposes only.
Consent of copyright owner required for any reuse.

SECTION B: EMISSIONS

B.1 Emissions to Surface Waters &/or Ground

Describe the nature of emissions from the activity to receiving surface waters and/or ground. Specify which of these emissions are process discharges and storm/surface water discharges.

Tables B.1(i) and B.1(ii) should be completed.

The applicant should address in particular any emission point where the substances listed in the Schedule of S.I. No. 394 of 2004 are emitted.

Please note that monitoring of the discharge(s) for the purposes of Table B.1(ii) shall be undertaken for the list of parameters listed in Table D.1(i) as appropriate. Where other relevant substances have been identified, during the Assessment of Impact on Receiving Surface Water requested under Section D.1 of this Review Form, monitoring of the discharge upstream and downstream for the relevant parameters shall also be included.

A summary list of the emission points, together with maps/drawings (no larger than A3) and supporting documentation should be included as **Attachment N^o B.1**.

B.2 Tabular Data on Emission Points to surface water

Licensees should submit the following information for each emission point to surface water:

Point Code	Easting	Northing	Verified	Emission
Provide label ID's (e.g. SW1, SW2*)	6E-digit GPS Irish National Grid Reference	6N-digit GPS Irish National Grid Reference	Y = GPS used N = GPS not used	e.g. Ammonia (as N), Biochemical oxygen demand

See Appendix 1

* SW = Surface Water

An individual record (i.e. row) is required for each emission point. Acceptable file formats include Excel, Access or other upon agreement with the Agency.

SECTION C: CONTROL & MONITORING

Describe the proposed technology and other techniques for preventing or, where this is not possible, reducing emissions from the installation/facility.

C.1 Treatment, Abatement and Control Systems

An overview/summary of treatment/abatement systems for effluent emissions should be included together with schematics as appropriate.

For each Surface Water Emission Point identified complete Table C.1(i).

Supporting information should form **Attachment N^o C.1**.

Normal operation and variations for start-up and shutdown should be described. Anticipated malfunctions and known problems associated with the treatment should be highlighted.

Proposed monitoring to be undertaken for influent(s) to treatment plant, and in-treatment monitoring required for the management of the treatment plant should be detailed.

C.2 Monitoring and Sampling Points

Identify monitoring and sampling points and outline proposals for monitoring emissions to surface water bodies.

Table C.2(i) should be completed (where relevant) for emissions to surface water.

Where ambient environment monitoring is carried out or proposed, Table C.2(ii) should be completed as relevant for each environmental medium and at least 12 samples should be taken at regular intervals.

Include details of monitoring/sampling locations and methods.

Supporting information should form **Attachment N^o C.2**.

C.3 Tabular Data on Monitoring and Sampling Points

Licensees should submit the following information for each monitoring and sampling point:

Point Code	Point Type	Easting	Northing	Verified	Pollutant
SW-1 up stream	Sampling	E08.73626	N54.05182	GPS used	pH COD T. Heavy Metal Zinc Nickel Copper Total Chromium Hex Chromium Cadmium Conductivity Chloroform
SW-1 Down stream	Sampling	E08.735575	N54.05245	GPS used	pH COD T. Heavy Metal Zinc Nickel Copper Total Chromium Hex Chromium Cadmium Conductivity Chloroform

An individual record (i.e. row) is required for each monitoring and sampling point. Acceptable file formats include Excel, Access or other upon agreement with the Agency.

Point source monitoring/sampling refers to monitoring from specific emission points (e.g. from a wastewater treatment plant). Ambient monitoring includes monitoring of river quality upstream/downstream of an effluent discharge.

SECTION D: EXISTING ENVIRONMENT & IMPACT OF THE ACTIVITY

D.1 Assessment of Impact

Describe the existing environment in terms of water quality with particular reference to environmental quality objectives and standards as specified in the *EC Environmental Objectives (Surface Waters) Regulations 2009 S.I. No. 272 of 2009*. Table D.1(i) should be completed as appropriate.

Indicate whether or not the activity complies with the requirements of the *EC Environmental Objectives (Surface Waters) Regulations 2009 S.I. No. 272 of 2009* and the *EC Environmental Objectives (Groundwater) Regulations 2010 S.I. No. 9 of 2010*.

The Licensee should conduct an assessment of impact of discharge(s) from the installation/facility on receiving surface water and/or groundwater. In undertaking this assessment the Licensee shall have particular regard to substances used in the manufacturing processes likely to result in discharges. The licensee shall have regard for the environmental quality objectives and standards specified for protected areas and/or the standards specified in the Schedules of the *EC Environmental Objectives (Surface Waters) Regulations 2009 S.I. No. 272 of 2009*. When completing any assimilative capacity calculations have regard to the Water Services Training Group 'Guidance to Applicant – Discharge to Surface Waters' available at <http://www.wsntg.ie/publications/index.asp> and other standard guidance.

If the process discharges are to coastal, transitional waters or lakes, the assessment may require a modelling study. The modelling study shall include estimates on what the resultant concentrations of the permitted substances in the receiving water body will be upon discharge at the current licence limits.

Regardless of the receiving water body type, determine the maximum allowable discharge concentrations to achieve compliance with the 95%ile good status limits. N.B. If the discharge is to a water body that is already achieving high status, or if the discharge is to waters draining to the surface water bodies identified under the First Schedule of the *EC Environmental Objectives (Freshwater Pearl Mussel) Regulations 2009*, compliance must be with 95%ile **high** status limits.

State distance from the process discharges to a nearest downstream water dependent Protected Area. Include the name and code of this Protected Area.

Full details of the assessment, including a copy of an Environmental Impact Statement if it was required for the purposes of obtaining planning permission(s), should be submitted as **Attachment N^o D.1.1**.

