

15 February 2017

Ms. Ewa Babiarczyk, Inspector  
Environmental Licensing Programme,  
Office of Environmental Sustainability,  
Environmental Protection Agency,  
PO Box 3000,  
Johnstown Castle Estate,  
Co. Wexford.

ORIGINAL

Our Ref : 501.00180.00152  
Your Ref : W0277-02



Dear Ms Babiarczyk

**Re: Increased Waste Intake to Huntstown Inert Soil Waste Recovery Facility  
North Road, Finglas, Dublin 11 (Waste Licence Ref. No. W0277-02)  
Response to Article 12 Compliance Notice dated 20 January 2017**

This submission is made in response to an Article 12 Compliance Notice dated 20 January 2017 issued by the Environmental Licensing section of the EPA Office of Sustainability in respect of the waste licence review application by Roadstone Ltd. (Ref. W0277-02) to increase intake at its existing soil waste recovery facility at Huntstown Quarry from 750,000 tonnes to 1,500,000 tonnes per annum. This response, prepared by SLR Consulting Ireland, addresses the issues raised in the order presented in the letter of 20 January last.

## RESPONSE TO ARTICLE 12 COMPLIANCE NOTICE

### 1. SURFACE WATER MONITORING DATA

**Schedule C1.2 of the licence Reg. No. W0277-01 requires weekly monitoring of temperature, pH, BOD, suspended solids, ammonia and orthophosphate in the discharge W4. Please provide all available monitoring results at W4.**

The discharges monitored at surface water monitoring location W4 are solely generated by activities within the North Quarry which, at the present time, predominantly comprise inert soil waste recovery activity. Monitoring at location W4 commenced in April 2016, some months following establishment of soil waste recovery activities at the North Quarry. Monitoring at W4 is the *de facto* control point for treated discharges arising at the licensed waste facility.

Prior to April 2016, the facility operator had sampled at surface water monitoring location W1, immediately upstream of the discharge from the quarry complex to the Ballystrahan Stream. However, it should be recognised that apart from discharge from the recovery facility at the North Quarry, the discharge at W1 also includes discharge from the adjoining (non-licensed) concrete production facilities.

Surface water monitoring at W1 identifies the quality of cumulative (treated) discharges arising from a range of activities at Huntstown Quarry, not all of which are licensed by the EPA. The quality of discharge from location W1 (also identified as V-notch North) is controlled by way of a discharge licence from Fingal County Council (Ref. WPW/F/008-01).



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The results of weekly surface water monitoring (of combined discharges) undertaken at W1 between January and March 2016 are presented in Attachment A, together with the results of surface water monitoring undertaken at W4 between April and December 2016.

Note that no monitoring data is provided for W4 for certain weeks in the course of last summer (2016). This is on account of there being no flow past this location on the date of the survey (as no ponded water was being pumped from the quarry floor up to settlement ponds / treatment infrastructure at a higher level).

Notwithstanding the fact that discharges at W1 also include discharge from other (non-licensed) activities at Huntstown, they have been screened on the laboratory test sheets provided in Attachment A against the emission limits set by the current waste licence (W0277-01) rather than those set by the discharge licence from Fingal County Council.

## 2. GROUNDWATER MONITORING WELL GW04

***It is apparent from GIS plotting that GW04 will be outside of the proposed revised facility boundary. Please clarify. If outside, please state the arrangements to access the monitoring point for sampling.***

Further to your request above, we have reviewed the location of groundwater well GW04 and the grid co-ordinates advised in Attachment F5 of the waste licence review application.

On checking the grid co-ordinates on an ortho-rectified ITM grid-referenced aerial photograph obtained from a site (drone) survey, we find that the co-ordinates advised for GW04 in Attachment F5 (ie. 710395E and 741947N) are correct and lie within the application site boundary, as indicated on a screen grab provided in Attachment B.

We have also enclosed a photograph in Attachment B which clearly shows that monitoring well GW04 is located immediately inside the Roadstone boundary, at a location consistent with that indicated on the aerial photograph / screen grab.

In light of the information provided, it should hopefully be clear that there is no requirement for specific arrangements to be put in place to facilitate groundwater monitoring at well GW04.

---

### Close

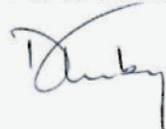
We consider that our response to the Article 12 Compliance Notice is not of such significance as to require revision of any information previously presented in the non-technical summary submitted in the EIS and/or the waste licence review application.

As requested, two copies of this submission are provided in hard copy format (an original plus one copy), together with 2 No. electronic copies in searchable PDF format on CD-ROM.

We trust that we have adequately addressed the issues raised in your Article 12 Compliance Notice dated 20 January last. Should you wish to discuss any of the points raised in this response in more detail, please contact the undersigned.

Yours sincerely,

**For SLR Consulting (Ireland)**



Derek Luby  
Technical Director

cc. Shane Geraghty Roadstone Ltd.

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**ATTACHMENT A**  
**SURFACE WATER MONITORING DATA (W4)**

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**Huntstown Discharge Summary**  
**W4 Surface Water Discharge**

MAC Values	0.5	5	6.0-9.0	1	15	25
Date	Ammoniacal Nitrogen	BOD	pH	Orthophosphate as P	Suspended Solids	Temperature °C
08/01/2016	<0.08	<2	8.00	<0.33	10	18
13/01/2016	<0.08	<2	8	<0.33	11	5
21/01/2016	<0.08	<2	7.7	<0.33	5	8
28/01/2016	<0.08	<2	7.70	<0.33	21	8
04/02/2016	<0.08	<2	7.90	<0.33	14	10
11/02/2016	<0.08	<2	7.70	<0.33	37	10
26/02/2016	<0.08	<2	7.9	<0.33	15	8
03/03/2016	<0.08	<2	7.90	<0.33	17	9
10/03/2016	<0.08	<2	8	<0.33	39	10
18/03/2016	<0.08	<2	8	<0.33	19	7
31/03/2016	<0.08	<2	7.9	<0.33	4	8
24/03/2016	<0.08	<2	N/A	<0.33	7.8	7
07/04/2016	<0.08	<2	7.9	<1	10	<0.33
14/04/2016	0.12	<2	7.7	<0.33	41	11
18/04/2016	<0.08	<2	7.6	<0.33	8	10
05/05/2016	<0.10	<2	7.6	<0.33	16	13
12/05/2016	<0.08	<2	7.7	<0.33	4	14
16/05/2016	<0.08	<2	7.9	<0.33	12	3
26/05/2016	<0.08	<2	8.0	<0.33	2	13
09/06/2016	<0.08	<2	7.9	<0.33	5	17
21/06/2016	<0.08	<2	8.0	<0.33	<1	14
30/06/2016	<0.08	<2	7.7	<0.33	<1	N/A
07/07/2016	<0.08	<2	7.9	<0.33	4	18
04/08/2016	<0.08	<2	8.1	<0.33	4	18
11/08/2016	<0.08	<2	8.1	<0.33	<1	17
18/08/2016	<0.08	<2	8	<0.33	1	19
29/08/2016	<0.08	<2	7.6	<0.33	<1	19
08/09/2016	<0.08	<2	7.6	<0.33	<1	17
15/09/2016	<0.08	<2	7.9	<0.33	5	17
22/09/2016	<0.08	<2	7.8	<0.33	2	12
29/09/2016	<0.08	<2	7.8	<0.33	3	14
13/10/2016	<0.08	<2	7.9	<0.01	8	11
19/10/2016	<0.08	<2	7.8	<0.01	2	10
24/10/2016	<0.08	<2	7.8	0.03	3	12
03/11/2016	<0.08	<2	8.0	<0.33	7	11
10/11/2016	<0.08	<2	7.9	<0.33	7	8
17/11/2016	0.08	<2	7.6	<0.33	27	7
24/11/2016	<0.08	<2	7.7	<0.33	3	N/A
29/11/2016	<0.08	<2	7.7	<0.33	2	5
07/12/2016	<0.08	<2	8.0	<0.01	5	10
15/12/2016	<0.08	<2	8.0	<0.01	10	7
20/12/2016	<0.08	<2	8.0	<0.01	9	5

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**CERTIFICATE OF ANALYSIS**

Page 1 of 2

**Project Description:** Analysis of Aqueous Samples (Huntstown)

**Attention:** Mr. Colin Doyle **Lab ID:** 126433

**Company:** Roadstone Belgard, **Date Sampled:** 08/01/2016  
**Address:** Fortunestown Road,  
Belgard,  
Tallaght,  
Dublin 24.

**Certificate No:** L/16/0132 **Date Rec'd:** 11/01/2016

**Issue Date:** 01/02/2016 **Our Ref:** WS-40151

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**Project Summary:** One sample was analysed for a range of determinands.  
Please see page 2 for results. Terms & Conditions and methods  
used are outlined in the attached appendix.

**No. of Pages:** Results page 2 plus 4 page appendix

Peter O'Byrne  
Quality Manager

Ms Breda Moore  
Technical Manager



### ANALYSIS OF AQUEOUS SAMPLES.

Date Sampled: 08/01/2016  
 Date Rec'd : 11/01/2016  
 Date Analysis Commenced: 11/01/2016  
 Our Ref. : WS-40151  
 Certificate No. L/16/0132

Determinand	Sample ID	V Notch	MAC Values
	Lab ID	North 126433	
Ammoniacal Nitrogen	n/a	<0.08	<0.5
BOD	n/a	<2	5
Orthophosphate as P	**	<0.33	0.5
pH	**	8.0	6.0-9.0
Suspended Solids	n/a	10	15
Temperature °C	on-site	18	25

Concentrations expressed in mg/l (ppm) unless otherwise stated.

#: Analysis of metals are performed on the filtered sample.

\*\* = INAB Accredited Tests    ++ = Subcontracted Tests    n/a = Non-INAB Accredited Tests

The above results relate only to the sample tested

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**Exceedances are highlighted in bold.**

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**MRC = Minimum Required Concentration.**



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**CERTIFICATE OF ANALYSIS**

Page 1 of 6

<b>Project Description:</b>	Analysis of Aqueous Samples (Huntstown)		
<b>Attention:</b>	Mr. Colin Doyle	<b>Lab ID:</b>	126545 - 126554
<b>Company:</b>	Roadstone Belgard,	<b>Date Sampled:</b>	13/01/2016
<b>Address:</b>	Fortunestown Road, Belgard, Tallaght, Dublin 24.		
<b>Certificate No:</b>	L/16/0213	<b>Date Rec'd:</b>	13/01/2016
<b>Issue Date:</b>	16/02/2016	<b>Our Ref:</b>	WS-40179, 16-55508 & 16-57394

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**Project Summary:** Ten samples were analysed for a range of determinands. Please see page 2-6 for results. Terms & Conditions and methods used are outlined in the attached appendix.

**No. of Pages:** Results page 2-6 plus 4 page appendix

Peter O'Byrne  
Quality Manager

Ms Breda Moore  
Technical Manager



### ANALYSIS OF AQUEOUS SAMPLES.

Date Sampled: 13/01/2016  
 Date Rec'd : 13/01/2016  
 Date Analysis Commenced: 13/01/2016  
 Our Ref. : WS-40179 , 16-55508 & 16-57394  
 Certificate No. L/16/0213

Determinand	Sample ID	V Notch	MAC
	Lab ID	North 126545	Values
Ammonia as NH <sub>4</sub>	n/a	<0.10	1
Ammoniacal Nitrogen	n/a	<0.08	<0.5
BOD	n/a	<2	5
COD	n/a	8	30
Cadmium #	**	<0.03	-
Copper #	**	<0.05	-
Detergents as MBAS	n/a	<0.05	10
Dissolved Oxygen	n/a	<b>9.6</b>	6
Dissolved Solids	n/a	468	-
Iron #	**	<0.05	-
Lead #	**	0.20	-
Magnesium	++	7 (note 1)	-
Manganese #	**	<0.03	-
Mineral Oil ##	++	<0.010	10
Nickel #	**	<0.10	-
Orthophosphate as P	++	<0.33 (note 1)	0.5
pH	**	8.0	6.0-9.0
Phosphate	++	<1 (note 1)	1
Sulphate	++	280 (note 1)	300
Suspended Solids	n/a	11	15
Temperature °C	on-site	5	25
Zinc #	**	<0.01	-

Concentrations expressed in mg/l (ppm) unless otherwise stated.

