BIS
BUSINESS IMPROVEMENT SECTION

Health and Environmental Services Department

Review of the Scientific Unit Staffing Requirements

Environmental Health Service

November 2008

04/010/08/125

Contents

1. Introduction and Background

1.1 Purpose and Business case for this review

This review is set within the context of the introduction of more onerous environmental monitoring requirements at the Dargan Road Landfill Site/North Foreshore and at Duncrue Industrial Estate.

New European legislation, along with increased environmental responsibilities and demands from the Northern Ireland Environment Agency (NIEA) (previously known as the Environment Heritage Service, DOE), have, over the last number of months, greatly increased the demands on the Scientific Unit in terms of volume and complexity of work. The unit provides the Waste Management Service and Development Department with environmental monitoring at Dargan Road Landfill Site/North Foreshore and also monitors and controls landfill gas at Duncrue Industrial Estate for the Asset Management Unit, Core Improvement Department.

The terms of reference for this review were agreed by the Head of Environmental Health and the Environmental Health Manager (Environmental Protection). The main objectives of this review are to produce a report to ascertain the appropriate staffing requirements within the Scientific Unit, roles and responsibilities, and grading of the posts. BIS must take into consideration the increased workload resulting from the development of the North Foreshore, Dargan Road Landfill Site, increased monitoring of the Duncrue Industrial Estate and the impact of new licensing legislation and regulations imposed on the council.

On 26 June 2008 the council's Vetting Panel approved the request for the Business Improvement Section (BIS) to undertake a structural review of the Scientific Unit.

1.2 Background information

The Scientific Unit was established in the late 1980s to provide expertise, specialist scientific services and advice to Environmental Health staff. Over time

the unit's remit evolved to providing scientific assistance, advice and services to other council departments including the environmental monitoring at Dargan Road Landfill Site/North Foreshore and monitoring and controlling landfill gas at Duncrue Industrial Estate. This unit originally consisted of 3 posts. This was increased by a further two posts in a review conducted by BIS in 2003 when the unit took on the responsibility for environmental monitoring at the landfill and North Foreshore.

Resulting from the closure of the landfill on 31 March 2007, its subsequent capping and reinstatement and the continued development of the North Foreshore, the Scientific Unit has experienced an increase in both volume and complexity of work. This has led to operational difficulties and increased pressure on staff to ensure high standards of service delivery are met and that conditions set out within the Waste Management Licence for Dargan Road Landfill Site are met. These increasing demands are in addition to existing work regimes which include:-

- Extensive gas, groundwater, leachate, surface water and marine water monitoring programmes at Dargan Road Landfill Site, North Foreshore and its environs;
- Management and control of the landfill gas system in the Duncrue Industrial Estate – this currently includes the monitoring and control of gas levels within 100 plus industrial units;
- The provision of scientific assistance and support to the staff within the wider Environmental Health Service.

1.3 Methodology - Research and consultation undertaken

A multi method research approach was utilised to gather relevant information to inform the review. Following initiation meetings with the Environmental Health Manager (Environmental Protection) and the Scientific Unit Manager BIS developed a Project Initiation/Terms of Reference agreement.

Further research was conducted to establish the extent of the increased workloads and responsibilities on the Scientific Unit. This research included the following:-

- Additional meetings with the Environmental Health Manager (Environmental Protection) and the Scientific Unit Manager to gather all appropriate information to assist in our analysis.
- Discussions were held with the appropriate senior managers from the Development and Core Improvement Departments, and a meeting with senior management from Waste Management was held to glean additional information regarding the increasing demands on the Scientific Unit and to investigate the level of commitment from these parties to continue with and, where necessary, increase the funding provided within existing service level agreements with the Scientific Unit. A list of all those consulted is included in Appendix i.
- The new Waste Management Site Licence for Dargan Road Landfill was reviewed to establish the new monitoring requirements from the Northern Ireland Environment Agency.
- Previous BIS reports on the Scientific Unit were reviewed along with information obtained from the Scientific Unit Manager to establish a baseline workload established for the 2003 Waste Management Site Licence and existing staffing levels.
- A benchmarking exercise was carried out with other local councils. These included Newcastle City Council, Glasgow City Council, Liverpool City Council, East Riding of Yorkshire Council and Fingal County Council.

The Human Resources Section and Trade Union Co-ordinators were consulted at an early point in the review to ensure that any likely issues could be captured and dealt with at an early stage.

1.4 Current situation

This section of the report will outline the current structure of the Scientific Unit and the roles and responsibilities of each post in relation to work carried out at the Dargan Road Landfill Site/North Foreshore and at the Duncrue Industrial Estate.

Current structure

The Scientific Unit operates within the Environmental Protection section of the Environmental Health Service. The current structure for the unit, shown as Appendix ii, was established in May 2003 following a staffing review completed by BIS. At this time a Scientific Officer (Landfill) post and Monitoring Assistant post were created to provide the Waste Management Service with monitoring support at the Dargan Road Landfill Site. Currently there are five permanent posts in the unit and one temporary student placement post.

Current staff responsibilities

The unit's staff and operations are currently managed on a day-to-day basis by the Scientific Unit Manager (Salary Scale PO4) who reports to the Environmental Health Manager (Environmental Protection). The main operational areas where these staff are employed are the Duncrue Industrial Estate, which is monitored on behalf of the Asset Management Unit, and the Dargan Road Landfill Site/North Foreshore, which is monitored on behalf of the Waste Management Service and Development Department.

The Scientific Unit Manager is responsible for programming and overseeing the work carried out in these main operational areas including any other areas of work undertaken by the unit. The Scientific Unit Manager is also responsible for the following tasks:-

- developing and delivering a programme of scientific activity for the department;
- undertaking investigations and providing scientific advice to the Director, Heads of Service and other senior managers;
- responsible for the Dargan Crescent Gas Control System

- pollution monitoring programmes for Dargan Road Landfill/Duncrue Industrial Estate and the surrounding area;
- to be responsible for the department's laboratory.

Monitoring at Duncrue Industrial Estate

The two posts that monitor and control gas at the Duncrue Industrial Estate are the Scientific Officer and the Technical Assistant. The Scientific Officer (Salary Scale SO1) reports to the Scientific Unit Manager and is responsible for the following:-

- conducting environmental monitoring programmes, surveys and investigations;
- calibrating, repairing and maintaining monitoring equipment;
- undertaking chemical and physical sample analysis on site and in the laboratory;
- monitoring the Duncrue Industrial Estate Gas Control Scheme.

The Technical Assistant (Salary Scale 5) reports to the Scientific Unit Manager through the Scientific Officer and is responsible for:-

- technical and administrative tasks to support the unit and Scientific Officer at the Industrial Estate;
- participating in student training.

Monitoring at the Dargan Road Landfill Site/North Foreshore

The two posts that carry out the environmental monitoring role at the Dargan Road Landfill Site / North Foreshore are the Scientific Officer (Landfill) (Salary Scale SO1) and the Monitoring Assistant (Salary Scale 4). The Scientific Officer (Landfill) reports to the Scientific Unit Manager and is responsible for the following:-

- undertaking chemical or physical sample analysis of water throughout the site;
- monitoring and adjusting gas extraction plant and extraction wells and ensuring the safe operation of the system;
- taking water dip levels of leachate and ground water boreholes;
- supervising allocated staff.

The Monitoring Assistant post reports to the Scientific Unit Manager through the Scientific Officer (Landfill) and is responsible for the following:-

- assisting with the onsite analysis of sample waters and collection, preparation and packing of these;
- assisting in the taking of water dip levels from leachate and ground water boreholes;
- assisting in the monitoring and adjustment of the gas extraction plant and collection wells.

It is anticipated that the workload on the Scientific Unit will increase as the Landfill Site/North Foreshore and the Gas Control System at Duncrue Industrial Estate are developed and as new, more stringent, legislation and environmental responsibilities are introduced. The Landfill Site/North Foreshore covers an area of approximately 320 acres, of which 84 acres are currently being capped following the closure of the landfill.

2. Analysis of Key Issues

This section of the report identifies the key findings and considerations from the research and consultation and presents an analysis of the main issues arising. These have been classified into the following main areas; Strategic Context and Corporate Responsibility, Operational Considerations, Structural and Staffing Considerations, Summary of Benchmarking Information and Future Considerations.