Where necessary, the Licensee should supply detailed information on the proposals to comply with the requirements of the *EC Environmental Objectives (Surface Waters) Regulations 2009 S.I. No. 272 of 2009* including a detailed timeframe for any proposed works in **Attachment N^o D.1.2**.

Please See Appendix 2
Proposal for installation of additional shallow wells.

D.2 Environmental Considerations and Best Available Techniques (BAT)

Describe, in outline, the main alternatives, if any, to the proposals contained in the Review Form.

Describe any environmental considerations which were made with respect to the use of cleaner technologies, waste minimisation and raw material substitution.

Describe the measures proposed or in place to ensure that:

- (a) the best available techniques are or will be used to prevent or eliminate or, where that is not practicable, generally reduce an emission from the activity;
- (b) no significant pollution is caused;
- (c) waste production is avoided in accordance with *Council Directive 75/442/EEC of 15 July 1975 on waste*; where waste is produced, it is recovered or, where that is technically and economically impossible, it is disposed of while avoiding or reducing any impact on the environment;
- (d) energy and other resources are used efficiently;
- (e) the necessary measures are taken to prevent accidents and limit their consequences; and,
- (f) the necessary measures are taken upon definitive cessation of activities to avoid any pollution risk and return the site of operation to a satisfactory state.

This section should present a statement on energy efficiency at the site to include, where appropriate, an energy audit with reference to the *EPA Guidance document on Energy Audits*. Licensees should have regard to Section 5 of the *EPA Acts 1992 and 2003* in selecting BAT and in particular the following:

- The use of low-waste technology;
- The use of less hazardous substances;
- The furthering of recovery and recycling of substances generated and used in the process and of waste where appropriate;
- Comparable processes, facilities or methods of operation, which have been tried with success on an industrial scale;
- Technological advances and changes in scientific knowledge and understanding;
- The nature, effects and volume of the emissions concerned;
- The commissioning dates for new or existing facilities;
- The length of time needed to introduce the BAT;
- The consumption and nature of raw materials, including water, used in the process and their energy efficiency;
- The need to prevent or reduce to a minimum the overall impact of the emissions on the environment and the risks to it;
- The need to prevent accidents and to minimize the consequences for the Environment; and,
- The information published by the Agency in the form of sectoral BAT Guidance documents and the relevant BREF documents published by the EC (available for download at <http://eippcb.jrc.es/> and at www.epa.ie).

SECTION E: STATUTORY REQUIREMENTS

E.1 Best Environmental Practices – Compliance with Legislation

Demonstrate if the best environmental practices are in place for control of diffuse emissions from the installation/facility as set out in the following legislation:

- (a) a specification prepared by the Agency in accordance with Section 5 of the *Environmental Protection Agency Act 1992* as amended by Section 7 of the *Protection of the Environment Act 2003*;
- (b) the *Urban Waste Water Treatment Regulations 2001 (S.I. No. 254 of 2001)* as amended by the *Urban Waste Water Treatment (Amendment) Regulations 2004 (S.I. No. 440 of 2004)* or any future amendment thereof;
- (c) the *European Communities (Good Agricultural Practice for Protection of Waters) Regulations 2009 (S.I. No. 101 of 2009)* or any future amendment thereof;
- (d) the *Local Government (Water Pollution) Act, 1977 (Control of Cadmium Discharges) Regulations 1985 (S.I. No. 294 of 1985)*;
- (e) the *Local Government (Water Pollution) Act, 1977 (Control of Hexachlorocyclohexane and Mercury Discharges) Regulations 1986 (S.I. No. 55 of 1986)*;
- (f) the *Local Government (Water Pollution) Acts, 1977 and 1990 (Control of Carbon Tetrachloride, DDT and Pentachlorophenol Discharges) Regulations 1994 (S.I. No. 43 of 1994)*; and
- (g) measures or controls identified in a pollution reduction plan for the river basin district prepared in accordance with Part V of the *EC Environmental Objectives (Surface Waters) Regulations 2009 S.I. No. 272 of 2009* for the reduction of pollution by priority substances or the ceasing or phasing out of emissions, discharges and losses of priority hazardous substances.

SECTION F: APPROVED ADJUSTMENTS & CONDITIONS

Where the Office of Environmental Enforcement (OEE) of the Agency has agreed any variations or adjustments to the conditions of the existing licence, the licensee must supply a schedule detailing these agreed variations and adjustments to the existing licence conditions. An updated, scaled drawing of the site layout (no larger than A3) providing visual information on such adjustments or variations where appropriate should be included.

In the case of once-off assessments/ reports required under conditions of the existing licence the licensee must supply a schedule detailing those assessments/ reports that have been completed and agreed with the Office of Environmental Enforcement (OEE) or as otherwise agreed.

Attachment N^o F1 shall include the schedule of variations and/or adjustments together with the updated drawing.

Condition No.	Existing Condition	Proposed Wording (where appropriate)	OEE Agreement Reference	Description
10.5	Emission pt. SW-1		P0269-01(09)AP16HB.doc	Revised schedule for testing SW-1

For inspection purposes only.
Consent of copyright owner required for any other use.

SECTION G: DECLARATION

Declaration

I certify that the information given in this Review Form is truthful, accurate and complete.

I give consent to the EPA to copy this Review Form for its own use and to make it available for inspection and copying by the public, both in the form of paper files available for inspection at EPA and via the EPA's website. This consent relates to this Review Form itself and to any further information, submission, objection, or submission to an objection whether provided by me as Licensee, any person acting on the Licensee's behalf, or any other person.