#: Analysis of metals are performed on the filtered sample.

## TPH, DRO and Mineral Oil result is based on analysis of cold extract with DCM as solvent.

Note 1: Subcontracted due to instrument breakdown.

\*\* = INAB Accredited Tests    ++ = Subcontracted Tests    n/a = Non-INAB Accredited Tests

The above results relate only to the sample tested

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**MAC = Maximum Admissable Concentration.**

**MRC = Minimum Required Concentration.**



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Page 1 of 3

<b>Project Description:</b>	Analysis of Aqueous Samples (Huntstown)		
<b>Attention:</b>	Mr. Colin Doyle	<b>Lab ID:</b>	126726 - 126727
<b>Company:</b>	Roadstone Belgard,	<b>Date Sampled:</b>	21/01/2016
<b>Address:</b>	Fortunestown Road, Belgard, Tallaght, Dublin 24.		
<b>Certificate No:</b>	L/16/0225	<b>Date Rec'd:</b>	22/01/2016
<b>Issue Date:</b>	17/02/2016	<b>Our Ref:</b>	WS-40237, 16-56355 & 16-57394

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**Project Summary:** Two samples were analysed for a range of determinands. Please see page 2-3 for results. Terms & Conditions and methods used are outlined in the attached appendix.

**No. of Pages:** Results page 2-3 plus 4 page appendix

Peter O'Byrne  
Quality Manager

Ms Breda Moore  
Technical Manager



### ANALYSIS OF AQUEOUS SAMPLES.

Date Sampled: 21/01/2016  
 Date Rec'd : 22/01/2016  
 Date Analysis Commenced: 22/01/2016  
 Our Ref. :WS-40237, 16-56355 & 16-57394  
 Certificate No. L/16/0225

Determinand	Sample ID	V Notch	MAC
	Lab ID	North	Values
		126727	
Ammoniacal Nitrogen	n/a	<0.08	<0.5
BOD	n/a	<2	5
Orthophosphate as P	++	<0.33 (note 1)	0.5
pH	**	7.7	6.0-9.0
Suspended Solids	n/a	5	15
Temperature °C	on-site	8	25

Concentrations expressed in mg/l (ppm) unless otherwise stated.

Note 1: Subcontracted due to instrument breakdown.

\*\* = INAB Accredited Tests    ++ = Subcontracted Tests    n/a = Non-INAB Accredited Tests

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Page 1 of 3

<b>Project Description:</b>	Analysis of Aqueous Samples (Huntstown)		
<b>Attention:</b>	Mr. Colin Doyle	<b>Lab ID:</b>	126938 - 126939
<b>Company:</b>	Roadstone Belgard,	<b>Date Sampled:</b>	28/01/2016
<b>Address:</b>	Fortunestown Road, Belgard, Tallaght, Dublin 24.		
<b>Certificate No:</b>	L/16/0290	<b>Date Rec'd:</b>	29/01/2016
<b>Issue Date:</b>	24/02/2016	<b>Our Ref:</b>	WS-40293, 16-57982 & 16-56919

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**Project Summary:** Two samples were analysed for a range of determinands. Please see page 2-3 for results. Terms & Conditions and methods used are outlined in the attached appendix.

**No. of Pages:** Results page 2-3 plus 4 page appendix

Peter O'Byrne  
Quality Manager

Ms Breda Moore  
Technical Manager



### ANALYSIS OF AQUEOUS SAMPLES.

Date Sampled: 28/01/2016  
 Date Rec'd : 29/01/2016  
 Date Analysis Commenced: 29/01/2016  
 Our Ref. : WS-40293, 16-57982 & 16-56919  
 Certificate No. L/16/0290

Determinand	Sample ID	V Notch	MAC
	Lab ID	North 126938	Values
Ammoniacal Nitrogen	n/a	<0.08	<0.5
BOD	n/a	<2	5
Orthophosphate as P	++	<0.33 (note 1)	0.5
pH	**	7.7	6.0-9.0
Suspended Solids	n/a	21	15
Temperature °C	on-site	8	25

Concentrations expressed in mg/l (ppm) unless otherwise stated.

Note 1: Subcontracted due to instrument breakdown.

\*\* = INAB Accredited Tests    ++ = Subcontracted Tests    n/a = Non-INAB Accredited Tests

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**CERTIFICATE OF ANALYSIS**

Page 1 of 3

<b>Project Description:</b>	Analysis of Aqueous Samples (Huntstown)		
<b>Attention:</b>	Mr. Colin Doyle	<b>Lab ID:</b>	127094 - 127095
<b>Company:</b>	Roadstone Belgard,	<b>Date Sampled:</b>	04/02/2016
<b>Address:</b>	Fortunestown Road, Belgard, Tallaght, Dublin 24.		
<b>Certificate No:</b>	L/16/0347	<b>Date Rec'd:</b>	05/02/2016
<b>Issue Date:</b>	29/02/2016	<b>Our Ref:</b>	WS-40351 & 16-57515

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**Project Summary:** Two samples were analysed for a range of determinands. Please see page 2-3 for results. Terms & Conditions and methods used are outlined in the attached appendix.

**No. of Pages:** Results page 2-3 plus 4 page appendix

Peter O'Byrne  
Quality Manager

Ms Breda Moore  
Technical Manager



### ANALYSIS OF AQUEOUS SAMPLES.

Date Sampled: 04/02/2016  
 Date Rec'd : 05/02/2016  
 Date Analysis Commenced: 05/02/2016  
 Our Ref. : WS-40351 & 16-57515  
 Certificate No. L/16/0347

Determinand	Sample ID Lab ID	V Notch North 127094	MAC Values
Ammoniacal Nitrogen	n/a	<0.08	<0.5
BOD	n/a	<2	5
Orthophosphate as P	**	<0.33	0.5
pH	**	7.9	6.0-9.0
Suspended Solids	n/a	14	15
Temperature °C	on-site	10	25

Concentrations expressed in mg/l (ppm) unless otherwise stated.

\*\* = INAB Accredited Tests    ++ = Subcontracted Tests    n/a = Non-INAB Accredited Tests

The above results relate only to the sample tested

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**MRC = Minimum Required Concentration.**



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**CERTIFICATE OF ANALYSIS**

Page 1 of 2

**Project Description:** Analysis of Aqueous Samples (Huntstown)

**Attention:** Mr. Colin Doyle **Lab ID:** 127225

**Company:** Roadstone Belgard, **Date Sampled:** 11/02/2016  
**Address:** Fortunestown Road,  
Belgard,  
Tallaght,  
Dublin 24.

**Certificate No:** L/16/0281 **Date Rec'd:** 12/02/2016

**Issue Date:** 22/02/2016 **Our Ref:** WS-40395

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**Project Summary:** One sample was analysed for a range of determinands. Please see page 2 for results. Terms & Conditions and methods used are outlined in the attached appendix.

**No. of Pages:** Results page 2 plus 4 page appendix

Peter O'Byrne  
Quality Manager

Ms Breda Moore  
Technical Manager



### ANALYSIS OF AQUEOUS SAMPLES.

Date Sampled: 11/02/2016  
 Date Rec'd : 12/02/2016  
 Date Analysis Commenced: 12/02/2016  
 Our Ref. : WS-40395  
 Certificate No. L/16/0281

Determinand	Sample ID Lab ID	V Notch North 127225	MAC Values
Ammoniacal Nitrogen	n/a	<b>&lt;0.08</b>	<0.5
BOD	n/a	<b>&lt;2</b>	5
Orthophosphate as P	**	<b>&lt;0.33</b>	0.5
pH	**	<b>7.7</b>	6.0-9.0
Suspended Solids	n/a	<b>37</b>	15
Temperature °C	on-site	<b>10</b>	25

Concentrations expressed in mg/l (ppm) unless otherwise stated.

\*\* = INAB Accredited Tests    ++ = Subcontracted Tests    n/a = Non-INAB Accredited Tests

The above results relate only to the sample tested

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**CERTIFICATE OF ANALYSIS**

Page 1 of 3

<b>Project Description:</b>	Analysis of Aqueous Samples (Huntstown)		
<b>Attention:</b>	Mr. Colin Doyle	<b>Lab ID:</b>	127597 - 127599
<b>Company:</b>	Roadstone Belgard,	<b>Date Sampled:</b>	26/02/2016
<b>Address:</b>	Fortunestown Road, Belgard, Tallaght, Dublin 24.	<b>Date Rec'd:</b>	29/02/2016
<b>Certificate No:</b>	L/16/0464	<b>Our Ref:</b>	WS-40508 & 16-59686
<b>Issue Date:</b>	18/03/2016		

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**Project Summary:** Three samples were analysed for a range of determinands. Please see page 2-3 for results. Terms & Conditions and methods used are outlined in the attached appendix.

**No. of Pages:** Results page 2-3 plus 4 page appendix

Peter O'Byrne  
Quality Manager

Ms Breda Moore  
Technical Manager



### ANALYSIS OF AQUEOUS SAMPLES.

Date Sampled: 26/02/2016  
 Date Rec'd : 29/02/2016  
 Date Analysis Commenced: 29/02/2016  
 Our Ref. : WS-40508 & 16-59686  
 Certificate No. L/16/0464

Determinand	Sample ID	V Notch	MAC
	Lab ID	North 127597	Values
Ammoniacal Nitrogen	n/a	<0.08	<0.5
BOD	n/a	<2	5
COD	n/a	0	30
Detergents as MBAS	n/a	<0.05	10
Dissolved Oxygen	n/a	<b>9.9</b>	6
Mineral Oil ##	++	0.017	10
Phosphate as P	**	<0.33	0.5
pH	**	7.9	6.0-9.0
Sulphate	**	254	300
Suspended Solids	n/a	15	15
Temperature °C	on-site	8	25

Concentrations expressed in mg/l (ppm) unless otherwise stated.

#: Analysis of metals are performed on the filtered sample.

## TPH, DRO and Mineral Oil result is based on analysis of cold extract with DCM as solvent.

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**CERTIFICATE OF ANALYSIS**

Page 1 of 2

**Project Description:** Analysis of Aqueous Sample (Huntstown)

**Attention:** Mr. Colin Doyle **Lab ID:** 127761

**Company:** Roadstone Belgard, **Date Sampled:** 03/03/2016  
**Address:** Fortunestown Road,  
Belgard,  
Tallaght,  
Dublin 24.

**Certificate No:** L/16/0482 **Date Rec'd:** 04/03/2016

**Issue Date:** 22/03/2016 **Our Ref:** WS-40536

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**Project Summary:** One sample was analysed for a range of determinands. Please see page 2 for results. Terms & Conditions and methods used are outlined in the attached appendix.

**No. of Pages:** Results page 2 plus 4 page appendix

Peter O'Byrne  
Quality Manager

Ms Breda Moore  
Technical Manager



### ANALYSIS OF AQUEOUS SAMPLES.

Date Sampled: 03/03/2016  
 Date Rec'd : 04/03/2016  
 Date Analysis Commenced: 04/03/2016  
 Our Ref. : WS-40536  
 Certificate No. L/16/0482

Determinand	Sample ID Lab ID	V Notch North 12761	MAC Values
Ammoniacal Nitrogen	n/a	<0.08	<0.5
BOD	n/a	<2	5
Orthophosphate as P	**	<0.33	0.5
pH	**	7.9	6.0-9.0
Suspended Solids	n/a	17	15
Temperature °C	on-site	9	25

Concentrations expressed in mg/l (ppm) unless otherwise stated.

\*\* = INAB Accredited Tests    ++ = Subcontracted Tests    n/a = Non-INAB Accredited Tests

The above results relate only to the sample tested

This report should not be regenerated except in full and with the consent of T.E. Laboratories Ltd.