2.1 Strategic Context and Corporate Responsibility

The introduction of the new Waste Management Licence for the Landfill Site, under the Waste and Contaminated Land (NI) Order 1997, has increased the council's environmental liability and regulatory requirements. The conditions of the new licence are more onerous than the previous licence in relation to the levels of environmental monitoring.

To ensure the council meets these environmental liabilities and regulatory requirements the Scientific Unit must introduce increased monitoring programmes, environmental data production and interpretation of data trends, reporting internally and externally to consultants and regulatory bodies. It is anticipated that the Scientific Unit's responsibility for advising on preventative and remedial measures to control and eliminate risks on site will also increase as the site and North Foreshore is developed.

It is estimated that monitoring of the site will be a necessity for the next 30 – 40 years in order for the council to meet the regulatory requirements under the Waste and Contaminated Land (NI) Order 1997. Failure to meet the conditions of the landfill Waste Management Licence and regulatory requirements could result in large fines being imposed upon the council and a notice of closure being placed on the landfill site and North Foreshore prohibiting any further development until remedial actions are introduced.

It is within this context and in line with the Corporate Plan 2008-2011 that this review is required to ensure that the Scientific Unit has the appropriate levels of staff to provide professional services that ensure the council can meet new licensing legislation and regulations at the Dargan Road Landfill Site, North Foreshore and Duncrue Industrial Estate.

Environmental monitoring and development of the landfill, the North Foreshore and its environs and the Duncrue Industrial Estate will assist the council to meet some of its corporate objectives, values and strategic themes. For example, the environmental monitoring undertaken shows the council is committed to taking better care of Belfast's environment to provide a cleaner, greener, healthier city now and for the future.

The council is also currently involved in the construction of an electricity generating plant on the North Foreshore that will be fuelled by landfill gas. This highlights the council's commitment to act sustainably through the effective and efficient use of resources.

Perception of the Scientific Unit

Consultation with senior managers within the Waste Management Service, Development Department and the Asset Management Unit has identified the advantages and strengths of the council providing its own internal specialists to carry out the monitoring programmes and additional areas of work as mentioned above.

It was stated that the officers within the Scientific Unit have the specialist knowledge and skills required to undertake the work; they have extensive knowledge of the landfills and Duncrue Industrial Estate's history. Due to the nature of the monitoring requirements at these locations it is important for the council to ensure that consistency in monitoring is maintained. It was the opinion of these officers that the Scientific Unit was best placed to provide these services and that this would be the most economic option for the council.

Examples provided of areas where the Scientific Unit staff's involvement has greatly benefited the council include the following:

- input of advice to external consultants when drafting the Environmental Risk Assessment for the North Foreshore development;
- input when consultants were designing and extending the gas control system at the landfill and North Foreshore to ensure the energy generation platform receives a constant supply of gas;
- in the design and monitoring regime of the new gas control system at Duncrue Industrial Estate;
- consulting with the NIEA to sort out problems, for example, the unit produced an improved leachate monitoring regime; this was submitted through the Waste Management Service to the NIEA as an alternative to the council having to build a leachate capture and treatment plant at considerable cost.

In a report taken to the Development Committee, 16 January 2008, by the Director of Development, it was ratified that management of the gas field will be retained by the council to ensure the highest safety standards. This set out the level of commitment that Development Department have in the continued use of the Scientific Unit to manage the council's gas field.

2.2 Operational Considerations

The Duncrue Industrial Estate is of significant importance to the council as lettings from the 100 plus units generates in excess of **£1 million per annum**. The council, in the late 1980's, installed the existing gas control system as the ground in the estate settled water collected in the pipe work reducing effective operation of the system. The council is currently updating this system by introducing a new series of vertical wells, pipe work and manifolds.

Since the closure of the landfill in March 2007 the volume and scope of work for the Scientific Unit has increased significantly. This has been due to the following:-

- Ongoing development of the North Foreshore;

- The closure, capping and reinstatement of Dargan Road Landfill Site and the development of waste transfer and treatment facilities on the site;
- The installation of extensive landfill gas extraction and emission control systems at Dargan Road;
- Ongoing development of the Gas Control System at Duncrue Industrial Estate;
- Increased environmental liability and regulatory requirements associated with the new draft Waste Management Licence for the closure of the landfill site, and new environmental legislation.

As the landfill and North Foreshore has been developed the gas collection management system has been extended into the developed areas. Scientific Unit staff have been involved in providing advice and assistance in the design of the gas field and in the drafting of an Environmental Risk Assessment for the development of the North Foreshore.

As indicated in section 2.1 the council is currently constructing an electricity generation plant at the North Foreshore that will be fuelled by gas from the gas field. It is anticipated that the electricity generation plant will become operational in April 2009 and at this time the gas wells supplying the plant will require more frequent monitoring and adjustment to provide a constant quality and quantity of gas.

In the Deloitte Report, Landfill Gas Electricity Generation Options Assessment, December 2007, a value for money assessment of the bids from contractors estimated that over a 20 year period the profit for Belfast City Council from electricity generation would be approximately £28.7 million **(£1.44 million per annum).**

As the gas collection system has been extended, additional gas wells have been installed for the monitoring of gas and additional boreholes have been installed for the monitoring of leachate and ground waters. The Scientific Unit, in association with Waste Management, have developed a “Site Restoration and Aftercare Plan” detailing how the site capping and restoration will be managed.

This included a detailed environmental monitoring plan for the site to include gas, leachate, ground water, surface water, marine water and air quality monitoring. Pollutant emission control and trigger values have been set for the site and it is the council's responsibility to ensure parameters are monitored, that any parameters exceeded are reported to the NIEA and that remedial action is taken to minimise risk to the environment and to human health.

Working Patterns and Overtime Levels

Staff within the unit work 37 hours during normal hours and have the opportunity to work flexible hours. The unit operates an out of hour's stand-by rota on a voluntary basis to provide cover for problems or breakdown of the gas extraction system / gas flaring units and associated generators.

Standby and overtime payments for the unit in 2007/08 totalled approximately £4,700, this was mainly paid in relation to the out of hour's rota and it is unlikely that any change to staffing levels with in the unit will have an impact upon this.

Monitoring at the Duncrue Industrial Estate

At this Estate the Scientific Unit staff manages the gas system and also monitor the inside of industrial units for gas. The posts monitor approximately 60 gas wells and 100 plus industrial units. Guidance drawn up with the council's retained consultants ERM suggest the gas wells be monitored every two months and industrial units monitored on a weekly, monthly or quarterly basis depending upon the level of risk determined for the building.

The council is liable for controlling the landfill gas on the estate. The council must ensure the control of landfill gas and the safety of buildings on both sites to discharge its duties effectively under the Health and safety at Work (NI) order 1978. This has been highlighted in health and safety terms and also in reputation terms through this work being identification significant in the council's risk register.

It is anticipated that in time this system may be linked with the gas collection system in the Landfill Site and North Foreshore but in the meantime staff must manage the new system through the calibration and balancing of the wells and flaring off the gas.

The Environmental Health Manager (Environmental Protection) and Scientific Unit Manager both have estimated there will be some additional workload on staff from an increase adjusting and balancing the new system and from flaring off the gas. It is not anticipated at present that the increased workload will justify the creation of additional staff.

Monitoring at the Dargan Road Landfill Site and North Foreshore

a. Landfill gas monitoring

In 2003 it was proposed for the Site Monitoring Plan for Dargan Road Landfill Site that monitoring of approximately 110 gas wells would be done on a monthly basis. It was found that this level of monitoring was extremely difficult with the staffing resources at that time. In addition to the 110 gas wells on site a further 15 perimeter site wells and 3 manifolds had to be monitored.

In practice, the Scientific Unit monitored all gas wells and manifolds every two to three months, but now that the site is closed and is being capped and reinstated the NIEA are imposing new licensing conditions on the council and a Gas Management Plan has been drawn up which will include the monitoring of all wells on a monthly basis.

As the site has been reinstated and capping continued, along with the development of the site, for example, the construction of a Waste Transfer Station and further development of the North Foreshore, the number of gas wells to be monitored on a monthly basis has increased to 223 gas wells, 15 perimeter site wells and 3 manifolds. An additional 12 gas control wells have also been installed at the new Waste Transfer Station.