Signed by: J. Loftus

Date: 29 March 2012

(on behalf of the organisation)

Print signature name: James Loftus

Position in organisation: Metal Finishing
Supervisor

*For inspection purposes only.
Consent of copyright owner required for any other use.*

Company stamp or seal:

ANNEX 1: TABLES/ATTACHMENTS

*For inspection purposes only.
Consent of copyright owner required for any other use.*

For inspection purposes only.
Consent of copyright owner required for any other use.

Section B:

Describe the nature of emissions from the activity to the receiving surface /ground water.

The nature of the emissions from Basta is from our plating process (electro plating) and powder coating process which takes place onsite.

We process zinc castings using large polishing machines and finish plate them with copper, nickel, chrome.

Our emissions generally come from the plating process, which we monitor closely and keep a regular check on.

Basta waste water treatment plant (WWTP) processes and treats waste (nickel, chrome, zinc and cyanide), from the plating plant which lowers the pollutants to acceptable levels. This waste water treatment plant reduces the levels and keeps the levels within our license limits as set out by our IPPC license.

TABLE B.1(i): EMISSIONS TO SURFACE WATERS

(One page for each emission)

Emission Point:

Emission Point Ref. No.:	SW1		
Source of Emission:	Process Effluent		
Location :	Located on the southern part of the site		
Grid Ref. (12 digit, 6E,6N):	E08.73610	N54.05218	
Name of receiving waters:	Stream 2		
Flow rate in receiving waters:	0.0215 _____ m ³ .sec ⁻¹ Dry Weather Flow _____ m ³ .sec ⁻¹ 95%ile flow		

Consent of copyright owner required for any other use.
For inspection purposes only.

Emission Details:

(i) Volume to be emitted			
Normal/day	60m ³	Maximum/day	200m ³
Maximum rate/hour	12m ³		

(ii) Period or periods during which emissions are made, or are to be made, including daily or seasonal variations (*start-up /shutdown to be included*):

Periods of Emission (avg)

40 min/hr 5 hr/day 234 day/yr

*For inspection purposes only.
Consent of copyright owner required for any other use.*

TABLE B.1(ii): EMISSIONS TO SURFACE WATERS - Characteristics of the emission (One table per emission point)

Emission Point Reference Number: SW-1

Parameter	Prior to treatment				As discharged				% Efficiency
	Max. hourly average (mg/l)	Max. daily average (mg/l)	kg/day	kg/year	Max. hourly average (mg/l)	Max. daily average (mg/l)	kg/day	kg/year	
<u>COD</u>					<u>4.9</u>	<u>24.7</u>	<u>1.4</u>	<u>346.8</u>	
<u>Suspended Solids</u>					<u>0.6</u>	<u>3.0</u>	<u>0.18</u>	<u>42.1</u>	
<u>Ammonia</u>					<u>0.130</u>	<u>0.7</u>	<u>0.039</u>	<u>9.13</u>	
<u>Temperature</u>					---	----	----	----	
<u>BOD</u>					<u>2.10</u>	<u>10.5</u>	<u>0.63</u>	<u>147.42</u>	
<u>Total Phosphorous</u>					<u>0.009</u>	<u>0.045</u>	<u>0.0027</u>	<u>0.631</u>	
<u>Phenols</u>					<u>0.0039</u>	<u>0.0195</u>	<u>0.0012</u>	<u>0.273</u>	
<u>Cyanide</u>					<u>0.0043</u>	<u>0.0218</u>	<u>0.0013</u>	<u>0.306</u>	
<u>Total Heavy Metals</u>					<u>0.1243</u>	<u>0.6219</u>	<u>0.373</u>	<u>8.73</u>	
<u>Zinc</u>					<u>0.0472</u>	<u>0.2364</u>	<u>0.0142</u>	<u>3.318</u>	
<u>Nickel</u>					<u>0.0451</u>	<u>0.2259</u>	<u>0.0136</u>	<u>3.171</u>	
<u>Copper</u>					<u>0.0239</u>	<u>0.1196</u>	<u>0.0072</u>	<u>1.679</u>	
<u>Chromium</u>					<u>0.0137</u>	<u>0.0687</u>	<u>0.0041</u>	<u>0.964</u>	
<u>Hex. Chromium</u>					<u>0.0073</u>	<u>0.0368</u>	<u>0.0022</u>	<u>0.517</u>	
<u>Cadmium</u>					<u>0.00157</u>	<u>0.0079</u>	<u>0.0005</u>	<u>0.110</u>	
<u>Total Chloride</u>					----	----	---	---	
<u>Free Chloride</u>					-----	-----	---	---	
<u>Organic Solvents (VOC)</u>					-----	-----	---	---	

For inspection purposes only
Consent of copyright owner required for any other use

Oil Fats Greases					0.4	2	0.120	28.08	
Toxicity					----	----	----	----	

NOTE:
KG/YR IS CALCULATED WITH 234 WORKING DAYS PER YEAR

*For inspection purposes only.
 Consent of copyright owner required for any other use.*

2.0 Non-Technical Description of the Plant Control Philosophy

The main design criteria for the design of this plant was to “ reduce to acceptable levels the concentrations of metals named in the discharge consent, which applies to the factory”. The plant is designed to treat 12m³ per hour.