**Exceedances are highlighted in bold.**

**MAC = Maximum Admissable Concentration.**

**MRC = Minimum Required Concentration.**



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Loughmartin Business Park, Tullow, Co. Carlow  
Phone: 059-9152881 Fax: 059-9152886



**CERTIFICATE OF ANALYSIS**

Page 1 of 2

**Project Description:** Analysis of Aqueous Sample (Huntstown)

**Attention:** Mr. Colin Doyle **Lab ID:** 128013

**Company:** Roadstone Belgard, **Date Sampled:** 10/03/2016  
**Address:** Fortunestown Road,  
Belgard,  
Tallaght,  
Dublin 24.

**Certificate No:** L/16/0496 **Date Rec'd:** 11/03/2016

**Issue Date:** 23/03/2016 **Our Ref:** WS-40592

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**Project Summary:** One sample was analysed for a range of determinands. Please see page 2 for results. Terms & Conditions and methods used are outlined in the attached appendix.

**No. of Pages:** Results page 2 plus 4 page appendix

Peter O'Byrne  
Quality Manager

Ms Breda Moore  
Technical Manager



### ANALYSIS OF AQUEOUS SAMPLES.

Date Sampled: 10/03/2016  
 Date Rec'd : 11/03/2016  
 Date Analysis Commenced: 11/03/2016  
 Our Ref. : WS-40592  
 Certificate No. L/16/0496

Determinand	Sample ID Lab ID	V Notch North 128013	MAC Values
Ammoniacal Nitrogen	n/a	<0.08	<0.5
BOD	n/a	<2	5
Orthophosphate as P	**	<0.33	0.5
pH	**	7.8	6.0-9.0
Suspended Solids	n/a	<b>39</b>	15
Temperature °C	on-site	10	25

Concentrations expressed in mg/l (ppm) unless otherwise stated.

\*\* = INAB Accredited Tests    ++ = Subcontracted Tests    n/a = Non-INAB Accredited Tests

The above results relate only to the sample tested

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**Exceedances are highlighted in bold.**

**MAC = Maximum Admissable Concentration.**

**MRC = Minimum Required Concentration.**



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**CERTIFICATE OF ANALYSIS**

Page 1 of 2

<b>Project Description:</b>	Analysis of Aqueous Sample (Huntstown)		
<b>Attention:</b>	Mr. Colin Doyle	<b>Lab ID:</b>	128188
<b>Company:</b>	Roadstone Belgard,	<b>Date Sampled:</b>	18/03/2016
<b>Address:</b>	Fortunestown Road, Belgard, Tallaght, Dublin 24.		
<b>Certificate No:</b>	L/16/0569	<b>Date Rec'd:</b>	21/03/2016
<b>Issue Date:</b>	07/04/2016	<b>Our Ref:</b>	WS-40644

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**Project Summary:** One sample was analysed for a range of determinands. Please see page 2 for results. Terms & Conditions and methods used are outlined in the attached appendix.

**No. of Pages:** Results page 2 plus 4 page appendix

Peter O'Byrne  
Quality Manager

Ms Breda Moore  
Technical Manager



### ANALYSIS OF AQUEOUS SAMPLES.

Date Sampled: 18/03/2016  
 Date Rec'd : 21/03/2016  
 Date Analysis Commenced: 21/03/2016  
 Our Ref. : WS-40644  
 Certificate No. L/16/0569

Determinand	Sample ID Lab ID	V Notch North 128188	MAC Values
Ammoniacal Nitrogen	n/a	<0.08	<0.5
BOD	n/a	<2	5
Orthophosphate as P	**	<0.33	0.5
pH	**	7.7	6.0-9.0
Suspended Solids	n/a	19	15
Temperature °C	on site	7	25

Concentrations expressed in mg/l (ppm) unless otherwise stated.

\*\* = INAB Accredited Tests    ++ = Subcontracted Tests    n/a = Non-INAB Accredited Tests

The above results relate only to the sample tested

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Exceedances are highlighted in bold.

MAC = Maximum Admissable Concentration.

MRC = Minimum Required Concentration.

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**CERTIFICATE OF ANALYSIS**

Page 1 of 5

<b>Project Description:</b>	Analysis of Aqueous Sample (Huntstown)		
<b>Attention:</b>	Mr. Colin Doyle	<b>Lab ID:</b>	128392 - 128400
<b>Company Address:</b>	Roadstone Belgard, Fortunestown Road, Belgard, Tallaght, Dublin 24.	<b>Date Sampled:</b>	31/03/2016
<b>Certificate No:</b>	L/16/0627	<b>Date Rec'd:</b>	31/03/2016
<b>Issue Date:</b>	14/04/2016	<b>Our Ref:</b>	WS-40713 & 16-62839

**Project Summary:** Nine samples were analysed for a range of determinands. Please see page 2-5 for results. Terms & Conditions and methods used are outlined in the attached appendix.

**No. of Pages:** Results page 2-5 plus 4 page appendix

Peter O'Byrne  
Quality Manager

Ms Breda Moore  
Technical Manager



### ANALYSIS OF AQUEOUS SAMPLES.

Date Sampled: 31/03/2016  
 Date Rec'd : 31/03/2016  
 Date Analysis Commenced: 31/03/2016  
 Our Ref. : WS-40713 & 16-62839  
 Certificate No. L/16/0627

Determinand	Sample ID	V Notch	MAC
	Lab ID	North 128392	Values
Ammoniacal Nitrogen	n/a	<0.08	<0.5
BOD	n/a	<2	5
COD	n/a	4	30
Detergents as MBAS	n/a	<0.05	10
Dissolved Oxygen	n/a	<b>9.4</b>	6
Mineral Oil ##	++	<0.010	10
Phosphate as P	**	<0.33	0.5
pH	**	7.9	6.0-9.0
Sulphate	**	237	300
Suspended Solids	n/a	4	15
Temperature °C	on-site	8	25

Concentrations expressed in mg/l (ppm) unless otherwise stated.

#: Analysis of metals are performed on the filtered sample.

## TPH, DRO and Mineral Oil result is based on analysis of cold extract with DCM as solvent.

\*\* = INAB Accredited Tests ++ = Subcontracted Tests n/a = Non-INAB Accredited Tests

The above results relate only to the sample tested

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**Exceedances are highlighted in bold.**

**MAC = Maximum Admissable Concentration.**

**MRC = Minimum Required Concentration.**

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**CERTIFICATE OF ANALYSIS**

Page 1 of 2

<b>Project Description:</b>	Analysis of Aqueous Sample (Huntstown)		
<b>Attention:</b>	Mr. Colin Doyle	<b>Lab ID:</b>	128528
<b>Company:</b>	Roadstone Belgard,	<b>Date Sampled:</b>	07/04/2016
<b>Address:</b>	Fortunestown Road, Belgard, Tallaght, Dublin 24.		
<b>Certificate No:</b>	L/16/0691	<b>Date Rec'd:</b>	08/04/2016
<b>Issue Date:</b>	22/04/2016	<b>Our Ref:</b>	WS-40746

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**Project Summary:** One samples was analysed for a range of determinands.  
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used are outlined in the attached appendix.

**No. of Pages:** Results page 2 plus 4 page appendix

Peter O'Byrne  
Quality Manager

Ms Breda Moore  
Technical Manager



### ANALYSIS OF AQUEOUS SAMPLES.

Date Sampled: 07/04/2016  
 Date Rec'd: 08/04/2016  
 Date Analysis Commenced: 08/04/2016  
 Our Ref. :WS-40746  
 Certificate No. L/16/0691

Determinand	Sample ID Lab ID	W4 128528	MAC Values
Ammoniacal Nitrogen	n/a	<0.08	0.5
BOD	n/a	<2	5
pH	**	7.9	6.0-9.0
Suspended Solids	n/a	<1	15
Temperature °C	on-site	10	25
Orthophosphate as P	**	<0.33	1

Concentrations expressed in mg/l (ppm) unless otherwise stated.

\*\* = INAB Accredited Tests    ++ = Subcontracted Tests    n/a = Non-INAB Accredited Tests

The above results relate only to the sample tested

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**Exceedances are highlighted in bold.**

**MAC = Maximum Admissable Concentration.**

**MRC = Minimum Required Concentration.**

# Mineral Oil result is based on analysis of cold extract with Hexane mixture as solvent.





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**CERTIFICATE OF ANALYSIS**

Page 1 of 2

**Project Description:** Analysis of Aqueous Sample (Huntstown)

**Attention:** Mr. Colin Doyle **Lab ID:** 128657

**Company:** Roadstone Belgard, **Date Sampled:** 14/04/2016  
**Address:** Fortunestown Road,  
Belgard,  
Tallaght,  
Dublin 24.

**Certificate No:** L/16/0732 **Date Rec'd:** 15/04/2016

**Issue Date:** 03/05/2016 **Our Ref:** WS-40792

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**Project Summary:** One samples was analysed for a range of determinands. Please see page 2 for results. Terms & Conditions and methods used are outlined in the attached appendix.

**No. of Pages:** Results page 2 plus 4 page appendix

Peter O'Byrne  
Quality Manager

Ms Breda Moore  
Technical Manager



### ANALYSIS OF AQUEOUS SAMPLES.

Date Sampled: 14 /04/2016  
 Date Rec'd: 15/04/2016  
 Date Analysis Commenced: 15/04/2016  
 Our Ref. : WS-40792  
 Certificate No. L/16/0732

Determinand	Sample ID Lab ID	W4 128657	MAC Values
Ammoniacal Nitrogen	n/a	<b>0.2</b>	0.5
BOD	n/a	<2	5
pH	**	7.7	6.0-9.0
Suspended Solids	n/a	<b>41</b>	15
Temperature °C	on-site	11	25
Orthophosphate as P	**	<0.33	1

Concentrations expressed in mg/l (ppm) unless otherwise stated.

\*\* = INAB Accredited Tests    ++ = Subcontracted Tests    n/a = Non-INAB Accredited Tests

The above results relate only to the sample tested  
 This report should not be regenerated except in full and with the consent of T.E. Laboratories Ltd.

**Exceedances are highlighted in bold.**  
**MAC = Maximum Admissible Concentration.**  
**MRC = Minimum Required Concentration.**

# Mineral Oil result is based on analysis of cold extract with Hexane mixture as solvent.



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**CERTIFICATE OF ANALYSIS**

Page 1 of 6

<b>Project Description:</b>	Analysis of Aqueous Sample (Huntstown)		
<b>Attention:</b>	Mr. Colin Doyle	<b>Lab ID:</b>	128686 -128695
<b>Company:</b>	Roadstone Belgard,	<b>Date Sampled:</b>	18/04/2016
<b>Address:</b>	Fortunestown Road, Belgard, Tallaght, Dublin 24.	<b>Date Rec'd:</b>	18/04/2016
<b>Certificate No:</b>	L/16/0736	<b>Our Ref:</b>	WS-40806 & 16-64169
<b>Issue Date:</b>	12/05/2016		

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**Project Summary:** Ten samples were analysed for a range of determinands. Please see page 2-6 for results. Terms & Conditions and methods used are outlined in the attached appendix.

**No. of Pages:** Results page 2-6 plus 4 page appendix

Peter O'Byrne  
Quality Manager

Ms Breda Moore  
Technical Manager



### ANALYSIS OF AQUEOUS SAMPLES.

Date Sampled: 18/04/2016  
 Date Rec'd : 18/04/2016  
 Date Analysis Commenced: 18/04/2016  
 Our Ref. : WS-40806 & 16-64169  
 Certificate No. L/16/0736

Determinand	Sample ID Lab ID	W4 128686	MAC Values
Ammoniacal Nitrogen	n/a	<0.08	<0.5
BOD	n/a	<2	<5
Cadmium #	**	<0.03	-
Copper #	**	<0.05	-
Dissolved Solids	n/a	434	-
Diesel Range Organics ##	++	<0.010	-
Iron #	**	0.05	-
Lead #	**	<0.20	-
Magnesium	**	12	-
Manganese #	**	0.05	-
Nickel #	**	<0.10	-
pH	**	7.6	6-9
Orthophosphate as P	**	<0.33	0.5
PRO	++	<0.001	-
Suspended Solids	n/a	8	<15
Temperature °C	on-site	10	<25°C
TPH ##	++	<0.010	-
Zinc #	**	0.03	-

Concentrations are expressed as mg/l (ppm)  
 unless otherwise specified.