The Scientific Unit staff at the landfill also monitor and manage 3 gas flaring units and associated generators; some assistance with this work was given previously by an external technician from the consulting firm Taggarts before his retirement two years ago.

In addition to this increased level of monitoring the new site licence now requires the council to report gas levels and any breach of trigger levels within 42 days of the monitoring period, the 2003 site monitoring plan did not require the monitoring levels to be passed on to the NIEA. This represents a large increase in the data handling and reporting workload on the Scientific Units staff.
At present gas collected on the landfill site and North Foreshore is flared off to comply with health and safety and environmental requirements, but once the electricity generation plant becomes operational (April 2009) monitoring staff must manage the flow and quality of gas to the plant. This will require a greater level of onsite balancing and adjusting of gas flow than was required for the flaring of gas.

For energy generation it is anticipated that all gas wells will need to be monitored on a fortnightly basis for an initial commissioning period until the supply and flow of gas is stabilised. This may require the employment of additional temporary agency staff to carry out the increased monitoring over this period.

b. Leachate and ground water monitoring

Also contained in the 2003 site monitoring plan was the monitoring and sampling of leachate and ground water. This consisted of the monthly manual water level monitoring of leachate and ground water at 45 locations. Water quality samples were also taken at these 45 locations on a quarterly basis. In addition to this surface water samples were taken at six locations on a monthly basis and water levels at data loggers installed on site were monitored monthly at 16 locations. Results obtained from the monitoring and sampling of leachate and ground water were reported to the NIEA within one year of the monitoring period.

At present, as the landfill site is capped and reinstated and new licensing conditions are imposed the council has had to increase the number of locations

where the monthly manual water levels of leachate and ground water are monitored from 45 to 64.

Water quality samples must now be taken quarterly at these 64 locations, but in addition to this water quality must be monitored at all surface water and marine water locations on a monthly basis. This will represent a large increase in the amount of data handled by the Scientific Unit staff. Up to 259 parameters will be monitored at water monitoring locations on a quarterly basis, 10 parameters must be monitored monthly (see Appendix iii).

This represents 67,000 individual water parameters per annum that must be checked by the Scientific Officer (Landfill), and these along with trends and breaches of trigger levels must be reported to the NIEA within 42 days of the monitoring period.

Additional areas of work undertaken by the Scientific Unit

In addition to the aforementioned increases in gas, leachate, ground water, surface water and marine water monitoring and sampling, the Scientific Unit is also involved in new monitoring regimes. These include:-

- Recording of rainfall data at the landfill site;
- Monitoring capping materials brought onto the landfill site for contamination;
- Monitoring of gas at the Waste Transfer Station and providing clearance for operations to resume following any gas build-ups at the station;
- Monitoring of water quality at 'discharge consent' locations at Dargan Road Landfill, Vehicle Wash Tanks, Waste Transfer Station, Interceptor tanks at recycling centres.

2.3 Structural and Staffing Considerations

Having considered the levels of increased workload and increased operational responsibilities on the Scientific Unit as detailed in the above analysis of operations it is recommended that an additional Scientific Officer (Landfill) post is

created. It is also recommended that the revised structure for the Scientific Unit is adopted (see Appendix iv).

This additional resource will help to ensure that the Scientific Unit is best placed to fulfil the requirements of the site monitoring plan for the landfill. The availability of an additional post on-site will ensure that safe working practices are adhered to at all times (two members of staff must work together as a team when monitoring at the landfill). An additional Scientific Officer (Landfill) post will also enable the monitoring to be continued on-site while the other Scientific Officer (Landfill) post carries out the data analysis, handling and reporting requirements of the post.

As mentioned in section 2.1 failure to meet the conditions and regulatory requirements of the landfills Waste Management Licence could result in large fines being imposed upon the council and a notice of closure being placed on the landfill site and North Foreshore prohibiting any further development until remedial actions are introduced.

Enhanced Roles and Responsibilities

Scientific Officer (Landfill)

This post was also created in the BIS Review of the Scientific Unit, 2003. The main purpose of this post was to be responsible for carrying out ground water, marine water, leachate and landfill gas monitoring programmes for Dargan Road Landfill.

In addition to the monitoring workload on this post increasing significantly this post has received additional responsibilities. These include the following:-

- interpreting scientific data and reports, liaising with and advise external agencies, developers, consultants and government departments regarding the improvement of environmental monitoring;
- preparing comprehensive, scientific reports and consultation briefs as required;

- ensuring the monitoring programme is planned and managed effectively, to ensure the safety of building on the Landfill/North Foreshore;
- ensuring the safe use of the gas extraction system at the Landfill/North Foreshore;
- investigating complaints regarding pollution, preparing reports and attending court as necessary.

An assessment of these increased levels of responsibility has been undertaken using the GLPC job evaluation scheme and it is recommended that the post of Scientific Officer (Landfill) is re-graded from Salary Scale SO1 to Salary Scale SO2, at an additional cost of £4,662 per annum (cost for two posts). It is also recommended that the revised job description for the Scientific Officer (Landfill) is adopted (see Appendix v).

Monitoring Assistant

This post was created in a review of the Scientific Unit undertaken by BIS in 2003. Due to operational difficulties and health and safety issues associated with working on a landfill this post was created to assist the Scientific Officer (Landfill). This post was responsible for driving a vehicle on site, assisting with the sampling of leachate and ground waters and monitoring the gas collection system.

This post is currently vacant and it is management's perception that, due to the salary scale of the post, it has been difficult to retain postholders once they have gained experience.

As set out earlier in this report, since the inception of this post, the amount of monitoring required on the landfill site and North Foreshore has grown considerably and the amount of sampling has also increased. Rather than solely assisting the Scientific Officer (Landfill) the Monitoring Assistant has had to take on the responsibility for collection of samples and monitoring of parameters. The Monitoring Assistant has assisted in managing the gas flaring units and associated generators and in the absence of the Scientific Officer (Landfill) has taken on the full responsibility for doing these duties. These additional

responsibilities have been assessed using the GLPC job evaluation scheme and it is recommended that the Monitoring Assistant post is re-graded from Salary Scale 4 to Salary Scale 5, at a cost of £2,363 per annum. It is also recommended that the revised job description for the Monitoring Assistant is adopted (see Appendix vi).

Scientific Officer (Duncrue Industrial Estate)

This post's main area of responsibility is the monitoring of the Duncrue Industrial Estate gas control system including all buildings on the estate. This post also provides cover for the Scientific Officer (Landfill) post as required and is expected to be fully knowledgeable of the landfills monitoring programme and waste management site licence conditions.

Additional responsibilities for this post include:-

- ensuring the monitoring programme at Duncrue Industrial Estate is planned and managed effectively;
- making decisions to ensure the safety of buildings and the gas extraction system;
- investigating complaints regarding pollution, preparing reports and attending court as necessary;
- preparing comprehensive, scientific reports and consultation briefs as required.

An assessment of the increased levels of responsibility on this post has been undertaken using the GLPC job evaluation scheme and it is recommended that the post of Scientific Officer is re-graded from Salary Scale SO1 to Salary Scale SO2, at an additional cost of £2,831 per annum). It is also recommended that the revised job description for this post is adopted (see Appendix vii). The additional cost associated with the re-grading of the Scientific Officer post carrying out monitoring duties at the Duncrue Industrial Estate will be met from an increase to the monetary value of the service level agreement with the Asset Management Unit.

2.4 Summary of Benchmarking Information

As mentioned in section 1.3 a benchmarking exercise was carried out with other local councils. These included Newcastle City Council, Glasgow City Council, Liverpool City Council, East Riding of Yorkshire Council, and Fingal County Council. This benchmarking focused on their monitoring regimes in relation to gas wells and leachate, ground water, surface water and marine water (if appropriate) and the staffing levels and grades of those involved in the monitoring. Detailed benchmarking data is included as Appendix viii.
It was found that the benchmarked authorities operated landfill sites in rural, urban and shore locations. The sites ranged from small 3 acre sites to 210 acres. Glasgow City Council and Fingal County Council used both council staff and outsourced contractors to monitor their landfill sites, Newcastle City Council used council monitoring staff only and Liverpool City Council used outsourced contractors exclusively.