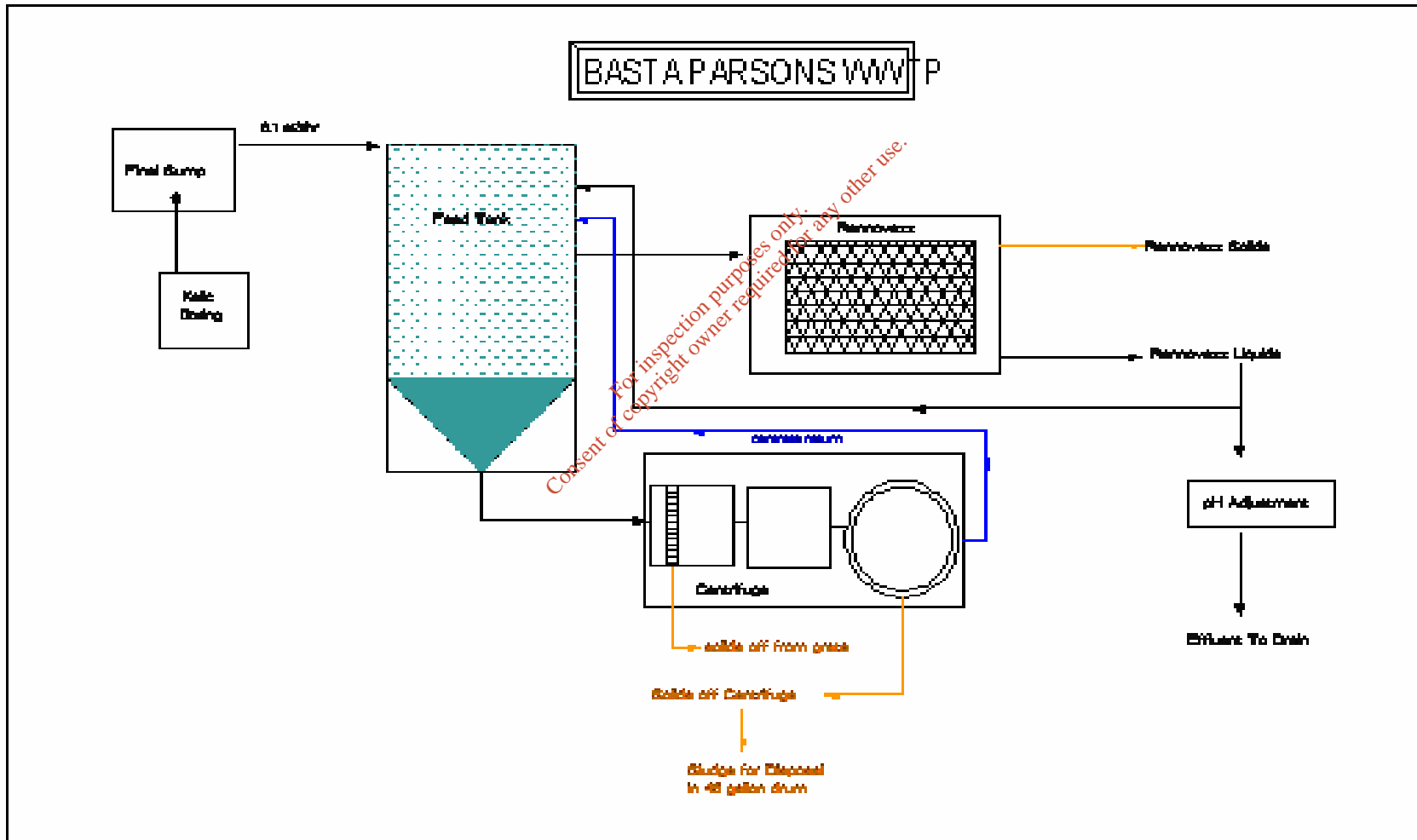
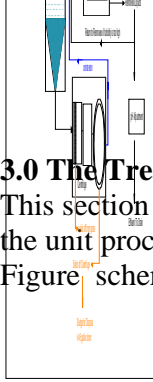
All of the incoming effluent is conveyed through a series of conveyances to a central effluent sump where it is pumped via 2 float controlled submersible pumps to a cylindrical feed tank with a conical base. There is a pH correction stage at effluent sump stage where “Kalic” (liquid Lime) is dosed to effect a pH increase to pH 10. The efficacy of the pH dosing is measured by a pH probe at the inlet to the tank and measured on a chart recorder. The reason for the pH correction is to drop out the metal compounds within the process stream. The solids float to the bottom of the tank and are fed to a centrifuge for a more concentrated solid removal stage. The liquid is then taken from the middle of the effluent tank and pumped through the Renovexx microfiltration unit. On passing through the unit the effluent will be sent forward for pH correction and discharge to the stream. On the sludge handling side the sludge from the bottom of the effluent feed tank is pumped into a 2 chamber centrifuge feed tank. The gross solids are strained out of the effluent stream and the remainder is forwarded to the unit for centrifugation. The solid material after this phase is dropped to a containment vessel and taken away for disposal by a registered contractor. The liquid from this process is returned to the effluent sump and fed back through the plant.

*For inspection purposes only.
Consent of copyright owner required for any other use.*

3.0 The Treatment Plant

This section will address the waste water treatment plant and describe the unit processes in the plant and also describe the design capacity of each of the unit processes.

Figure schematic of the main unit process in the WWTP



The main unit processes in the WWTP at Basta Parsons Ltd. are:

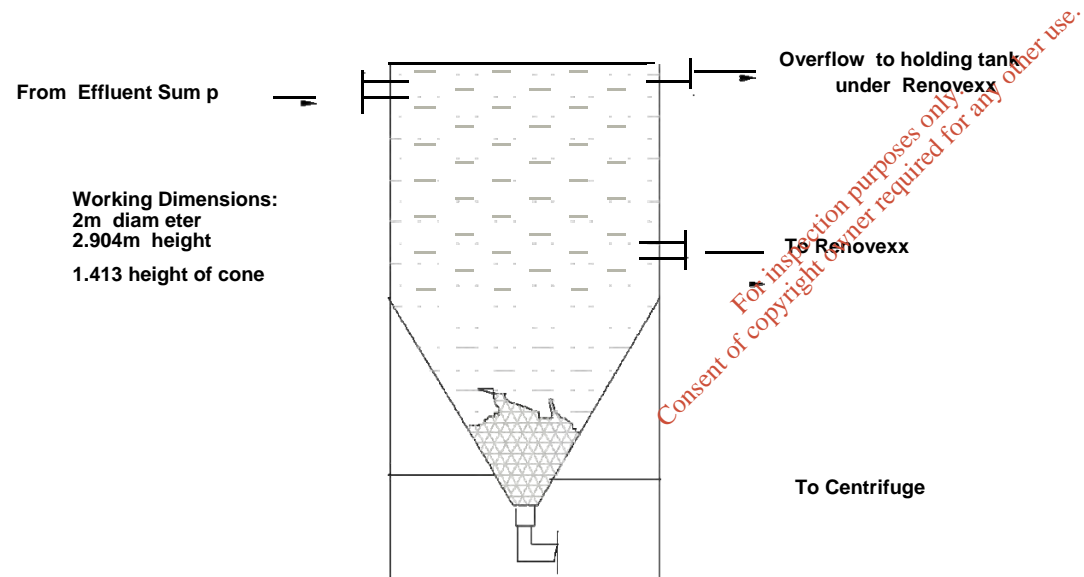
1. Effluent Sump

This is a small pump sump which forms the entry point for all wastewater to the plant. It is located in the underground section of the wastewater treatment plant the over flow from the rinse water and drip wastewater from the centrifuge on a daily basis. The sump dimensions are: $0.905\text{m} \times 1.2\text{m} \times 0.61 = 0.662 \text{ m}^3$ Effluent Sump Capacity

2. Feed Tank

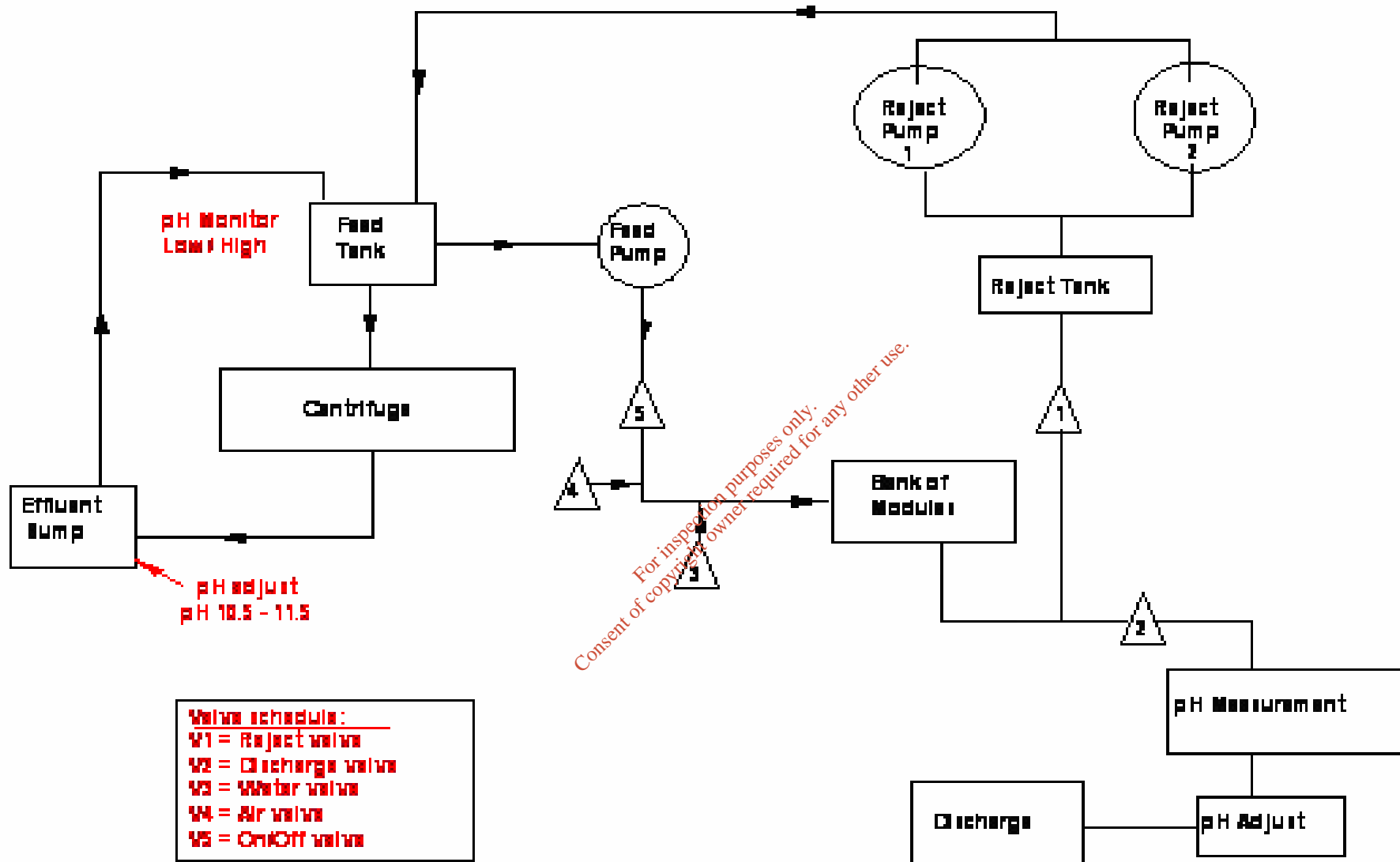
From the effluent sump the wastewater is pumped to the feed tank. This tank is a cylinder with a conical bottom to allow separation of metals for removal to a further treatment process. The tank has a capacity of 6.5m^3 .