## TPH and DRO result is based on analysis of cold extract with DCM as solvent.

\*\* = INAB Accredited Tests    ++ = Subcontracted Tests    n/a = Non-INAB Accredited Tests



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**CERTIFICATE OF ANALYSIS**

Page 1 of 2

<b>Project Description:</b>	Analysis of Aqueous Sample (Huntstown)		
<b>Attention:</b>	Mr. Colin Doyle	<b>Lab ID:</b>	129105
<b>Company:</b>	Roadstone Belgard,	<b>Date Sampled:</b>	05/05/2016
<b>Address:</b>	Fortunestown Road, Belgard, Tallaght, Dublin 24.		
<b>Certificate No:</b>	L/16/0855	<b>Date Rec'd:</b>	06/05/2016
<b>Issue Date:</b>	20/05/2016	<b>Our Ref:</b>	WS-40932

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**Project Summary:** One samples was analysed for a range of determinands. Please see page 2 for results. Terms & Conditions and methods used are outlined in the attached appendix.

**No. of Pages:** Results page 2 plus 4 page appendix

Peter O'Byrne  
Quality Manager

Ms Breda Moore  
Technical Manager



### ANALYSIS OF AQUEOUS SAMPLES.

Date Sampled: 05/05/2016  
 Date Rec'd: 06/05/2016  
 Date Analysis Commenced: 06/05/2016  
 Our Ref. : WS-40932  
 Certificate No. L/16/0855

Determinand	Sample ID	W4	MAC
	Lab ID	129103	Values
Ammoniacal Nitrogen	n/a	<0.10	0.5
BOD	n/a	<2	5
pH	**	7.6	6.0-9.0
Suspended Solids	n/a	<b>16</b>	15
Temperature °C	on-site	13	25
Orthophosphate as P	**	<0.33	1

Concentrations expressed in mg/l (ppm) unless otherwise stated.

\*\* = INAB Accredited Tests    ++ = Subcontracted Tests    n/a = Non-INAB Accredited Tests

The above results relate only to the sample tested

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**Exceedances are highlighted in bold.**

**MAC = Maximum Admissible Concentration.**

**MRC = Minimum Required Concentration.**

# Mineral Oil result is based on analysis of cold extract with Hexane mixture as solvent.

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**CERTIFICATE OF ANALYSIS**

Page 1 of 2

<b>Project Description:</b>	Analysis of Aqueous Sample (Huntstown)		
<b>Attention:</b>	Mr. Colin Doyle	<b>Lab ID:</b>	129257
<b>Company:</b>	Roadstone Belgard,	<b>Date Sampled:</b>	12/05/2016
<b>Address:</b>	Fortunestown Road, Belgard, Tallaght, Dublin 24.		
<b>Certificate No:</b>	L/16/0910	<b>Date Rec'd:</b>	13/05/2016
<b>Issue Date:</b>	27/05/2016	<b>Our Ref:</b>	WS-40986

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**Project Summary:** One samples was analysed for a range of determinands. Please see page 2 for results. Terms & Conditions and methods used are outlined in the attached appendix.

**No. of Pages:** Results page 2 plus 4 page appendix

Peter O'Byrne  
Quality Manager

Ms Breda Moore  
Technical Manager



### ANALYSIS OF AQUEOUS SAMPLES.

Date Sampled: 12/05/2016  
 Date Rec'd: 13/05/2016  
 Date Analysis Commenced: 13/05/2016  
 Our Ref. :WS-40985  
 Certificate No. L/16/0910

Determinand	Sample ID	W4	MAC
	Lab ID	129257	Values
Ammoniacal Nitrogen	n/a	<0.08	0.5
BOD	n/a	<2	5
pH	**	7.7	6.0-9.0
Suspended Solids	n/a	4	15
Temperature °C	on-site	14	25
Orthophosphate as P	**	<0.33	1

Concentrations expressed in mg/l (ppm) unless otherwise stated.

\*\* = INAB Accredited Tests    ++ = Subcontracted Tests    n/a = Non-INAB Accredited Tests

The above results relate only to the sample tested  
 This report should not be regenerated except in full and with the consent of T.E. Laboratories Ltd.

**Exceedances are highlighted in bold.**  
**MAC = Maximum Admissable Concentration.**  
**MRC = Minimum Required Concentration.**

# Mineral Oil result is based on analysis of cold extract with Hexane mixture as solvent.



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**CERTIFICATE OF ANALYSIS**

Page 1 of 5

**Project Description:** Analysis of Aqueous Sample (Huntstown)

**Attention:** Mr. Colin Doyle **Lab ID:** 129296 - 129304

**Company:** Roadstone Belgard, **Date Sampled:** 16/05/2016  
**Address:** Fortunestown Road,  
Belgard,  
Tallaght,  
Dublin 24.

**Certificate No:** L/16/0919 **Date Rec'd:** 17/05/2016

**Issue Date:** 01/06/2016 **Our Ref:** WS-40995 & 16-66890

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**Project Summary:** Nine samples were analysed for a range of determinands.  
Please see page 2-5 for results. Terms & Conditions and methods  
used are outlined in the attached appendix.

**No. of Pages:** Results page 2-5 plus 4 page appendix

Peter O'Byrne  
Quality Manager

Ms Breda Moore  
Technical Manager



### ANALYSIS OF AQUEOUS SAMPLES.

Date Sampled: 16/05/2016  
 Date Rec'd : 17/05/2016  
 Date Analysis Commenced: 16/05/2016  
 Our Ref. : WS-40995 & 16-66890  
 Certificate No. L/16/0919

Determinand	Sample ID	W4	MAC Values
	Lab ID	129296	
Ammoniacal Nitrogen	n/a	<0.08	<0.5
BOD	n/a	<2	<5
pH	**	7.9	6-9
Orthophosphate as P	**	<0.33	0.5
Suspended Solids	n/a	3	<15
Temperature °C	on-site	12	<25°C

Concentrations are expressed as mg/l (ppm) unless otherwise specified.

\*\* = INAB Accredited Tests    ++ = Subcontracted Tests    n/a = Non-INAB Accredited Tests



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**CERTIFICATE OF ANALYSIS**

Page 1 of 2

**Project Description:** Analysis of Aqueous Sample (Huntstown)

**Attention:** Mr. Colin Doyle **Lab ID:** 129550

**Company:** Roadstone Belgard, **Date Sampled:** 26/05/2016  
**Address:** Fortunestown Road,  
Belgard,  
Tallaght,  
Dublin 24.

**Certificate No:** L/16/0998 **Date Rec'd:** 27/05/2016

**Issue Date:** 13/06/2016 **Our Ref:** WS-41069

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**Project Summary:** One samples was analysed for a range of determinands. Please see page 2 for results. Terms & Conditions and methods used are outlined in the attached appendix.

**No. of Pages:** Results page 2 plus 4 page appendix

Peter O'Byrne  
Quality Manager

Ms Breda Moore  
Technical Manager



### ANALYSIS OF AQUEOUS SAMPLES.

Date Sampled: 26/05/2016  
 Date Rec'd: 27/05/2016  
 Date Analysis Commenced: 27/05/2016  
 Our Ref. :WS-41069  
 Certificate No. L/16/0998

Determinand	Sample ID	W4	MAC
	Lab ID	129550	Values
Ammoniacal Nitrogen	n/a	<0.08	0.5
BOD	n/a	<2	5
pH	**	8.0	6.0-9.0
Suspended Solids	n/a	2	15
Temperature °C	on-site	13	25
Orthophosphate as P	**	<0.33	1

Concentrations expressed in mg/l (ppm) unless otherwise stated.

\*\* = INAB Accredited Tests    ++ = Subcontracted Tests    n/a = Non-INAB Accredited Tests

The above results relate only to the sample tested

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**Exceedances are highlighted in bold.**

**MAC = Maximum Admissable Concentration.**

**MRC = Minimum Required Concentration.**

# Mineral Oil result is based on analysis of cold extract with Hexane mixture as solvent.

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**CERTIFICATE OF ANALYSIS**

Page 1 of 2

<b>Project Description:</b>	Analysis of Aqueous Sample (Huntstown)		
<b>Attention:</b>	Mr. Colin Doyle	<b>Lab ID:</b>	129884
<b>Company:</b>	Roadstone Belgard,	<b>Date Sampled:</b>	09/06/2016
<b>Address:</b>	Fortunestown Road, Belgard, Tallaght, Dublin 24.		
<b>Certificate No:</b>	L/16/1107	<b>Date Rec'd:</b>	10/06/2016
<b>Issue Date:</b>	21/06/2016	<b>Our Ref:</b>	WS-41179

**Project Summary:** One samples was analysed for a range of determinands.  
Please see page 2 for results. Terms & Conditions and methods  
used are outlined in the attached appendix.

**No. of Pages:** Results page 2 plus 4 page appendix

Peter O'Byrne  
Quality Manager

Ms Breda Moore  
Technical Manager



### ANALYSIS OF AQUEOUS SAMPLES.

Date Sampled: 09/06/2016  
 Date Rec'd: 10/06/2016  
 Date Analysis Commenced: 10/06/2016  
 Our Ref. :WS-41179  
 Certificate No. L/16/1107

Determinand	Sample ID	W4	MAC
	Lab ID	129884	Values
Ammoniacal Nitrogen	n/a	<0.08	0.5
BOD	n/a	<2	5
pH	**	7.9	6.0-9.0
Suspended Solids	n/a	5	15
Temperature °C	on-site	17	25
Orthophosphate as P	**	<0.33	1

Concentrations expressed in mg/l (ppm) unless otherwise stated.

\*\* = INAB Accredited Tests    ++ = Subcontracted Tests    n/a = Non-INAB Accredited Tests

The above results relate only to the sample tested

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**Exceedances are highlighted in bold.**

**MAC = Maximum Admissable Concentration.**

**MRC = Minimum Required Concentration.**

# Mineral Oil result is based on analysis of cold extract with Hexane mixture as solvent.



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**CERTIFICATE OF ANALYSIS**

Page 1 of 5

<b>Project Description:</b>	Analysis of Aqueous Sample (Huntstown)		
<b>Attention:</b>	Mr. Colin Doyle	<b>Lab ID:</b>	130233 - 130240
<b>Company:</b>	Roadstone Belgard,	<b>Date Sampled:</b>	21/06/2016
<b>Address:</b>	Fortunestown Road, Belgard, Tallaght, Dublin 24.		
<b>Certificate No:</b>	L/16/1168	<b>Date Rec'd:</b>	21/06/2016
<b>Issue Date:</b>	19/07/2016	<b>Our Ref:</b>	WS-41238 & 16-70656

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**Project Summary:** Nine samples were analysed for a range of determinands. Please see page 2-5 for results. Terms & Conditions and methods used are outlined in the attached appendix.

**No. of Pages:** Results page 2-5 plus 4 page appendix

Peter O'Byrne  
Quality Manager

Ms Breda Moore  
Technical Manager



### ANALYSIS OF AQUEOUS SAMPLES.

Date Sampled: 21/06/2016  
 Date Rec'd: 21/06/2016  
 Date Analysis Commenced: 21/06/2016  
 Our Ref. :WS-41238 & 16-70656  
 Certificate No. L/16/1168

Determinand	Sample ID	SW4	MAC Values
	Lab ID	130233	
Ammoniacal Nitrogen	n/a	<0.08	0.5
BOD	n/a	<2	5
pH	**	8.0	6.0-9.0
Suspended Solids	n/a	<1	15
Temperature °C	on-site	14	25
Orthophosphate as P	**	<0.33	1

Concentrations expressed in mg/l (ppm) unless otherwise stated.