Newcastle City Council monitor gas wells only and were the only authority to provide grades for their staff involved in their monitoring regime. They had two posts at salary scale SO2 and two at Salary scale SC6, which is very similar to Belfast.

2.5 Future Considerations

It is anticipated that future developments at the landfill site such as Composting facilities and a proposed Combined Heat and Power (CHP) facility will further increase the workload on the Scientific Unit.

Any discharge from these facilities will have to be monitored along with air quality monitoring, bio-aerosol and compost monitoring. With all new developments on the landfill site and North Foreshore the Scientific Unit will be expected to provide advice on preventative and remedial measures to ensure all controls are in place to reduce the risks from the landfill on buildings, human health and the local environment.

Monitoring of the site will be a necessity for the next 30 – 40 years in order for the council to meet the regulatory requirements under the Waste and Contaminated Land (NI) Order 1997.

Taking into consideration the growing environmental liability and compliance responsibilities on the council emanating from new legislation and regulations, we can only assume that these will continue to become more onerous in the future. If there are changes to environmental legislations, regulations and liabilities on the council this should be reviewed at an appropriate time to ensure the Scientific Unit has the appropriate staffing levels to meet operational requirements.

It is recommended that BIS review the effectiveness of the recommendations made in this report after an appropriate timescale.

3. Recommendations

These recommendations are based on the objective analysis of the information gathered and issues raised in the consultation, along with a consideration of the benchmarking data and research conducted. It is recommended that the following recommendations are adopted: -

- That an additional post of Scientific Officer (Landfill) is created - *see 2.3 Structural and Staffing Considerations*
- That the post of Scientific Officer (Landfill) is re-graded from Salary Scale SO1 to Salary Scale SO2, at an additional cost of £4,662 per annum (cost for two posts) – *see 2.3 Structural and Staffing Considerations*
- That the revised job description for the Scientific Officer (Landfill) is adopted – *see 2.3 Structural and Staffing Considerations*
- That the Monitoring Assistant post is re-graded from Salary Scale 4 to Salary Scale 5, at a cost of £2,363 per annum – *see 2.3 Structural and Staffing Considerations*
- That the revised job description for the Monitoring Assistant is adopted – *see 2.3 Structural and Staffing Considerations*
- That the post of Scientific Officer is re-graded from Salary Scale SO1 to Salary Scale SO2, at an additional cost of £2,831 per annum) – *see 2.3 Structural and Staffing Considerations*
- That the revised job description for the Scientific Officer post is adopted - *see 2.3 Structural and Staffing Considerations*
- That the revised structure for the Scientific Unit is adopted – *see 2.3 Structural and Staffing Considerations*
- That BIS evaluate the effectiveness of the recommendations made in this report after an appropriate timescale – *see 2.5 Future Considerations*

4. Financial Implications

The financial implications of the recommendations as outlined in section 3 of this report are summarised as follows:

Estimated Costs (using 2007/08 salary scales + estimated 2.5% increase for 2008/09)		
Creation of 1 additional Scientific Officer (Landfill) post & re-grading (2 posts)	(SO1 to SO2)	**£30,615**
Re-grading of Monitoring Assistant post	(Sc4 to Sc5)	**£2,363**
Re-grading of Scientific Officer - 1 post	(SO1 to SO2)	**£2,331**
Total Estimated Costs		**£35,309***

*The monitoring costs for the landfill site, including the £32,978 of cost relating to the additional Scientific Officer (landfill) post and the re-grading of this post together with the Monitoring Assistant post, will be met from the Council's Dargan Road Landfill closure fund.

The additional cost of £2,331associated with the re-grading of the Scientific Officer post carrying out monitoring duties at the Duncrue Industrial Estate will be met from an increase to the monetary value of the service level agreement with the Asset Management Unit.

As mention earlier in the report it is estimated that over a 20 year period the profit for Belfast City Council from electricity generation would be approximately £28.7 million **(£1.44 million per annum).** The gas wells supplying the electricity generation plant will require more frequent monitoring and adjustment to provide a constant flow of gas and this, along with new environmental liabilities and legislation at the landfill/ North Foreshore has led to the additional costs above.

Also, the Duncrue Industrial Estate is of significant importance to the council as lettings from the 100 plus units generates in excess of **£1 million per annum.**

In assessing these financial implications it must be considered that:-

- Failure to meet the conditions of the landfill Waste Management Licence and regulatory requirements could result in large fines being imposed upon the council and a notice of closure being placed on the landfill site and North Foreshore prohibiting any further development until remedial actions are introduced.
- Failure to monitor and control the landfill gas system and manage the associated risks at Duncrue Industrial Estate would impact on the council meeting its obligations under the Waste and Contaminated Land Act (1997). This could impact on the council's lettings income at the estate which is currently in excess of £1 million.

5 HR Implications

It is anticipated that the recommendations set out in this report will result in no contractual changes and there will be no HR Issues to be considered. The Environmental Health Service will liaise with HR to arrange the necessary recruitment exercises.

6 Next Steps

Outlined below are the next steps to be undertaken by the Service for the proposed recommendations:

- Report to be presented to Vetting Panel/Committee for approval;
- Report presented to Council where necessary;
- Undertake recruitment of Scientific Officer (Landfill) and Monitoring Assistant posts;
- Undertake induction of new post holders;
- BIS will provide support as requested to assist in the implementation of the recommendations.

BIS would like to thank the staff within the Health and Environmental Services department and all stakeholders involved in consultations for their contribution and willingness to provide information in relation to this review to ensure its successful completion.

Appendix i – List of Staff Consulted

Environmental Health Services- Health & Environmental Services Department

Head of Environmental Health

Environmental Health Manager (Environmental Protection)

Scientific Unit Manager

Waste Management Service- Health & Environmental Services Department

Head of Waste Management

Waste Manager (Education, Contracts & Operations)

Waste Manager (Landfill)