Fig.4.0 shows the dimensions of the feed tank



3: Rennovexx

Effluent from the feed tank is pumped through the Rennovexx plant. The plant design specification is to treat a maximum flow of $12 \text{ m}^3/\text{hour}$ of effluent. There are 8 no. 3.0m long simplex filtration modules. The filter modules are arranged in two banks, offering duty and standby operation. The plant is not designed for both banks to run simultaneously, or for only two modules to operate in one bank. The working pressure of the system is 2.0 bar.



P&ID of the Renovexx Plant

4. Centrifuge

This stage of the plant involves the abstraction of the settled solid sludge from the bottom of the feed tank. The sludge is passed through a gross filter in the first reception tank and then diverted to the centrifuge feed tank where it is continually stirred. For the purposes of the study based on the information received the capacity of the centrifuge has been calculated as 1.5 m³/hr.

5. Ph correction tank

Effluent from the cloths is pumped into this tank where it is pH adjusted using a hydrochloric acid dosing pump controlled via a pH meter which brings the effluent back between pH 6-9. The effluent is then conveyed off-site to stream.

There are a number of ancillary tanks for the storage of maintenance liquids and surplus effluent that hasn't been sufficiently treated for discharge. These tanks do not form part of the core philosophy of the plant design and are not integral to this assay.

*For inspection purposes only.
Consent of copyright owner required for any other use.*

TABLE C.1(i): ABATEMENT/TREATMENT CONTROL

Emission Point Reference Number: SW-1

Control ¹ parameter	Equipment ²	Equipment maintenance	Equipment calibration	Equipment back-up	Monitoring to be carried out ³	Monitoring equipment	Monitoring equipment calibration
pH Discharge Flow Low/High levels	Micro Filtration system control	Daily maintenance check	Weekly	None	pH Discharge Low/High levels	MJK scada system	None

¹ List the operating parameters of the treatment/abatement system which control its function.

² List the equipment necessary for the proper function of the abatement/treatment system.

³ List the monitoring of the control parameter to be carried out.

Consent of the Inspector for inspection purposes only. Owner required for any other use.

TABLE C.2(i): EMISSIONS MONITORING AND SAMPLING POINTS

(One table per monitoring point)

Emission Point Reference Number: SW-1

Parameter	Monitoring frequency	Accessibility of Sampling Points	Sampling method	Analysis method/ technique
Flow	Continuous	Ok		Flow meter with recorder
COD	Daily	Ok	Composite sampler	Standard method
Suspended Solids	Bi-Annually	Ok	Composite sampler	Gravimetric
Ammonia (as N)	Bi-Annually	Ok	Composite sampler	Standard Method
Temperature	Weekly	Ok	Composite sampler	Thermometer
pH	Weekly	ok	Composite sampler	pH meter
BOD	Bi-Annually	Ok	Composite sampler	Standard Method
Total Phosphorus (as P)	Bi-Annually	Ok	Composite sampler	Standard Method
Phenols	Bi-Annually	Ok	Composite sampler	Standard method
Cyanide	Daily	Ok	Composite sampler	Hach Method
Total Heavy Metals	Weekly	Ok	Composite sampler	Hach Method
Zinc	Weekly	Ok	Composite sampler	Hach Method
Nickel	Weekly	Ok	Composite sampler	Hach Method
Copper	Weekly	Ok	Composite sampler	Hach Method
Total Chromium	Weekly	Ok	Composite sampler	Hach Method
Hex. Chromium	Weekly	Ok	Composite sampler	Hach Method
Cadmium	Bi-Annually	Ok	Composite sampler	Atomic Absorption/ICP
Total Chlorine	Daily	Ok	Composite sampler	Hach Method
Free Chlorine	Daily	Ok	Composite sampler	Hach Method
Organic Solvents(VOC)	Bi-Annually	Ok	Composite sampler	Gas Chromatography
Oil Fats Greases	Bi-Annually	Ok	Composite sampler	Standard Method
Toxicity	Annually	Ok	Composite sampler	Dophnia magna/Vibrio fischeri

Content of copyright owner required for any other use. For inspection purposes only.

TABLE C.2(ii): AMBIENT ENVIRONMENT MONITORING AND SAMPLING POINTS

(One table per monitoring point)

Monitoring Point Reference Number: SD-1

Parameter	Monitoring frequency	Accessibility of Sampling point	Sampling method	Analysis method/ technique
pH	Quarterly	Easy Access	Grab Sample	pH meter
COD	Quarterly	Easy Access	Grab Sample	Standard Method
Total Heavy Metals	Quarterly	Easy Access	Grab Sample	Standard Method
Zinc	Quarterly	Easy Access	Grab Sample	Hach Method
Nickel	Quarterly	Easy Access	Grab Sample	Hach Method
Copper	Quarterly	Easy Access	Grab Sample	Hach Method
Total Chromium	Quarterly	Easy Access	Grab Sample	Hach Method
Hex Chromium	Quarterly	Easy Access	Grab Sample	Hach Method
Cadmium	Quarterly	Easy Access	Grab Sample	Hach Method
Conductivity	Quarterly	Easy Access	Grab Sample	Conductivity Meter
Chloroform	Quarterly	Easy Access	Grab Sample	VOC scan

For inspection purposes only. Consent of copyright owner required for any other use.