\*\* = INAB Accredited Tests    ++ = Subcontracted Tests    n/a = Non-INAB Accredited Tests

The above results relate only to the sample tested  
 This report should not be regenerated except in full and with the consent of T.E. Laboratories Ltd.

**Exceedances are highlighted in bold.**  
**MAC = Maximum Admissable Concentration.**  
**MRC = Minimum Required Concentration.**

# Mineral Oil result is based on analysis of cold extract with Hexane mixture as solvent.



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Phone: 059-9152881 Fax: 059-9152886

**CERTIFICATE OF ANALYSIS**

Page 1 of 3

<b>Project Description:</b>	Analysis of Aqueous Sample (Huntstown)		
<b>Attention:</b>	Mr. Colin Doyle	<b>Lab ID:</b>	130435 - 130436
<b>Company:</b>	Roadstone Belgard,	<b>Date Sampled:</b>	30/06/2016
<b>Address:</b>	Fortunestown Road, Belgard, Tallaght, Dublin 24.	<b>Date Rec'd:</b>	30/06/2016
<b>Certificate No:</b>	L/16/1239	<b>Our Ref:</b>	WS-41310 & 16-71713
<b>Issue Date:</b>	26/07/2016		

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**Project Summary:** Two samples was analysed for a range of determinands. Please see page 2 for results. Terms & Conditions and methods used are outlined in the attached appendix.

**No. of Pages:** Results page 2 plus 4 page appendix

Peter O'Byrne  
Quality Manager

Ms Breda Moore  
Technical Manager



### ANALYSIS OF AQUEOUS SAMPLES.

Date Sampled: 30/06/2016  
 Date Rec'd: 30/06/2016  
 Date Analysis Commenced: 30/06/2016  
 Our Ref. :WS-41310 & 16-71713  
 Certificate No. L/16/1239

Determinand	Sample ID	W4	MAC Values
	Lab ID	130435	
Ammoniacal Nitrogen	n/a	<0.08	0.5
BOD	n/a	<2	5
pH	**	7.7	6.0-9.0
Suspended Solids	n/a	<1	15
Temperature °C	on-site	Not recorded	25
Orthophosphate as P	**	<0.33	1

Concentrations expressed in mg/l (ppm) unless otherwise stated.

\*\* = INAB Accredited Tests    ++ = Subcontracted Tests    n/a = Non-INAB Accredited Tests

The above results relate only to the sample tested  
 This report should not be regenerated except in full and with the consent of T.E. Laboratories Ltd.

**Exceedances are highlighted in bold.**  
**MAC = Maximum Admissable Concentration.**  
**MRC = Minimum Required Concentration.**

# Mineral Oil result is based on analysis of cold extract with Hexane mixture as solvent.



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**CERTIFICATE OF ANALYSIS**

Page 1 of 2

**Project Description:** Analysis of Aqueous Sample (Huntstown)

**Attention:** Mr. Colin Doyle **Lab ID:** 130694

**Company:** Roadstone Belgard, **Date Sampled:** 07/07/2016  
**Address:** Fortunestown Road,  
Belgard,  
Tallaght,  
Dublin 24.

**Certificate No:** L/16/1305 **Date Rec'd:** 08/07/2016

**Issue Date:** 27/07/2016 **Our Ref:** WS-41377

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**Project Summary:** One sample was analysed for a range of determinands. Please see page 2 for results. Terms & Conditions and methods used are outlined in the attached appendix.

**No. of Pages:** Results page 2 plus 4 page appendix

Peter O'Byrne  
Quality Manager

Ms Breda Moore  
Technical Manager



### ANALYSIS OF AQUEOUS SAMPLES.

Date Sampled: 07/07/2016  
 Date Rec'd: 08/07/2016  
 Date Analysis Commenced: 08/07/2016  
 Our Ref. :WS-41377  
 Certificate No. L/16/1305

Determinand	Sample ID	W4	MAC
	Lab ID	130694	Values
Ammoniacal Nitrogen	n/a	<0.08	0.5
BOD	n/a	<2	5
pH	**	7.9	6.0-9.0
Suspended Solids	n/a	4	15
Temperature °C	on-site	18	25
Orthophosphate as P	**	<0.33	1

Concentrations expressed in mg/l (ppm) unless otherwise stated.

\*\* = INAB Accredited Tests    ++ = Subcontracted Tests    n/a = Non-INAB Accredited Tests

The above results relate only to the sample tested

This report should not be regenerated except in full and with the consent of T.E. Laboratories Ltd.

**Exceedances are highlighted in bold.**

**MAC = Maximum Admissible Concentration.**

**MRC = Minimum Required Concentration.**

# Mineral Oil result is based on analysis of cold extract with Hexane mixture as solvent.



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**CERTIFICATE OF ANALYSIS**

Page 1 of 3

<b>Project Description:</b>	Analysis of Aqueous Sample (Huntstown)		
<b>Attention:</b>	Mr. Colin Doyle	<b>Lab ID:</b>	131238
<b>Company:</b>	Roadstone Belgard,	<b>Date Sampled:</b>	04/08/2016
<b>Address:</b>	Fortunestown Road, Belgard, Tallaght, Dublin 24.		
<b>Certificate No:</b>	L/16/1473	<b>Date Rec'd:</b>	05/08/2016
<b>Issue Date:</b>	19/08/2016	<b>Our Ref:</b>	WS-41546

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**Project Summary:** One sample was analysed for a range of determinands. Please see page 2 for results. Terms & Conditions and methods used are outlined in the attached appendix.

**No. of Pages:** Results page 2 plus 4 page appendix

Peter O'Byrne  
Quality Manager

Ms Breda Moore  
Technical Manager



**ANALYSIS OF AQUEOUS SAMPLES.**

Date Sampled: 04/08/2016  
 Date Rec'd: 05/08/2016  
 Date Analysis Commenced: 05/08/2016  
 Our Ref. :WS-41546  
 Certificate No. L/16/1473

Determinand	Sample ID Lab ID	Discharge 131238	MAC Values
Ammoniacal Nitrogen	n/a	<0.08	0.5
BOD	n/a	<2	5
pH	**	8.1	6.0-9.0
Suspended Solids	n/a	4	15
Temperature °C	on-site	20	25
Orthophosphate as P	**	<0.33	1

Concentrations expressed in mg/l (ppm) unless otherwise stated.

\*\* = INAB Accredited Tests    ++ = Subcontracted Tests    n/a = Non-INAB Accredited Tests

The above results relate only to the sample tested  
 This report should not be regenerated except in full and with the consent of T.E. Laboratories Ltd.

**Exceedances are highlighted in bold.**  
**MAC = Maximum Admissable Concentration.**  
**MRC = Minimum Required Concentration.**

# Mineral Oil result is based on analysis of cold extract with Hexane mixture as solvent.



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**CERTIFICATE OF ANALYSIS**

Page 1 of 3

<b>Project Description:</b>	Analysis of Aqueous Sample (Huntstown)		
<b>Attention:</b>	Mr. Colin Doyle Mr. Leonard Grogan	<b>Lab ID:</b>	131502
<b>Company:</b>	Roadstone Belgard,	<b>Date Sampled:</b>	11/08/2016
<b>Address:</b>	Fortunestown Road, Belgard, Tallaght, Dublin 24.		
<b>Certificate No:</b>	L/16/1531	<b>Date Rec'd:</b>	12/08/2016
<b>Issue Date:</b>	24/08/2016	<b>Our Ref:</b>	WS-41599

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**Project Summary:** One sample was analysed for a range of determinands. Please see page 2 for results. Terms & Conditions and methods used are outlined in the attached appendix.

**No. of Pages:** Results page 2 plus 4 page appendix

Peter O'Byrne  
Quality Manager

Ms Breda Moore  
Technical Manager



### ANALYSIS OF AQUEOUS SAMPLES.

Date Sampled: 11/08/2016  
 Date Rec'd: 12/08/2016  
 Date Analysis Commenced: 12/08/2016  
 Our Ref. :WS-41599  
 Certificate No. L/16/1531

Determinand	Sample ID Lab ID	Discharge 131502	MAC Values
Ammoniacal Nitrogen	n/a	0.08	0.5
BOD	n/a	<2	5
pH	**	8.0	6.0-9.0
Suspended Solids	n/a	<1	15
Temperature °C	on-site	17	25
Orthophosphate as P	**	<0.33	1

Concentrations expressed in mg/l (ppm) unless otherwise stated.

\*\* = INAB Accredited Tests    ++ = Subcontracted Tests    n/a = Non-INAB Accredited Tests

The above results relate only to the sample tested

This report should not be regenerated except in full and with the consent of T.E. Laboratories Ltd.

**Exceedances are highlighted in bold.**

**MAC = Maximum Admissible Concentration.**

**MRC = Minimum Required Concentration.**





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**CERTIFICATE OF ANALYSIS**

Page 1 of 3

<b>Project Description:</b>	Analysis of Aqueous Sample (Huntstown)		
<b>Attention:</b>	Mr. Colin Doyle Mr. Leonard Grogan B Maguire	<b>Lab ID:</b>	131583 - 131585
<b>Company:</b>	Roadstone Belgard,	<b>Date Sampled:</b>	18/08/2016
<b>Address:</b>	Fortunestown Road, Belgard, Tallaght, Dublin 24.	<b>Date Rec'd:</b>	19/08/2016
<b>Certificate No:</b>	L/16/1565	<b>Our Ref:</b>	WS41635 & 16-76488
<b>Issue Date:</b>	05/09/2016		

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**Project Summary:** Three samples were analysed for a range of determinands. Please see page 2-3 for results. Terms & Conditions and methods used are outlined in the attached appendix.

**No. of Pages:** Results page 2-3 plus 4 page appendix

Peter O'Byrne  
Quality Manager

Ms Breda Moore  
Technical Manager



### ANALYSIS OF AQUEOUS SAMPLES.

Date Sampled: 18/08/2016  
 Date Rec'd: 19/08/2016  
 Date Analysis Commenced: 19/08/2016  
 Our Ref. : WS-41635 & 16-76488  
 Certificate No. L/16/1565

Determinand	Sample ID Lab ID	W4 (epa split) 131583	MAC Values
Ammoniacal Nitrogen	n/a	<0.08	0.5
BOD	n/a	<2	5
COD	n/a	8	-
pH	**	7.7	6.0-9.0
Suspended Solids	n/a	1	15
Temperature °C	on-site	19	25
Orthophosphate as P	*	<0.33	1

Concentrations expressed in mg/l (ppm) unless otherwise stated.

\*\* = INAB Accredited Tests    ++ = Subcontracted Tests    n/a = Non-INAB Accredited Tests

The above results relate only to the sample tested

This report should not be regenerated except in full and with the consent of T.E. Laboratories Ltd.

**Exceedances are highlighted in bold.**

**MAC = Maximum Admissible Concentration.**

**MRC = Minimum Required Concentration.**

# Mineral Oil result is based on analysis of cold extract with Hexane mixture as solvent.



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**CERTIFICATE OF ANALYSIS**

Page 1 of 4

**Project Description:**

Analysis of Aqueous Sample (Huntstown)

**Attention:**

Mr. Colin Doyle  
Mr. Leonard Grogan  
B Maguire

**Lab ID:**

131711 - 131717

**Company:**

Roadstone Belgard,  
Fortunestown Road,  
Belgard,  
Tallaght,  
Dublin 24.

**Date Sampled:**

29/08/2016

**Address:**

**Certificate No:**

L/16/1627

**Date Rec'd:**

29/08/2016

**Issue Date:**

13/09/2016

**Our Ref:**

WS-41695 & 16-77221

**Project Summary:**

Seven samples were analysed for a range of determinands.  
Please see page 2-4 for results. Terms & Conditions and methods  
used are outlined in the attached appendix.