Directorate - Health & Environmental Services Department

Business Support Manager

Asset Management Unit – Core Improvement Department

Estates Manager

Economic Initiatives – Development Department

North Foreshore Manager

Human Resources

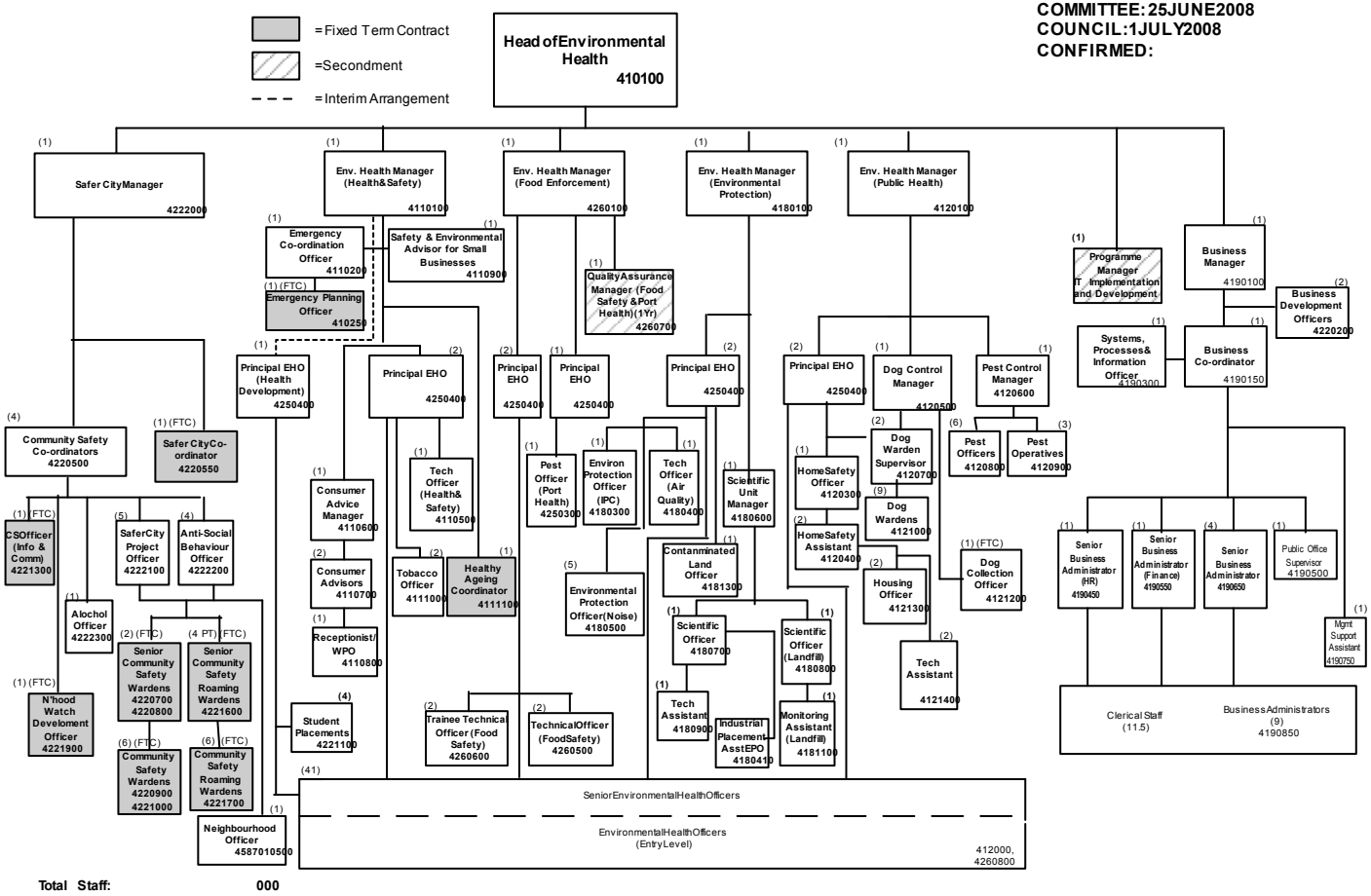
Trade Union Co-ordinator

Human Resources Advisor

Appendix ii – Current Scientific Unit Structure

HEALTH & ENVIRONMENTAL SERVICES DEPARTMENT - ENVIRONMENTAL HEALTH SERVICES

STATUS:CURRENT
PROJECTNO:
COMMITTEE:25JUNE2008
COUNCIL:1JULY2008
CONFIRMED:



Appendix iii – Monitoring Parameters

Parameters Monitored in the Waters and Mud	
Borehole ID	1,1-Dichloroethane (DSB) µg/kg
Sector	2,2-Dichloropropane (DSB) µg/kg
Sample Date	cis-12-Dichloroethene DSB µg/kg
Water Level (m, TOC)	Bromochloromethane (DSB) µg/kg
pH	Chloroform (DSB) µg/kg
Temperature (^{0}C)	1,1,1-Trichloroethane DSB µg/kg
Redox / eh (mv)	1,1-Dichloropropene (DSB) µg/kg
Conductivity µS/cm	Carbon tetrachloride(DSB) µg/kg
Oxygen (Dissolved) mg/l	Benzene (DSB) µg/kg
BOD (total+ATU) mg/l	1,2-Dichloroethane (DSB)µg/kg
COD (Total) mg/l	Trichloroethene (DSB) µg/kg
Alkalinity (total) mg/l as CaCO3	1,2-Dichloropropane (DSB) µg/kg
Nitrogen Ammoniacal Results	Dibromomethane (DSB) µg/kg
Nitrogen Ammoniacal mg/l N	Bromodichloromethane(DSB) µg/kg
Total Oxidised Nitrogen Results	cis-1,3-Dichloropropene µg/kg
Total Oxidised Nitrogen mg/l N	Toluene (DSB) µg/kg
Chloride mg/l	trans-1,3-Dichloropropene µg/kg
Sulphate mg/l	1,1,2-Trichloroethane DSB µg/kg
Cyanide (total) mg/l	Tetrachlorethene (DSB) µg/kg
Sulphide (dissolved) mg/l S	1,3-Dichloropropane (DSB) µg/kg
Phenols (Total) mg/l	Dibromochloromethane(DSB) µg/kg
Total Organic Carbon mg/l	1,2-Dibromoethane (DSB) µg/kg
Cadmium mg/l	Chlorobenzene (DSB) µg/kg
Chromium mg/l	1112-Tetrachloroethane (DSB) µg/kg
Lead mg/l	Ethyl benzene (DSB) µg/kg
Copper mg/l	m,p-Xylene (DSB) µg/kg
Nickel mg/l	o-Xylene (DSB) µg/kg
Zinc mg/l	Styrene (DSB) µg/kg
Iron mg/l	Bromoform (DSB) µg/kg
Manganese mg/l	Isopropylbenzene (DSB) µg/kg
Potassium mg/l	Bromobenzene (DSB) µg/kg
Sodium mg/l	123-Trichloropropane(DSB) µg/kg
Calcium mg/l	1122-Tetrachloroethane (DSB) µg/kg
Magnesium mg/l	n-Propylbenzene (DSB) µg/kg
Arsenic mg/l	2-Chlorotoluene (DSB) µg/kg
Mercury mg/l	4-Chlorotoluene (DSB) µg/kg
Total Solids %	135-Trimethylbenzene(DSB) µg/kg
Nickel (DSB) mg/kg	tert-Butylbenzene (DSB) µg/kg
Arsenic (DSB) mg/kg	124-Trimethylbenzene(DSB) µg/kg
Cadmium (DSB) mg/kg	sec-Butylbenzene (DSB) µg/kg
Chromium (DSB) mg/kg	1,3-Dichlorobenzene (DSB) µg/kg
Lead (DSB) mg/kg	1,4-Dichlorobenzene (DSB) µg/kg
Mercury (DSB) mg/kg	4-Isopropyltoluene (DSB) µg/kg
Copper (DSB) mg/kg	1,2-Dichlorobenzene (DSB) µg/kg
Zinc (DSB) mg/kg	n-Butylbenzene (DSB) µg/kg
Natural Mositure Content (%)	1,2-Dibromo3chloropropane µg/kg
Selenium Low Level (mg/l)	135-Trichlorobenzene(DSB) µg/kg
Fluoride (mg/l)	124-Trichlorobenzene(DSB) µg/kg