Table D.1(i) RECEIVING WATER SURFACE WATER QUALITY

Monitoring Point/Grid Reference: __SW-2302 (Down stream from SW-1)_____

Parameter	Results ¹ (mg/l)												Sampling method (grab, drift etc.)	Normal Analytical Range SI 272 of 2009	Analysis method/ technique
	Aug 2011	May 2011	Mar 2011	Nov 2010	Oct 2010	May 2010	Feb 2010	Dec 2009	Aug 2009	July 2009	Mar 2009				
pH	7.51	7.75	7.04	7.25	7.66	7.63	8.31	8.19	7.39	8.02	8.50		grab	4.5-9	pH meter
Electrical conductivity EC	560	444	240	517	673	470	507	525	516	158	140		grab	/	Conductivity meter
COD	12	7	10	16	11	14	67	22	42	40	24		grab	/	Std method
Chloride	26.7	44.2	25.6	/	/	/	/	0.0002	0.001	0.001	0.001		grab	/	Atomic Abs/ICP
Total Cyanide	<0.01	0.01	0.01	0.0005	/			0.005	0.05	0.05	0.05		grab	0.01	Atomic Abs/ICP
Total Ammonia	0.04	0.44	0.06	0.2	/	0.9							grab	0.065	Atomic Abs/ICP
Dissolved Cadmium	0.005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.0002	0.0004		grab	0.0015	Atomic Abs/ICP
Diss. Chromium	0.0015	0.007	0.0015	0.0015	0.0137	0.1179	0.023	0.013	0.009	0.17	0.01			0.032	
Dissolved Copper	0.007	0.007	0.007	0.009	0.007	0.032	0.039	0.009	0.003	0.036	0.028		grab	0.03	Atomic Abs/ICP
Dissolved nickel	0.012	0.033	0.023	0.008	0.017	0.068	0.409	0.005	0.008	0.212	0.140		grab	0.02	Atomic Abs/ICP
Dissolved Zinc	0.006	0.063	0.051	0.018	0.004	0.071	0.019	0.020	0.026	0.010	0.270		grab	0.1	Atomic Abs/ICP
Hex. Chromium	<0.03	0.03	0.03	0.03	<0.03	0.03	/	0.03	0.03	0.150	0.09		grab	0.032	Atomic Abs/ICP
Total Chromium	0.0015	0.008	0.0025	0.0015	0.0217	0.145	/	/	/	/	/		grab	0.032	Atomic Abs/ICP
Total metal Analys	0.045	0.104	0.0765	0.035	0.264	0.351	/	/	/	/	/		grab	/	Std method
Chloroform	0.011	0.035	0.038	0.002	0.029	0.065	0.066	0.024	0.011	0.055	0.088		grab	/	VOC scan

¹ At least 12 samples should be taken at regular intervals.

Results submitted are supplied from White Young Green consultants from Ground water reports.

Provide summary of the monitoring result

Table D.1 (ii) RECEIVING WATER SURFACE WATER QUALITY

Monitoring Point/Grid Reference: __SW-2301 (Up-stream from SW-1)_____

Parameter	Results ¹ (mg/l)												Sampling method (grab, drift etc.)	Normal Analytical Range SI 272 of 2009	Analysis method/ technique
	Aug 2011	May 2011	Mar 2011	Nov 2010	Oct 2010	May 2010	Feb 2010	Dec 2009	Aug 2009	July 2009	Mar 2009				
pH	7.37	7.91	7.29	7.17	7.41	7.79	8.59	8.28	7.38	8.05	8.68		grab	4.5-9	pH meter
Electrical conductivity EC	494	506	277	401	716	371	490	510	550	434	400		grab	/	Conductivity meter
COD	9	9	8	14	16	7	8	16	42	/	95		grab	/	Std method
Chloride	23.4	30.8	26.2	/	/	/	/	0.001	0.001	0.001	0.001		grab	/	Atomic Abs/ICP
Total Cyanide	<0.01	0.01	0.01	0.0005	/	<0.04	/	<0.05	0.05	<0.05	/		grab	0.01	Atomic Abs/ICP
Total Ammonia	0.05	0.07	0.04	0.2	/	<0.2	/	<0.2	0.39	/	0.5		grab	0.065	Atomic Abs/ICP
Dissolved Cadmium	0.005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.0002	<0.0002	0.0005		grab	0.005	Atomic Abs/ICP
Diss. Chromium	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.001	0.019	0.010	0.006	/			0.032	
Dissolved Copper	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.002	0.004	0.009	0.08		grab	0.03	Atomic Abs/ICP
Dissolved nickel	0.002	0.02	0.002	0.002	0.003	0.584	0.002	0.003	0.005	0.009	0.120		grab	0.02	Atomic Abs/ICP
Dissolved Zinc	0.006	0.074	0.06	0.007	0.006	0.004	0.006	0.016	0.015	0.046	0.120		grab	0.1	Atomic Abs/ICP
Hex. Chromium	<0.03	0.03	0.03	0.03	<0.03	<0.03	/	<0.03	<0.03	<0.03	0.008		grab	0.032	Atomic Abs/ICP
Total Chromium	0.0015	0.0015	0.0157	0.0015	0.0015	0.015	/	/	/	/	/		grab	0.032	Atomic Abs/ICP
Total metal Analys	0.045	0.076	0.077	0.014	0.09	0.654	/	/	/	/	/		grab	/	Std method
Chloroform	0.037	0.024	0.03	0.002	0.015	0.057	0.033	0.013	0.089	0.030	0.041		grab	/	VOC scan