**No. of Pages:**

Results page 2-4 plus 4 page appendix

Peter O'Byrne  
Quality Manager

Ms Breda Moore  
Technical Manager



### ANALYSIS OF AQUEOUS SAMPLES.

Date Sampled: 29/08/2016  
 Date Rec'd: 29/08/2016  
 Date Analysis Commenced: 30/08/2016  
 Our Ref. :WS-41695 & 16-77221  
 Certificate No. L/16/1627

Determinand	Sample ID	W4	MAC
	Lab ID	131741	Values
Ammoniacal Nitrogen	n/a	<0.08	0.5
BOD	n/a	<2	5
pH	**	7.6	6.0-9.0
Suspended Solids	n/a	<1	15
Temperature °C	on-site	19	25
Orthophosphate as P	**	<0.33	1

Concentrations expressed in mg/l (ppm) unless otherwise stated.

\*\* = INAB Accredited Tests    ++ = Subcontracted Tests    n/a = Non-INAB Accredited Tests

The above results relate only to the sample tested

This report should not be regenerated except in full and with the consent of T.E. Laboratories Ltd.

**Exceedances are highlighted in bold.**

**MAC = Maximum Admissible Concentration.**

**MRC = Minimum Required Concentration.**

# Mineral Oil result is based on analysis of cold extract with Hexane mixture as solvent.

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**CERTIFICATE OF ANALYSIS**

Page 1 of 2

<b>Project Description:</b>	Analysis of Aqueous Sample (Huntstown)		
<b>Attention:</b>	Mr. Colin Doyle Mr. Leonard Grogan	<b>Lab ID:</b>	131984
<b>Company:</b>	Roadstone Belgard,	<b>Date Sampled:</b>	08/09/2016
<b>Address:</b>	Fortunestown Road, Belgard, Tallaght, Dublin 24.		
<b>Certificate No:</b>	L/16/1693	<b>Date Rec'd:</b>	09/09/2016
<b>Issue Date:</b>	07/10/2016	<b>Our Ref:</b>	WS-41763

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**Project Summary:** One sample was analysed for a range of determinands. Please see page 2 for results. Terms & Conditions and methods used are outlined in the attached appendix.

**No. of Pages:** Results page 2 plus 4 page appendix

Peter O'Byrne  
Quality Manager

Ms Breda Moore  
Technical Manager



### ANALYSIS OF AQUEOUS SAMPLES.

Date Sampled: 08/09/2016  
 Date Rec'd: 09/09/2016  
 Date Analysis Commenced: 09/09/2016  
 Our Ref. :WS-41763  
 Certificate No. L/16/1693

Determinand	Sample ID	W4	MAC
	Lab ID	131984	Values
Ammoniacal Nitrogen	n/a	<0.08	0.5
BOD	n/a	<2	5
pH	**	7.6	6.0-9.0
Suspended Solids	n/a	<1	15
Temperature °C	on-site	17	25
Orthophosphate as P	*	<0.33	1

Concentrations expressed in mg/l (ppm) unless otherwise stated.

\*\* = INAB Accredited Tests    ++ = Subcontracted Tests    n/a = Non-INAB Accredited Tests

The above results relate only to the sample tested

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**Exceedances are highlighted in bold.**

**MAC = Maximum Admissable Concentration.**

**MRC = Minimum Required Concentration.**



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**CERTIFICATE OF ANALYSIS**

Page 1 of 2

<b>Project Description:</b>	Analysis of Aqueous Sample (Huntstown)		
<b>Attention:</b>	Mr. Colin Doyle Mr. Leonard Grogan	<b>Lab ID:</b>	132158
<b>Company:</b>	Roadstone Belgard,	<b>Date Sampled:</b>	15/09/2016
<b>Address:</b>	Fortunestown Road, Belgard, Tallaght, Dublin 24.		
<b>Certificate No:</b>	L/16/1743	<b>Date Rec'd:</b>	16/09/2016
<b>Issue Date:</b>	10/10/2016	<b>Our Ref:</b>	WS-41814

**Project Summary:** One sample was analysed for a range of determinands. Please see page 2 for results. Terms & Conditions and methods used are outlined in the attached appendix.

**No. of Pages:** Results page 2 plus 4 page appendix

Peter O'Byrne  
Quality Manager

Ms Breda Moore  
Technical Manager



### ANALYSIS OF AQUEOUS SAMPLES.

Date Sampled: 15/09/2016  
 Date Rec'd: 16/09/2016  
 Date Analysis Commenced: 16/09/2016  
 Our Ref. :WS-41814  
 Certificate No. L/16/1743

Determinand	Sample ID	W4	MAC
	Lab ID	132158	Values
Ammoniacal Nitrogen	n/a	0.08	0.5
BOD	n/a	<2	5
pH	**	7.9	6.0-9.0
Suspended Solids	n/a	5	15
Temperature °C	on-site	17	25
Orthophosphate as P	**	<0.33	1

Concentrations expressed in mg/l (ppm) unless otherwise stated.

\*\* = INAB Accredited Tests    ++ = Subcontracted Tests    n/a = Non-INAB Accredited Tests

The above results relate only to the sample tested

This report should not be regenerated except in full and with the consent of T.E. Laboratories Ltd.

**Exceedances are highlighted in bold.**

**MAC = Maximum Admissible Concentration.**

**MRC = Minimum Required Concentration.**



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**CERTIFICATE OF ANALYSIS**

Page 1 of 2

<b>Project Description:</b>	Analysis of Aqueous Sample (Huntstown)		
<b>Attention:</b>	Mr. Colin Doyle Mr. Leonard Grogan	<b>Lab ID:</b>	132341
<b>Company:</b>	Roadstone Belgard,	<b>Date Sampled:</b>	22/09/2016
<b>Address:</b>	Fortunestown Road, Belgard, Tallaght, Dublin 24.		
<b>Certificate No:</b>	L/16/1805	<b>Date Rec'd:</b>	23/09/2016
<b>Issue Date:</b>	10/10/2016	<b>Our Ref:</b>	WS-41877

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**Project Summary:** One sample was analysed for a range of determinands. Please see page 2 for results. Terms & Conditions and methods used are outlined in the attached appendix.

**No. of Pages:** Results page 2 plus 4 page appendix

Peter O'Byrne  
Quality Manager

Ms Breda Moore  
Technical Manager



### ANALYSIS OF AQUEOUS SAMPLES.

Date Sampled: 22/09/2016  
 Date Rec'd: 23/09/2016  
 Date Analysis Commenced: 23/09/2016  
 Our Ref. :WS-41877  
 Certificate No. L/16/1805

Determinand	Sample ID Lab ID	W4 132347	MAC Values
Ammoniacal Nitrogen	n/a	0.08	0.5
BOD	n/a	<2	5
pH	**	7.8	6.0-9.0
Suspended Solids	n/a	2	15
Temperature °C	on-site	12	25
Orthophosphate as P	**	<0.33	1

Concentrations expressed in mg/l (ppm) unless otherwise stated.

\*\* = INAB Accredited Tests    ++ = Subcontracted Tests    n/a = Non-INAB Accredited Tests

The above results relate only to the sample tested

This report should not be regenerated except in full and with the consent of T.E. Laboratories Ltd.

**Exceedances are highlighted in bold.**

**MAC = Maximum Admissible Concentration.**

**MRC = Minimum Required Concentration.**



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**CERTIFICATE OF ANALYSIS**

Page 1 of 5

<b>Project Description:</b>	Analysis of Aqueous Sample (Huntstown)		
<b>Attention:</b>	Mr. Colin Doyle Mr. Leonard Grogan	<b>Lab ID:</b>	132456 - 132464
<b>Company:</b>	Roadstone Belgard, Fortunestown Road, Belgard, Tallaght, Dublin 24.	<b>Date Sampled:</b>	29/09/2016
<b>Address:</b>		<b>Date Rec'd:</b>	29/09/2016
<b>Certificate No:</b>	L/16/1848	<b>Our Ref:</b>	WS-41916 & 16-80149 & 16-82388
<b>Issue Date:</b>	04/11/2016		

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**Project Summary:** Nine samples were analysed for a range of determinands. Please see page 2-5 for results. Terms & Conditions and methods used are outlined in the attached appendix.

**No. of Pages:** Results page 2-5 plus 4 page appendix

Peter O'Byrne  
Quality Manager

Ms Breda Moore  
Technical Manager



### ANALYSIS OF AQUEOUS SAMPLES.

Date Sampled: 29/09/2016

Date Rec'd: 29/09/2016

Date Analysis Commenced: 30/09/2016

Our Ref. : WS-41916 & 16-80149 & 16-82388

Certificate No. L/16/1848

Determinand	Sample ID	W4	MAC
	Lab ID	132456	Values
Ammoniacal Nitrogen	n/a	<0.08	0.5
BOD	n/a	<2	5
pH (pH units)	**	7.8	6.0-9.0
Suspended Solids	n/a	3	15
Temperature °C	on-site	14	25
Orthophosphate as P	++	<0.33 (Note 1)	1

Concentrations expressed in mg/l (ppm) unless otherwise stated.

\*\* = INAB Accredited Tests    ++ = Subcontracted Tests    n/a = Non-INAB Accredited Tests

The above results relate only to the sample tested

This report should not be regenerated except in full and with the consent of T.E. Laboratories Ltd.

**Exceedances are highlighted in bold.**

**MAC = Maximum Admissible Concentration.**

**MRC = Minimum Required Concentration.**

# Mineral Oil result is based on analysis of cold extract with Hexane mixture as solvent.

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Phone: 059-9152881 Fax: 059-9152886



**CERTIFICATE OF ANALYSIS**

Page 1 of 2

<b>Project Description:</b>	Analysis of Aqueous Sample (Huntstown)		
<b>Attention:</b>	Mr. Colin Doyle Mr. Leonard Grogan	<b>Lab ID:</b>	132791
<b>Company:</b>	Roadstone Belgard,	<b>Date Sampled:</b>	13/10/2016
<b>Address:</b>	Fortunestown Road, Belgard, Tallaght, Dublin 24.		
<b>Certificate No:</b>	L/16/1941	<b>Date Rec'd:</b>	14/10/2016
<b>Issue Date:</b>	15/11/2016	<b>Our Ref:</b>	WS-42012 & 16-83365

**Project Summary:** One sample was analysed for a range of determinands. Please see page 2 for results. Terms & Conditions and methods used are outlined in the attached appendix.

**No. of Pages:** Results page 2 plus 4 page appendix

Peter O'Byrne  
Quality Manager

Ms Breda Moore  
Technical Manager



### ANALYSIS OF AQUEOUS SAMPLES.

Date Sampled: 13/10/2016  
 Date Rec'd: 14/10/2016  
 Date Analysis Commenced: 14/10/2016  
 Our Ref. : WS-42012 & 16-83365  
 Certificate No. L/16/1941

Determinand	Sample ID	W4	MAC
	Lab ID	132791	Values
Ammoniacal Nitrogen	n/a	<b>0.08</b>	0.5
BOD	n/a	<2	5
pH (ph Units)	**	7.9	6.0-9.0
Suspended Solids	n/a	8	15
Temperature °C	on-site	11	25
Orthophosphate as P (Note1)	++	<0.01	1

Concentrations expressed in mg/l (ppm) unless otherwise stated.

Note 1: Subcontracted due to instrument breakdown.

\*\* = INAB Accredited Tests    ++ = Subcontracted Tests    n/a = Non-INAB Accredited Tests

The above results relate only to the sample tested  
 This report should not be regenerated except in full and with the consent of T.E. Laboratories Ltd.