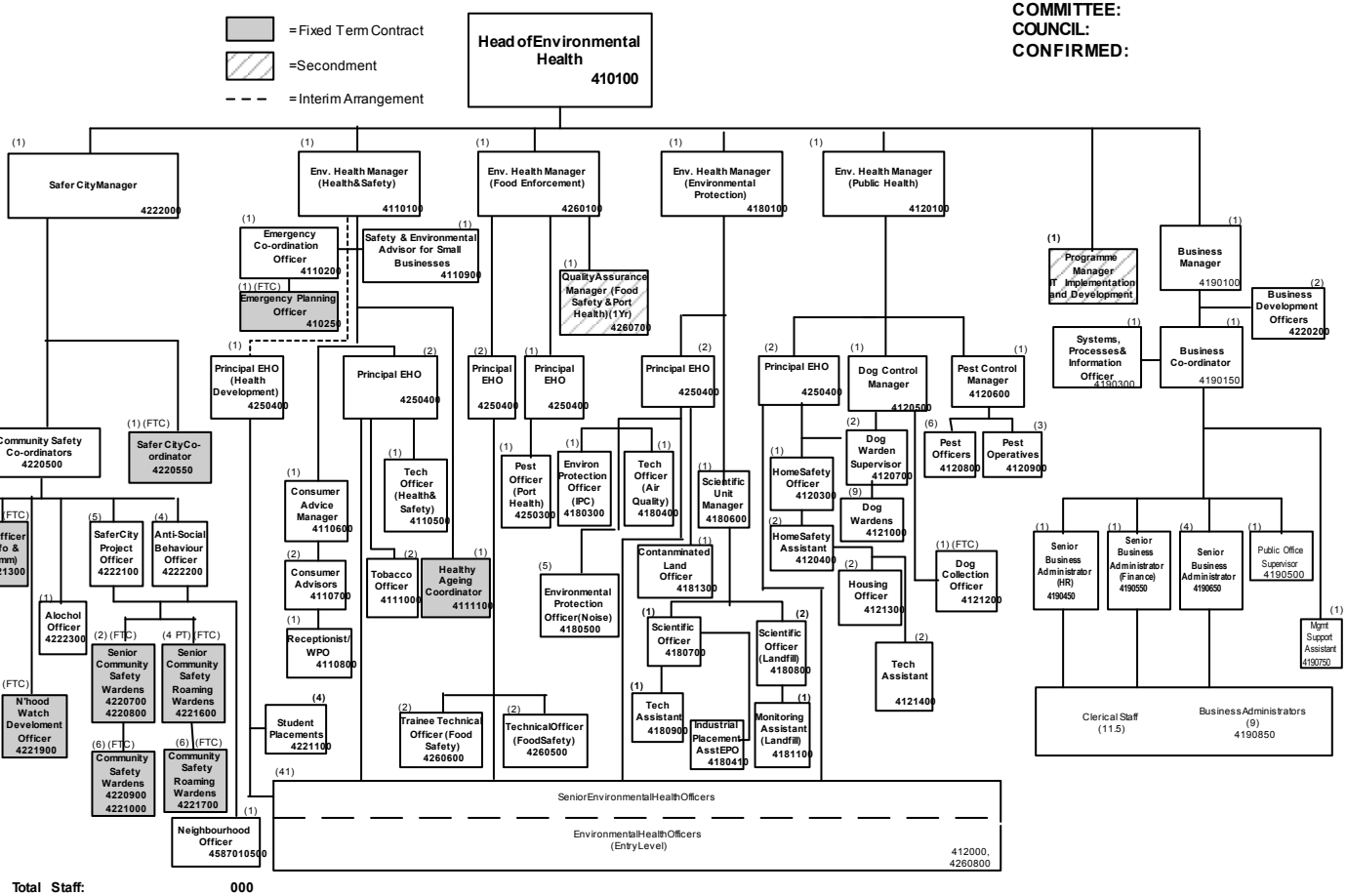
Nitrate as NO3 (mg/l)	Naphthalene (DSB) µg/kg
Nitrite as NO2 (mg/l)	Hexachloro-1,3-butadiene µg/kg
Ortho phosphate as PO4(mg/l)	123-Trichlorobenzene(DSB) µg/kg
Ortho phosphate as PO4 (mg/l)	Pentachlorophenol (DSB) µg/kg
pH (LAB)	HCH-alpha µg/l
Total Suspended Solids (mg/l)	HCH-gamma µg/l
Carbon Disulphate (ug/kg)	DDT-op (DSB) µg/kg
Total Phenols (mg/kg)	DDT-pp (DSB) µg/l
Iron (mg/kg)	HCH-beta (DSB) µg/l
Manganese (mg/kg)	HCH-alpha (DSB) µg/kg
Selenium (mg/kg)	HCH-gamma (DSB) µg/kg
Ionic Balance (%)	DDT-pp (DSB) µg/kg
Colour (hazen units)	PCB 28 (DSB) µg/kg
Dissolved Silver Low Level ug/l	PCB 52 (DSB) µg/kg
Dissolved antimony Low Level (mg/l)	PCB 101 (DSB) µg/kg
Dissolved Berylium Low Level (mg/l)	PCB 118 (DSB) µg/kg
Dissolved Barium Low Level (mg/l)	PCB 138 (DSB) µg/kg
Dissolved Boron Low Level (mg/l)	PCB 153 (DSB) µg/kg
Dissolved Cobolt Low Level (mg/l)	PCB 180 (DSB) µg/kg
Dissolved Tellurium Low Level (mg/l)	PCB 28 µg/l
Dissolved Thalium Low Level (mg/l)	PCB 52 µg/l
Dissolved Titanium Low Level (mg/l)	PCB 101 µg/l
Dissolved Uranium Low Level (mg/l)	PCB 118 µg/l
Dissolved Vanadium Low Level (mg/l)	PCB 153 µg/l
Pentachlorophenol µg/l	PCB 138 µg/l
1,1-Dichloroethene µg/l	PCB 180 µg/l
Dichloromethane µg/l	HCH-beta (DSB) µg/kg
trans-1,2-Dichloroethene µg/l	1,1 Dimethylethylbenzene
1,1-Dichloroethane µg/l	1-Methylethylbenzene
2,2-Dichloropropane µg/l	1-Methylpropylbenzene
cis-1,2-Dichloroethene µg/l	DDT-op ug/l
Bromochloromethane µg/l	HCH-beta ug/l
Chloroform µg/l	Natural Mositure Content (%)
1,1,1-Trichloroethane µg/l	Oils,Fats & Greases (Dissolved) (mg/kg)
1,1-Dichloropropene µg/l	Oils,Fats & Greases (Dissolved) (mg/l)
Carbon tetrachloride µg/l	Dichlorodifluoromethane (ug/kg)
Benzene µg/l	Chloromethane (ug/kg)
1,2-dichloroethane µg/l	Vinyl Chloride (ug/kg)
Trichloroethene µg/l	Total PCB (ug/kg)
1,2-Dichloropropane µg/l	Bromomethane (ug/kg)
Dibromomethane µg/l	Chloroethane (ug/kg)
Bromodichloromethane µg/l	Trichlorofluoromethane (ug/kg)
cis-1,3-Dichloropropene µg/l	Carbon Disulphate (ug/kg)
Toluene µg/l	Total Phenols (mg/kg)
trans-1,3-Dichloropropene µg/l	Diesel Range Organics (mg/kg)
1,1,2-trichloroethane µg/l	Mineral Oil (mg/kg)
Tetrachloroethene µg/l	PRO C5-C9 (ug/kg)
1,3-Dichloropropane µg/l	PRO C10-C12 (ug/kg)
Dibromochloromethane µg/l	Total Xylene (ug/kg)
1,2-dibromoethane µg/l	Methlythiomethane (ug/kg)
Chlorobenzene µg/l	Diesel Range Organics (mg/l)

1,1,1,2-Tetrachloroethane µg/l	Mineral Oil by GC (mg/l)
Ethyl benzene µg/l	DRO Interpretation
m,p-Xylene µg/l	Petrol Range Organics C5-C9 (mg/l)
o-Xylene µg/l	Petrol Range Organics C10-12 (mg/l)
Styrene µg/l	Benzene (mg/l)
Bromoform µg/l	Toluene (mg/l)
Isopropylbenzene µg/l	Ethylbenzene (mg/l)
Bromobenzene µg/l	Total Xylene (mg/l)
1,2,3-Trichloropropane µg/l	Dichlorvos (ug/l)
1,1,2,2-Tetrachloroethane µg/l	Mevinphos (ug/l)
n-Propylbenzene µg/l	Alpha-BHC (ug/l)
2-Chlorotoluene µg/l	beta-BHC (ug/l)
4-Chlorotoluene µg/l	gamma-BHC (Lindane) (ug/l)
1,3,5-Trimethylbenzene µg/l	Diazinon (ug/l)
tert-Butylbenzene µg/l	Methyl Parathion (ug/l)
1,2,4-Trimethylbenzene µg/l	Heptachlor (ug/l)
sec-Butylbenzene µg/l	Fenitrothion (ug/l)
1,3-Dichlorobenzene µg/l	Malathion (ug/l)
1,4-dichlorobenzene µg/l	Aldrin (ug/l)
4-Isopropyltoluene µg/l	Parathion (ug/l)
1,2-dichlorobenzene µg/l	Heptaxhlor epoxide (ug/l)
n-Butylbenzene µg/l	Endosulfan 1 (ug/l)
1,2-Dibromo3chloropropane µg/l	Dieldrin (ug/l)
1,3,5-Trichlorobenzene µg/l	Endrin (ug/l)
1,2,4-Trichlorobenzene µg/l	Ethion (ug/l)
Naphthalene µg/l	Endosulfan sulphate (ug/l)
Hexachloro-1,3-butadiene µg/l	Azinphos Methyl (ug/l)
1,2,3-Trichlorobenzene µg/l	p,p-Methoxychlor (ug/l)
1,1-Dichloroethene (DSB) µg/kg	p,p-'DDE
Dichloromethane (DSB) µg/kg	p,p-'DDD
trans-1,2-Dichloroethene µg/kg	

Appendix iv – Proposed Scientific Unit Structure

HEALTH & ENVIRONMENTAL SERVICES DEPARTMENT - ENVIRONMENTAL HEALTH SERVICES

STATUS:PROPOSED
PROJECTNO:04/010/08/125
COMMITTEE:
COUNCIL:
CONFIRMED:



Total Staff: **000**

Appendix v – Revised Scientific Officer (Landfill) Job Description

Job Description

Ref No: **Date:** 1 October 2008

Dept: HEALTH AND ENVIRONMENTAL SERVICES

Post No: 258(b)

Section: ENVIRONMENTAL HEALTH SERVICE

Job Title: **SCIENTIFIC OFFICER (LANDFILL)**

Grade: SO 2

Main Purpose of Job

Responsible to the Scientific Unit Manager for carrying out ground water, marine water, leachate and landfill gas monitoring programmes for Dargan Road Landfill Complex.