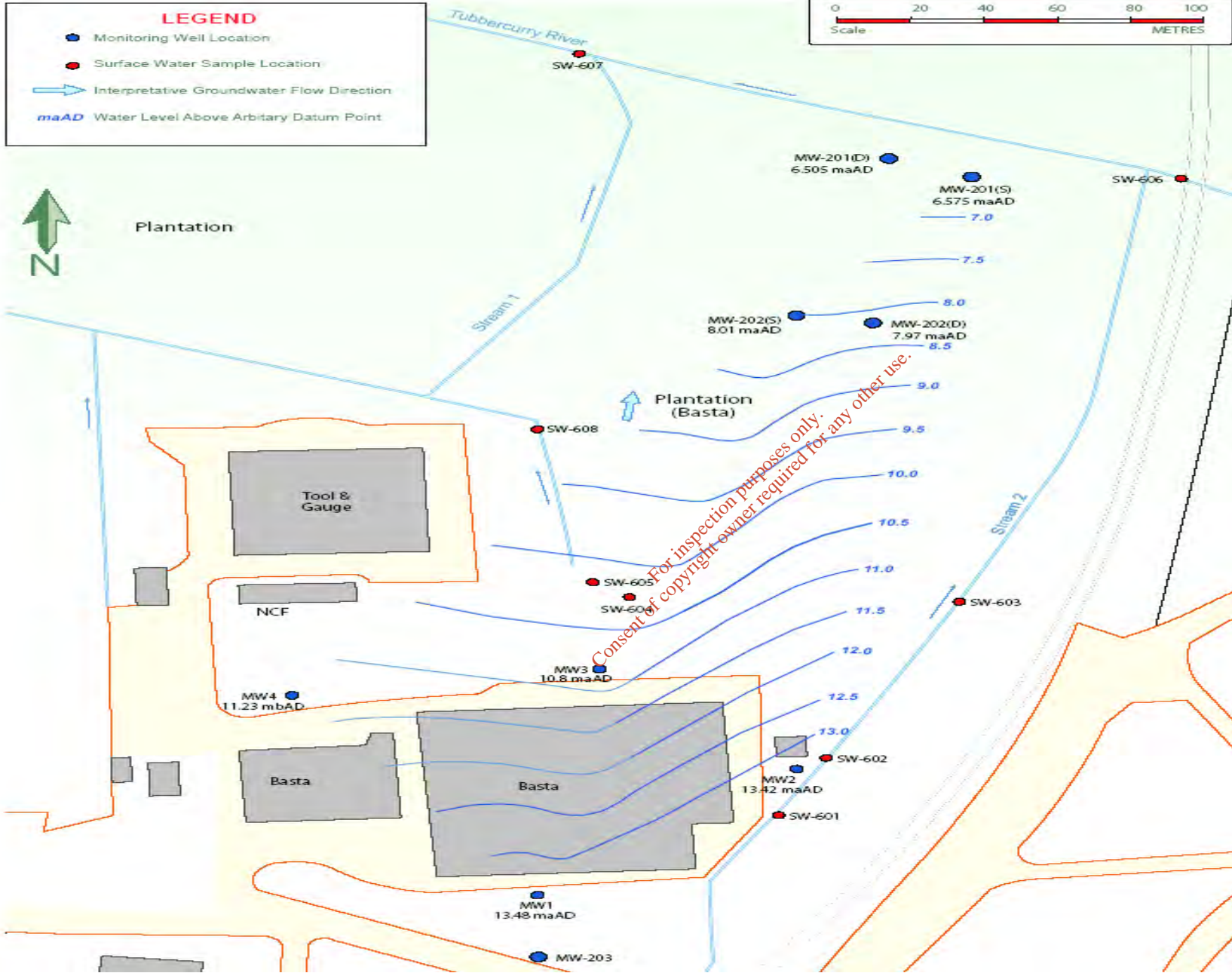
¹ At least 12 samples should be taken at regular intervals.

Results submitted are supplied from White Young Green consultants from Ground water reports.

Provide summary of the monitoring results

LEGEND

- Monitoring Well Location
- Surface Water Sample Location
- Interpretative Groundwater Flow Direction
- maAD Water Level Above Arbitrary Datum Point



For inspection purposes only.
 Consent of copyright owner required for any other use.

Summary,

For Table D1 (i)(ii)

The 2 tables shown for D1 gives result of tests carried out by White Young Green for the past 3 years.

These results are from a "stream 2" (See map)

Up stream from SW1 is at point SW601

Down stream of SW1 is point SW602 as shown on the map included.

We are approximately 450 metres from the Tubbercurry river.

We have tested the main receptor (The Tubbercurry River.) in the past and submitted the results (see appendix II)

We are currently in the process of sinking 2 new ground water wells, to confirm there is no contamination going off site.

The location for the wells has been agreed with the EPA.

Our overall goal is to eliminate the necessity for the current MNA program.

We are not having an impact on the local environment.

For inspection purposes only.
Consent of copyright owner required for any other use.

Appendix II



Microlabs Food & Water Laboratory

Microlabs Ltd. • Drumillard Little • Monaghan Road • Castleblayney • Co. Monaghan • Ireland
 Tel. 042 9746653 • Fax. 042 9746675 • Email: microlab@iol.ie
 Campden & Chorleywood - CLAS accredited Laboratory

**MR. FERGAL COYLE,
 F. J. COYLE & ASSOCIATES
 3 CHURCH SQ
 MONAGHAN.**

WATER ANALYSIS REPORT 07/10/2004

Sample: Water
 Ref: Basta Hardware Ltd

Time:
 Date Of Sampling: 30/09/2004
 Received Date: 30/09/2004

PARAMETER	UNIT	UPSTREAM	DOWNSTREAM
Ph	ph unit	6.8	6.9
Bod	mg/l	2	2
Cod	mg/l	18	16
Suspended Solids	mg/l	8	12
Ammonia - N	mg/l	0.20	0.20
Total Phosphorous	mg/l	0.17	0.15
Total Chlorine	mg/l	<0.01	<0.01
Free Chlorine	mg/l	<0.01	<0.01
Zinc	mg/l	0.04	0.03
Nickel	mg/l	<0.1	<0.1
Copper	mg/l	0.07	0.06
Chromium (Hexavalent)	mg/l	<0.01	<0.01
Chromium (Total)	mg/l	<0.01	<0.01
Cadmium	ug/l	<5	<5
Phenols	mg/l	<0.01	<0.01
Cyanide	ug/l	<5	<5

For inspection purposes only. Consent of copyright owner required for any other use.