**Exceedances are highlighted in bold.**  
**MAC = Maximum Admissable Concentration.**  
**MRC = Minimum Required Concentration.**

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**CERTIFICATE OF ANALYSIS**

Page 1 of 2

<b>Project Description:</b>	Analysis of Aqueous Sample (Huntstown)		
<b>Attention:</b>	Mr. Colin Doyle Mr. Leonard Grogan	<b>Lab ID:</b>	132927
<b>Company:</b>	Roadstone Belgard, Fortunestown Road, Belgard, Tallaght, Dublin 24.	<b>Date Sampled:</b>	19/10/201
<b>Address:</b>		<b>Date Rec'd:</b>	20/10/2016
<b>Certificate No:</b>	L/16/1982	<b>Our Ref:</b>	WS-42052 & 16-83365
<b>Issue Date:</b>	16/11/2016		

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**Project Summary:** One sample was analysed for a range of determinands. Please see page 2 for results. Terms & Conditions and methods used are outlined in the attached appendix.

**No. of Pages:** Results page 2 plus 4 page appendix

Peter O'Byrne  
Quality Manager

Ms Breda Moore  
Technical Manager



### ANALYSIS OF AQUEOUS SAMPLES.

Date Sampled: 19/10/2016  
 Date Rec'd: 20/10/2016  
 Date Analysis Commenced: 20/10/2016  
 Our Ref. : WS-42052 & 16-83365  
 Certificate No. L/16/1982

Determinand	Sample ID	W4	MAC Values
	Lab ID	732927	
Ammoniacal Nitrogen	n/a	<0.08	0.5
BOD	n/a	<2	5
pH (pH Units)	**	7.8	6.0-9.0
Suspended Solids	n/a	2	15
Temperature °C	on-site	10	25
Orthophosphate as P (Note1)	++	<0.01	1

Concentrations expressed in mg/l (ppm) unless otherwise stated.

Note1: Subcontracted due to instrument breakdown.

\*\* = INAB Accredited Tests    ++ = Subcontracted Tests    n/a = Non-INAB Accredited Tests

The above results relate only to the sample tested

This report should not be regenerated except in full and with the consent of T.E. Laboratories Ltd.

**Exceedances are highlighted in bold.**

**MAC = Maximum Admissible Concentration.**

**MRC = Minimum Required Concentration.**



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**CERTIFICATE OF ANALYSIS**

Page 1 of 5

<b>Project Description:</b>	Analysis of Aqueous Sample (Huntstown)		
<b>Attention:</b>	Mr. Colin Doyle Mr. Leonard Grogan Mr. B McGuire	<b>Lab ID:</b>	132980 - 132987
<b>Company:</b>	Roadstone Belgard,	<b>Date Sampled:</b>	24/10/2016
<b>Address:</b>	Fortunestown Road, Belgard, Tallaght, Dublin 24.	<b>Date Rec'd:</b>	24/10/2016
<b>Certificate No:</b>	L/16/2004	<b>Our Ref:</b>	WS-42074 & 16-83365 & 16-82267
<b>Issue Date:</b>	16/11/2016		

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**Project Summary:** Eight samples were analysed for a range of determinands. Please see page 2-5 for results. Terms & Conditions and methods used are outlined in the attached appendix.

**No. of Pages:** Results page 2-5 plus 4 page appendix

Peter O'Byrne  
Quality Manager

Ms Breda Moore  
Technical Manager



### ANALYSIS OF AQUEOUS SAMPLES.

Date Sampled: 24/10/2016  
 Date Rec'd : 24/10/2016  
 Date Analysis Commenced: 24/10/2016  
 Our Ref. : WS-42074 & 16-83365 & 16-82267  
 Certificate No. L/16/2004

Determinand	Sample ID Lab ID	W4 132980	MAC Values
Ammoniacal Nitrogen	n/a	<0.08	<0.5
BOD	n/a	<2	<5
Cadmium #	**	<0.03	-
Copper #	**	<0.05	-
Dissolved Solids	n/a	533	-
Diesel Range Organics ##	++	0.019	-
Iron #	**	<0.05	-
Lead #	**	<0.20	-
Magnesium (Note 1)	++	8	-
Manganese #	**	<0.03	-
Nickel #	**	<0.10	-
pH (pH Units)	**	7.8	6-9
Orthophosphate as P (Note 1)	++	0.03	0.5
PRO	++	0.0083	-
Suspended Solids	n/a	3	<15
Temperature °C	on-site	12	<25°C
TPH ##	++	0.019	-
Zinc #	**	0.01	-

Concentrations are expressed as mg/l (ppm)  
 unless otherwise specified.

## TPH and DRO result is based on analysis of cold extract with DCM as solvent.

Note1: Subcontracted due to instrument breakdown.

\*\* = INAB Accredited Tests    ++ = Subcontracted Tests    n/a = Non-INAB Accredited Tests



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**CERTIFICATE OF ANALYSIS**

Page 1 of 2

<b>Project Description:</b>	Analysis of Aqueous Sample (Huntstown)		
<b>Attention:</b>	Mr. Colin Doyle Mr. Leonard Grogan	<b>Lab ID:</b>	133144
<b>Company:</b>	Roadstone Belgard,	<b>Date Sampled:</b>	03/11/2016
<b>Address:</b>	Fortunestown Road, Belgard, Tallaght, Dublin 24.		
<b>Certificate No:</b>	L/16/2049	<b>Date Rec'd:</b>	04/11/2016
<b>Issue Date:</b>	18/11/2016	<b>Our Ref:</b>	WS-42115

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**Project Summary:** One sample was analysed for a range of determinands. Please see page 2 for results. Terms & Conditions and methods used are outlined in the attached appendix.

**No. of Pages:** Results page 2 plus 4 page appendix

Peter O'Byrne  
Quality Manager

Ms Breda Moore  
Technical Manager



### ANALYSIS OF AQUEOUS SAMPLES.

Date Sampled: 03/11/2016  
 Date Rec'd: 04/11/2016  
 Date Analysis Commenced: 04/11/2016  
 Our Ref. :WS-42115  
 Certificate No. L/16/2049

Determinand	Sample ID Lab ID	W4 133144	MAC Values
Ammoniacal Nitrogen	n/a	<b>&lt;0.08</b>	0.5
BOD	n/a	<b>&lt;2</b>	5
pH	**	8.0	6.0-9.0
Suspended Solids	n/a	7	15
Temperature °C	on-site	11	25
Orthophosphate as P	**	<b>&lt;0.33</b>	1

Concentrations expressed in mg/l (ppm) unless otherwise stated.

\*\* = INAB Accredited Tests    ++ = Subcontracted Tests    n/a = Non-INAB Accredited Tests

The above results relate only to the sample tested

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**Exceedances are highlighted in bold.**

**MAC = Maximum Admissable Concentration.**

**MRC = Minimum Required Concentration.**

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Page 1 of 2

<b>Project Description:</b>	Analysis of Aqueous Sample (Huntstown)		
<b>Attention:</b>	Mr. Colin Doyle Mr. Leonard Grogan	<b>Lab ID:</b>	133317
<b>Company:</b>	Roadstone Belgard,	<b>Date Sampled:</b>	10/11/2016
<b>Address:</b>	Fortunestown Road, Belgard, Tallaght, Dublin 24.		
<b>Certificate No:</b>	L/16/2089	<b>Date Rec'd:</b>	11/11/2016
<b>Issue Date:</b>	18/11/2016	<b>Our Ref:</b>	WS-42156

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**Project Summary:** One sample was analysed for a range of determinands. Please see page 2 for results. Terms & Conditions and methods used are outlined in the attached appendix.

**No. of Pages:** Results page 2 plus 4 page appendix

Peter O'Byrne  
Quality Manager

Ms Breda Moore  
Technical Manager



### ANALYSIS OF AQUEOUS SAMPLES.

Date Sampled: 10/11/2016  
 Date Rec'd: 11/11/2016  
 Date Analysis Commenced: 11/11/2016  
 Our Ref. :WS-42156  
 Certificate No. L/16/2089

Determinand	Sample ID Lab ID	W4 133317	MAC Values
Ammoniacal Nitrogen	n/a	<b>&lt;0.08</b>	0.5
BOD	n/a	<b>&lt;2</b>	5
pH	**	7.9	6.0-9.0
Suspended Solids	n/a	7	15
Temperature °C	on-site	8	25
Orthophosphate as P	**	<b>&lt;0.33</b>	1

Concentrations expressed in mg/l (ppm) unless otherwise stated.

\*\* = INAB Accredited Tests    ++ = Subcontracted Tests    n/a = Non-INAB Accredited Tests

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**MRC = Minimum Required Concentration.**

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Page 1 of 2

<b>Project Description:</b>	Analysis of Aqueous Sample (Huntstown)		
<b>Attention:</b>	Mr. Colin Doyle Mr. Leonard Grogan	<b>Lab ID:</b>	133465
<b>Company:</b>	Roadstone Belgard, Fortunestown Road, Belgard, Tallaght, Dublin 24.	<b>Date Sampled:</b>	17/11/2016
<b>Address:</b>		<b>Date Rec'd:</b>	18/11/2016
<b>Certificate No:</b>	L/16/2137	<b>Our Ref:</b>	WS-42204
<b>Issue Date:</b>	02/12/2016		

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**Project Summary:** One sample was analysed for a range of determinands. Please see page 2 for results. Terms & Conditions and methods used are outlined in the attached appendix.

**No. of Pages:** Results page 2 plus 4 page appendix

Peter O'Byrne  
Quality Manager

Ms Breda Moore  
Technical Manager



### ANALYSIS OF AQUEOUS SAMPLES.

Date Sampled: 17/11/2016  
 Date Rec'd: 18/11/2016  
 Date Analysis Commenced: 18/11/2016  
 Our Ref. :WS-42204  
 Certificate No. L/16/2137

	Sample ID	W4	MAC
Determinand	Lab ID	133465	Values
Ammoniacal Nitrogen	n/a	0.08	0.5
BOD	n/a	<2	5
pH ( pH Units )	**	7.6	6.0-9.0
Suspended Solids	n/a	<b>27</b>	15
Temperature °C	on-site	7	25
Orthophosphate as P	**	<0.33	1

Concentrations expressed in mg/l (ppm) unless otherwise stated.

\*\* = INAB Accredited Tests    ++ = Subcontracted Tests    n/a = Non-INAB Accredited Tests

The above results relate only to the sample tested

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**MRC = Minimum Required Concentration.**



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Page 1 of 2

<b>Project Description:</b>	Analysis of Aqueous Sample (Huntstown)		
<b>Attention:</b>	Mr. Colin Doyle Mr. Leonard Grogan	<b>Lab ID:</b>	133609
<b>Company:</b>	Roadstone Belgard, Fortunestown Road, Belgard, Tallaght, Dublin 24.	<b>Date Sampled:</b>	24/11/2016
<b>Address:</b>		<b>Date Rec'd:</b>	25/11/2016
<b>Certificate No:</b>	L/16/2187	<b>Our Ref:</b>	WS-42249
<b>Issue Date:</b>	12/12/2016		

**Project Summary:** One sample was analysed for a range of determinands. Please see page 2 for results. Terms & Conditions and methods used are outlined in the attached appendix.

**No. of Pages:** Results page 2 plus 4 page appendix

Peter O'Byrne  
Quality Manager

Ms Breda Moore  
Technical Manager



### ANALYSIS OF AQUEOUS SAMPLES.

Date Sampled: 24/11/2016  
 Date Rec'd: 25/11/2016  
 Date Analysis Commenced: 25/11/2016  
 Our Ref. :WS-42249  
 Certificate No. L/16/2187

Determinand	Sample ID	W4	MAC
	Lab ID	133609	Values
Ammoniacal Nitrogen	n/a	≤0.08	0.5
BOD	n/a	<2	5
pH	**	7.7	6.0-9.0
Suspended Solids	n/a	3	15
Temperature °C	on-site	not recorded	25
Orthophosphate as P	**	<0.33	1

Concentrations expressed in mg/l (ppm) unless otherwise stated.