To ensure duties and tasks assigned to the post holder are performed in accordance with specified time and quality targets.

To make an effective contribution to the development and achievement of the Unit's objectives.

To carry out interpretive analysis on scientific data, operate and maintain monitoring equipment and to make an effective contribution to the development and achievement of effective, safe and efficient operational scientific services

Summary of Responsibilities and Personal Duties

1. To carry out environmental monitoring programmes, surveys and investigations in the Health and Environmental Services Department and meet targets as specified in the business plan and sampling programmes.

2. To undertake chemical or physical sample analysis of water samples obtained throughout the site and to prepare and package samples for transportation for laboratory analysis.

3. To take manual water dip levels from leachate and ground water boreholes.

4. To download monitoring data from water level data loggers installed on and around the site.

5. To monitor and adjust the gas extraction plant and gas extraction wells to ensure safe and efficient operation of the landfill gas extraction system.

6. To compile data and prepare and interpret reports including maintaining computer based records on monitoring programmes, surveys and site investigations carried out across the range of services provided in the scientific unit.

7. To interpret scientific data and reports and liaise with or advise external agencies/developers consultants/government departments regarding the improvement of environmental monitoring

8. To prepare comprehensive, scientific based reports and consultation briefs as required and be able to supervise the work of agency contractors/consultants and to enhance the lead approach by the Council in developing a safe and healthy city.

9. To carry out calibration, maintenance and repair of environmental monitoring equipment and data loggers as required in accordance with specified procedures.

10. To supervise or assist allocated staff and to provide training for Environmental Health staff in the use and application of monitoring equipment.

11. To provide advice on the selection of new monitoring equipment as required

12. To ensure the monitoring programme is planned and managed effectively, with timely decisions taken to ensure the safety of the use of buildings and the gas extraction system at the North Foreshore / Dargan Road Landfill site.

13. To investigate complaints regarding pollution and prepare reports on the findings and attend court to give evidence as necessary.

14. To undertake surveys, monitoring exercises and projects in relation to pollution control as required.

15. To undertake monitoring and investigative work outside normal working hours and participate in the Council's out of hour's noise service.

16. To deputise for the Scientific Unit Manager as required.

17. To provide cover for the Scientific Officer as required.

18. To keep informed of new developments relating to the field of responsibility.

19. To participate in the Departmental training programmes.

20. To participate as directed in the Council's selection interview procedures.

21. To undertake duties in such a way as to enhance and protect the reputation and public profile of Belfast City Council.

22. To undertake such other relevant duties as may from time to time.

Appendix vi – Revised Monitoring Assistant Job Description

Job Description

Ref No: **Date:** 01 October 2008

Dept: HEALTH AND ENVIRONMENTAL SERVICES

Post No: 258(c)

Section: ENVIRONMENTAL HEALTH SERVICE

Job Title: **MONITORING ASSISTANT (LANDFILL)**

Grade: SCALE 5

Main Purpose of Job

Responsible to the Scientific Unit Manager through the Scientific Officer for assisting in environmental monitoring and other general landfill duties.

To ensure duties and tasks assigned to the post holder are performed in accordance with specific time and quality targets.

Summary of Responsibilities and Personal Duties

1. To assist in the onsite analysis of sample waters on and around the landfill site and collection, preparation and packaging of samples.

2. To assist in taking manual water dip levels from leachate and ground water boreholes.

3. To assist in the monitoring and adjustment of the gas extraction plant and gas collection wells.

4. To carry out environmental monitoring programmes, surveys and investigations within the Scientific Units Business work programme required.

5. To participate in the implementation of the programme of scientific investigation in the Department as required e.g. legionella sampling, water sampling, gas sampling throughout the council.

6. To carry out calibration, maintenance and repairs as required on environmental monitoring equipment in accordance with specified guidelines.

7. To undertake duties allocated by the Landfill Site Supervisor including driving, refuelling, traffic control or other duties as may from time to time be required.

8. To undertake the duties in such a way as to enhance and protect the reputation and public profile of the City Council.

9. To undertake such other relevant duties as may from time to time be required.

Appendix vii – Revised Scientific Officer Job Description

Job Description

Ref No: **Date:** 1 October 2008

Dept: HEALTH AND ENVIRONMENTAL SERVICES

Post No: 258(a)

Section: ENVIRONMENTAL HEALTH SERVICE

Job Title: **SCIENTIFIC OFFICER**

Grade: SO 2

Main Purpose of Job

Responsible to the Scientific Unit Manager for the provision of the departmental scientific support services.

To ensure duties and tasks assigned to the post holder are performed in accordance with specific time and quality targets.

To make an effective contribution to the development and achievement of the Unit's objectives.

To carry out interpretive analysis on scientific data, operate and maintain monitoring equipment and to make an effective contribution to the development and achievement of effective, safe and efficient operational scientific services

Summary of Responsibilities & Personal Duties

1. To carry out environmental monitoring programmes, surveys and investigations in the Health and Environmental Services Department and meet targets as specified in the business programme, and sampling programme

2. To participate in the implementation of the programme of scientific investigation in the Department.

3. To liaise with other Council Departments, Consultants and Contractors as required.

4. To compile data and prepare and interpret reports including maintaining computer based records on monitoring programmes, surveys and site investigations carried out across the range of services provided in the scientific unit.

5. To interpret scientific data and reports and liaise with or advise external agencies/developers consultants/government departments regarding the improvement of environmental monitoring.

6. To prepare comprehensive, scientific based reports and consultation briefs as required.

7. To supervise the work of agency contractors/consultants as required, to enhance the lead approach by the Council in developing a safe and healthy city.

8. To carry out calibration, maintenance and repairs as required on environmental monitoring equipment in accordance with specified guidelines.

9. To provide advice on the selection of new monitoring equipment as required.

10. To undertake chemical or physical sample analysis in the Department's laboratory or on site as required.

11. To train environmental health staff or students in the use and application of monitoring equipment.

12. To supervise and assist staff or students using the Department's laboratory as required.

13. To provide scientific information and advice in response to environmental enquiries.

14. To carry out monitoring (both ground point and building) as part of the Duncrue Industrial Estate Gas Control Scheme as required in order to meet the sampling programme and business needs.

15. To ensure the monitoring programme is planned and managed effectively, with timely decisions taken to ensure the safety of buildings and the use of the gas extraction system.

16. To investigate complaints regarding pollution and to prepare reports on the findings and attend court to give evidence as necessary.

17. To undertake surveys, monitoring exercises and projects in relation to pollution control as required.

18. To undertake monitoring and investigative work outside normal working hours and participate in the Council's out of hour's noise service.

19. To keep informed of new developments within the field of responsibility.

20. To participate in the Department's training programmes.

21. To deputise for the Scientific Unit Manager as required.

22. To provide cover for the Scientific Officer (Landfill) as required.

23. To participate as directed in the Council's selection interview procedure.

24. To undertake the duties in such a way as to enhance and protect the reputation and public profile of the City Council.

25. To undertake such other relevant duties as may from time to time be required.

Appendix viii – Detailed Benchmarking Data

Name of Authority/Council: FINGAL COUNTY COUNCIL RE BALLEALLY LANDFILL

Q1 Do you have a landfill site that is currently in use or has been capped?

Yes	

Q2 How many acres does your landfill site occupy?

125 ACRES APPROX

Q3 Where is the landfill situated?

Please tick

a: Rural YES	
b: Quarry	
c: Shore	
d: Other (Please Specify*)	

*

Q4 How do you monitor the landfill site?

Please tick

a: Council Monitoring Staff YES	
b: Outsourced agency/contractors YES	
c: Other (Please Specify*)	

*

Q5 Please list the job titles, grade/salary and number of staff employed or contractors in your monitoring regime.