\*\* = INAB Accredited Tests    ++ = Subcontracted Tests    n/a = Non-INAB Accredited Tests

The above results relate only to the sample tested

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**Exceedances are highlighted in bold.**

**MAC = Maximum Admissible Concentration.**

**MRC = Minimum Required Concentration.**



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Page 1 of 4

<b>Project Description:</b>	Analysis of Aqueous Sample (Huntstown)		
<b>Attention:</b>	Mr. Colin Doyle Mr. Leonard Grogan Mr. B McGuire	<b>Lab ID:</b>	133744 - 133750
<b>Company:</b>	Roadstone Belgard,	<b>Date Sampled:</b>	29/11/2016
<b>Address:</b>	Fortunestown Road, Belgard, Tallaght, Dublin 24.		
<b>Certificate No:</b>	L/16/2213	<b>Date Rec'd:</b>	30/11/2016
<b>Issue Date:</b>	23/12/2016	<b>Our Ref:</b>	WS-42275 & 16-85671

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**Project Summary:** Seven samples were analysed for a range of determinands. Please see page 2-4 for results. Terms & Conditions and methods used are outlined in the attached appendix.

**No. of Pages:** Results page 2-4 plus 4 page appendix

Peter O'Byrne  
Quality Manager

Ms Breda Moore  
Technical Manager



### ANALYSIS OF AQUEOUS SAMPLES.

Date Sampled: 29/11/2016  
 Date Rec'd : 30/11/2016  
 Date Analysis Commenced: 30/11/2016  
 Our Ref. : WS-42275 & 16-85671  
 Certificate No. L/16/2213

Determinand	Sample ID	W4	MAC Values
	Lab ID	133744	
Ammoniacal Nitrogen	n/a	<0.08	<0.5
BOD	n/a	<2	<5
pH (pH Units)	**	7.7	6-9
Orthophosphate as P	++	<0.33	0.5
Suspended Solids	n/a	2	<15
Temperature °C	On-site	5	<25°C

Concentrations are expressed as mg/l (ppm)  
 unless otherwise specified.

\*\* = INAB Accredited Tests    ++ = Subcontracted Tests    n/a = Non-INAB Accredited Tests

The above results relate only to the sample tested  
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 Exceedences are highlighted in bold



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Page 1 of 2

<b>Project Description:</b>	Analysis of Aqueous Sample (Huntstown)		
<b>Attention:</b>	Mr. Cormac McCarthy Mr. Leonard Grogan Mr. B McGuire	<b>Lab ID:</b>	133954
<b>Company:</b>	Roadstone Belgard,	<b>Date Sampled:</b>	07/12/2016
<b>Address:</b>	Fortunestown Road, Belgard, Tallaght, Dublin 24.	<b>Date Rec'd:</b>	08/12/2016
<b>Certificate No:</b>	L/16/2274	<b>Our Ref:</b>	WS-42338 & 17-88738
<b>Issue Date:</b>	20/01/2017		

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**Project Summary:** One sample was analysed for a range of determinands. Please see page 2 for results. Terms & Conditions and methods used are outlined in the attached appendix.

**No. of Pages:** Results page 2 plus 4 page appendix

Peter O'Byrne  
Quality Manager

Ms Breda Moore  
Technical Manager



### ANALYSIS OF AQUEOUS SAMPLES.

Date Sampled: 07/12/2016  
 Date Rec'd: 08/12/2016  
 Date Analysis Commenced: 08/12/2016  
 Our Ref. : WS-42338 & 17-88738  
 Certificate No. L/16/2274

Determinand	Sample ID	W4	MAC Values
	Lab ID	133954	
Ammoniacal Nitrogen	n/a	0.08	0.5
BOD	n/a	<2	5
pH (pH Units)	**	8.0	6.0-9.0
Suspended Solids	n/a	5	15
Temperature °C	on-site	10	25
Orthophosphate as P	++	<0.01 ( note 1 )	1

Concentrations expressed in mg/l (ppm) unless otherwise stated.

\*\* = INAB Accredited Tests    ++ = Subcontracted Tests    n/a = Non-INAB Accredited Tests

Note 1: Subcontracted due to instrument breakdown.

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**Exceedances are highlighted in bold.**  
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**MRC = Minimum Required Concentration.**



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**CERTIFICATE OF ANALYSIS**

Page 1 of 2

**Project Description:** Analysis of Aqueous Sample (Huntstown)

**Attention:** Mr. Cormac McCarthy      **Lab ID:** 134146  
Mr. Leonard Grogan  
Mr. B McGuire

**Company:** Roadstone Belgard,      **Date Sampled:** 15/12/2016  
**Address:** Fortunestown Road,  
Belgard,  
Tallaght,  
Dublin 24.

**Certificate No:** L/16/2339      **Date Rec'd:** 16/12/2016

**Issue Date:** 23/01/2017      **Our Ref:** WS-42404 & 17-88738

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**Project Summary:** One sample was analysed for a range of determinands. Please see page 2 for results. Terms & Conditions and methods used are outlined in the attached appendix.

**No. of Pages:** Results page 2 plus 4 page appendix

Peter O'Byrne  
Quality Manager

Ms Breda Moore  
Technical Manager



### ANALYSIS OF AQUEOUS SAMPLES.

Date Sampled: 15/12/2016  
 Date Rec'd: 16/12/2016  
 Date Analysis Commenced: 16/12/2016  
 Our Ref. : WS-42404 & 17-88738  
 Certificate No. L/16/2339

Determinand	Sample ID	W4	MAC Values
	Lab ID	134146	
Ammoniacal Nitrogen	n/a	<b>0.08</b>	0.5
BOD	n/a	<b>&lt;2</b>	5
pH ( pH Units )	**	8.0	6.0-9.0
Suspended Solids	n/a	10	15
Temperature °C	on-site	7	25
Orthophosphate as P	++	<0.01 ( note 1 )	1

Concentrations expressed in mg/l (ppm) unless otherwise stated.

\*\* = INAB Accredited Tests    ++ = Subcontracted Tests    n/a = Non-INAB Accredited Tests

Note 1: Subcontracted due to instrument breakdown.

The above results relate only to the sample tested  
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**CERTIFICATE OF ANALYSIS**

Page 1 of 4

<b>Project Description:</b>	Analysis of Aqueous Sample (Huntstown)		
<b>Attention:</b>	Mr. Cormac McCarthy Mr. Leonard Grogan Mr. B McGuire	<b>Lab ID:</b>	134268 - 134274
<b>Company:</b>	Roadstone Belgard,	<b>Date Sampled:</b>	20/12/2016
<b>Address:</b>	Fortunestown Road, Belgard, Tallaght, Dublin 24.		
<b>Certificate No:</b>	L/16/2368	<b>Date Rec'd:</b>	20/12/2016
<b>Issue Date:</b>	01/02/2017	<b>Our Ref:</b>	WS-42433, 16-87515 & 17-89638

**Project Summary:** Seven samples were analysed for a range of determinands. Please see page 2-4 for results. Terms & Conditions and methods used are outlined in the attached appendix.

**No. of Pages:** Results page 2-4 plus 4 page appendix

Peter O'Byrne  
Quality Manager

Ms Breda Moore  
Technical Manager



**ANALYSIS OF AQUEOUS SAMPLES.**

Date Sampled: 20/12/2016  
 Date Rec'd : 20/12/2016  
 Date Analysis Commenced: 20/12/2016  
 Our Ref.: WS-42433, 16-87515 & 17-89638  
 Certificate No. L/16/2368

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Determinand	Sample ID	W4	MAC Values
	Lab ID	134268	
Ammoniacal Nitrogen	n/a	<0.08	<0.5
BOD	n/a	<2	<5
pH (pH Units)		8.0	6-9
Orthophosphate as P (Note 1)	++	<0.01	0.5
Suspended Solids	n/a	9	<15
Temperature °C	on-site	5	<25°C

Note 1: Subcontracted due to instrument breakdown

Concentrations are expressed as mg/l (ppm) unless otherwise specified.

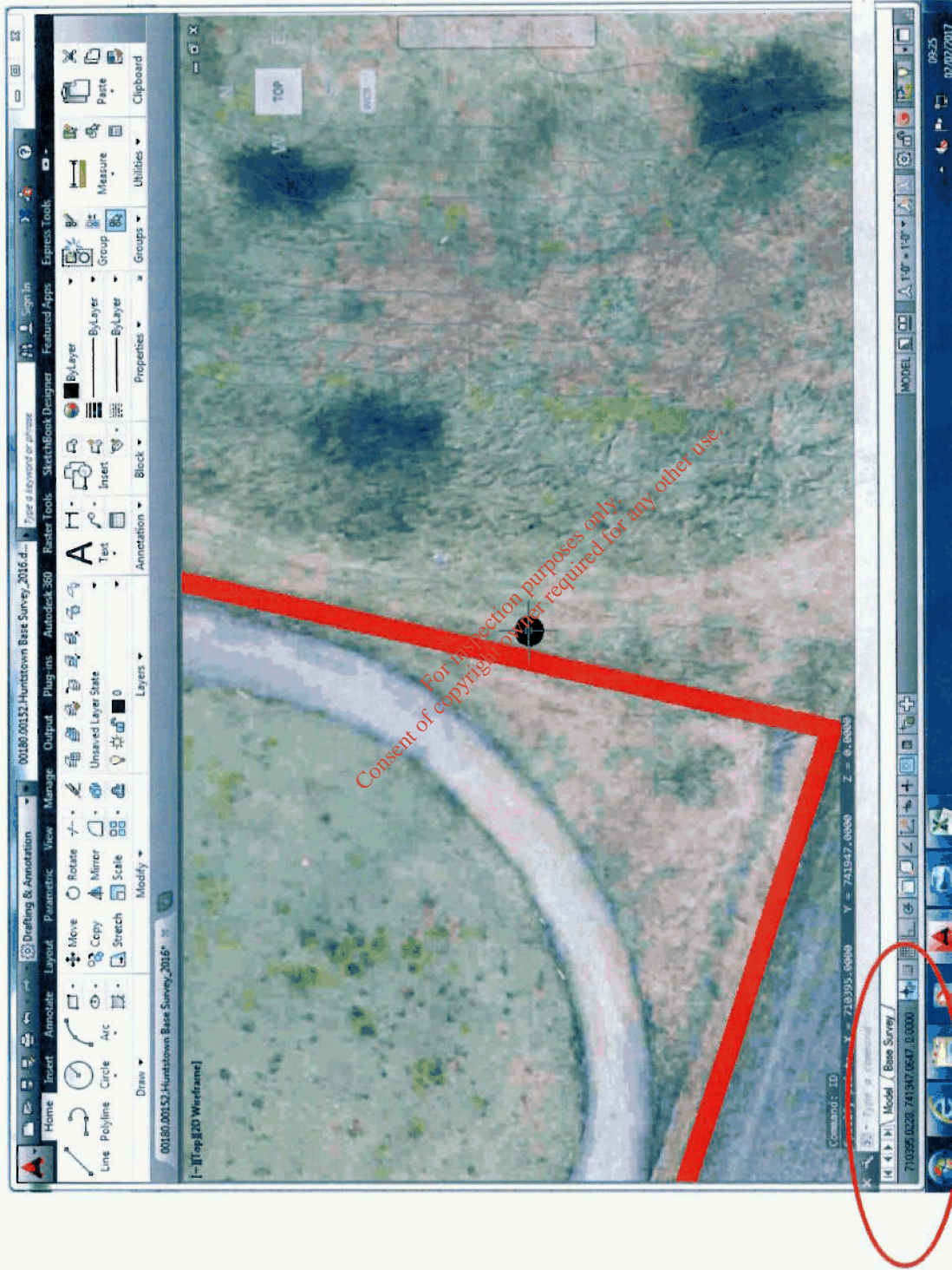
\*\* = INAB Accredited Tests    ++ = Subcontracted Tests    n/a = Non-INAB Accredited Tests

**ATTACHMENT B**

**LOCATION OF GROUNDWATER WELL GW4**

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Screen Grab from AutoCAD showing Location of GW4 (on ortho-rectified ITM grid referenced aerial photograph obtained from drone survey)  
Co-ordinates circled in red at base of screen.

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Location of GW4 - Immediately inside Roadstone Boundary (neighbouring property to west / left of photo)

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