No# of staff /contractors	Job title	Grade/Salary
FCC STAFF 2	**Landfill Manager/ Senior Landfill Manager**	
CONTRACTOR 1	**Surface Water / Groundwater / Gas / Leachate**	
CONTRACTOR 2	**Annual Engine Emissions Sampling**	
CONTRACTOR 3	**Slope Stability Monitoring**	
CONTRACTOR 4	**Biological Sampling**	
CONTRACTOR 5	**Leachate Treatment Plant Monitoring**	

Q6 Could you provide copies of relevant JD's

	No

Q7 Please identify what you monitor on the landfill site.

Please tick

a: Gas yes	
b: Lechate yes	
c: Ground Water yes	
d: Surface Water yes	
e: Marine Water (*if applicable) yes*	

Q8 How many gas wells do you monitor and how often are they monitored? E.g. once per week, once per month, quarterly etc.

13 gas wells monitored weekly

Q9 How many gas wells can be monitored each day?

13 daily if required

Q10 At how many locations are the leachate, ground water, surface water and marine water *(if applicable)* **monitored and how often?**

Leachate (24 wells- Monthly) Groundwater (4 Wells Monthly)
Surface Water (4 Locations) Marine Waters (7 – Biannual)

Q11 How many leachate, ground water, surface water and marine water (if applicable) **samples can be taken each day?**

NA

Q12 Do you use the gas on site for electricity generation?

YES

Name of Authority/Council:	Glasgow City Council

Q1 Do you have a landfill site that is currently in use or has been capped?

Yes	No

Q2 How many acres does your landfill site occupy?

210 approx.

Q3 Where is the landfill situated?

Please tick

a: Rural	√
b: Quarry	
c: Shore	
d: Other (Please Specify*)	

*

Q4 How do you monitor the landfill site?

Please tick

a: Council Monitoring Staff	√
b: Outsourced agency/contractors	√
c: Other (Please Specify*)	

*

Q5 Please list the job titles, grade/salary and number of staff employed or contractors in your monitoring regime.

No# of staff /contractors	**Job title**	**Grade/Salary**
1	**Landfill Manager**	
1	**Landfill Supervisor**	
1	**Environmental officer**	
4	**Machine Operator**	
6	**General Labourer**	

Q6 Could you provide copies of relevant JD's

Yes	No

Q7 Please identify what you monitor on the landfill site.

Please tick

a: Gas	√
b: Lechate	√
c: Ground Water	√
d: Surface Water	√
e: Marine Water (*if applicable)*	

Q8 How many gas wells do you monitor and how often are they monitored? E.g. once per week, once per month, quarterly etc.

6 Perimeter wells monitored once a month by GCC and approx. 90 permane gas extraction wells for in-waste monitoring, monitored by contractors

Q9 How many gas wells can be monitored each day?

All 6 perimeter wells and approx 50 permanent in-waste wells

Q10 At how many locations are the leachate, ground water, surface water and marine water *(if applicable)* **monitored and how often?**

9 Groundwater locations monitored monthly, 10 surface water locations monitored monthly, 4 leachate locations

Q11 How many leachate, ground water, surface water and marine water (if applicable) **samples can be taken each day?**

9 groundwaters can be monitored in a day, 10 surface waters can be done day and 4 leachates can be done in a day

Q12 Do you use the gas on site for electricity generation?

Yes	No

Name of Authority/Council:	Liverpool City Council

Q1 Do you have a landfill site that is currently in use or has been capped?

√	No

Q2 How many acres does your landfill site occupy?

Approx 3 acres

Q3 Where is the landfill situated?

Please tick

a: Rural	
b: Quarry	
c: Shore	√
d: Other (Please Specify*)	

*

Q4 How do you monitor the landfill site?

Please tick

a: Council Monitoring Staff	
b: Outsourced agency/contractors	√
c: Other (Please Specify*)	

*

Q5 Please list the job titles, grade/salary and number of staff employed or contractors in your monitoring regime.

No# of staff /contractors	**Job title**	**Grade/Salary**
Approx 6	**Landfill design consultant to monitoring technician**	**Don't know**

Q6 Could you provide copies of relevant JD's

Yes	√

Q7 Please identify what you monitor on the landfill site.

Please tick

a: Gas	√
b: Lechate	√
c: Ground Water	√
d: Surface Water	
e: Marine Water (*if applicable)*	

Q8 How many gas wells do you monitor and how often are they monitored? E.g. once per week, once per month, quarterly etc.

Up to 600 once a week

Q9 How many gas wells can be monitored each day?

unknown

Q10 At how many locations are the leachate, ground water, surface water and marine water *(if applicable)* **monitored and how often?**

All bh's installed

Q11 How many leachate, ground water, surface water and marine water (if applicable) **samples can be taken each day?**

Once a week

Q12 Do you use the gas on site for electricity generation?

Yes	No√

Name of Authority/Council:	Newcastle City Council

Q1 Do you have a landfill site that is currently in use or has been capped?

Yes	

Q2 How many acres does your landfill site occupy?

There are 5 sites, 30+ years closed, of varying size within the city boundary. Acreage not known.

Q3 Where is the landfill situated?

Please tick

a: Rural	v
b: Quarry	
c: Shore	
d: Other (Please Specify*)	v

*Urban

Q4 How do you monitor the landfill site?

Please tick

a: Council Monitoring Staff	v
b: Outsourced agency/contractors	
c: Other (Please Specify*)	

*

Q5 Please list the job titles, grade/salary and number of staff employed or contractors in your monitoring regime.

No# of staff /contractors	**Job title**	**Grade/Salary**
2	**SO2**	**2500**
2	**Grade 6**	**2100**

Q6 Could you provide copies of relevant JD's

	No

Q7 Please identify what you monitor on the landfill site.

Please tick

a: Gas	v
b: Lechate	
c: Ground Water	
d: Surface Water	
e: Marine Water (*if applicable)*	

Q8 How many gas wells do you monitor and how often are they monitored? E.g. once per week, once per month, quarterly etc.

5 x sites, approx 60 wells total, monitored quarterly

Q9 How many gas wells can be monitored each day?

30 (could monitor more but wells are hard to find – flush with ground, often in overgrown areas)

Q10 At how many locations are the leachate, ground water, surface water and marine water *(if applicable)* **monitored and how often?**

na

Q11 How many leachate, ground water, surface water and marine water (if applicable) **samples can be taken each day?**

na

Q12 Do you use the gas on site for electricity generation?

	No

Response from East Riding

From: Jonathan.Tait@eastriding.gov.uk
Sent: 19 September 2008 12:35
To: Tom McIlvenny
Subject: Re: Landfill Questionnaire

Dear Mr McIlvenny

Further to your email and contaminated land questionnaire. Having reviewed the questionnaire I feel that we are unable to assist you on this occasion as the Council does not currently have a landfill in the process of being capped. The Environmental Control team that deals with Part IIA Environmental Protection Act (contaminated land) for the Council only really deals with closed landfills and not those which are still under licence and need to be capped at the end of their life. The Environment Agency is the body that regulates open landfills and issues licences for them to operate which includes the measures taken at the end of their operational life, e.g. capping.

However, I can give you some information regarding the set up of the team that does deal with Part IIA Environmental Protection Act.

The team is led by a Senior Environmental Control Officer (scp42 = £34,140 pay award pending). Then there are three Specialist Environmental Control Officers (scp35 = £28,172 pay award pending)

We deal with approximately 11,500 sites of potentially contaminated land. Of that 11,500 approximately 360 are closed landfill sites where we know or have strong suspicions that waste was filled at the site. A further approx 2,500 sites are possible landfills such as old chalk pits, old sand pits etc where no hole in the ground remains, suggesting landfilling at some point.

When a site investigation is commenced on a former landfill as part of the duties under Part IIA Environmental Protection Act a desk top study is undertaken to determine what pollution pathways might exist. This study lays out the direction the sampling will take. It

is common for the team to take soil and gas samples at a site and also surface water where it exists. However, if complex geotechnical operations are required then the Council will call in the services of a consultant, going out to tender where appropriate.

I hope this information helps you. Should you require any further information then please contact me.

Kind regards
Jon

Jon Tait BSc(Hons), MIEnvSc, CEnv

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