

Environmental monitoring service project

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Contents

Contents	2
1.0 Executive Summary	3
2.0 Introduction	3
3.0 Project Objectives	3
4.0 Methodology	4
5.0 Project Outcomes	5
6.0 Discussion	5
7.0 Conclusions / Recommendations	5
8.0 Bibliography	Error! Bookmark not defined.
9.0 Appendices	Error! Bookmark not defined.

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1.0 Executive Summary

The project is designed to provide an alternative management system to the collection of waste and wastewater data collected for compulsory reporting schedules set out by NSW EPA. Utilizing consultants with previous experience results in informed solution management for small companies and avoids problems caused by uneducated equipment purchases that may or may not be the right solution.

2.0 Introduction

Environmental management has become an important day to day function in the meat processing arena, with large abattoirs hiring the services of permanent environment managers as staff. Smaller abattoirs cannot afford these costly services, so consultant groups are engaged to perform the tasks bringing with them vast experience and know how. In turn this helps reduce the burden of costs associated with full time positions.

This project will monitor an external provider to perform the task of EPA monitoring on behalf of WSMW and facilitate the trial of new equipment as it becomes available the outcome of which will ultimately lift capability and efficiencies of small plants nationally

3.0 Project Objectives

Production and preparation of a site safety plan (SSP), including relevant work safe method statements (SWMS)

Quarterly water sampling and monitoring at the irrigation pump pipeline immediately below junction with recycled water supply line.

Monthly tests of

- Water monitoring event every quarter (location specified by EPL)
- Log the water observed at the sampling location
- Analysis of water samples at a NATA approved lab
- Analytical comparison against samples

Annual Soil Sampling

- Collection of 3 surface (0-.015 metres below ground level (mBGL)
- 3 subsurface (0.45-0.75 mBGL) composite samples from areas specified in section M2 of the EPL
- Arrange analysis of samples at NATA accredited lab
- Comparison of previous soil analytical samples

Table 1: Soil Sample Analytical Schedule

Location	Depth (mBGL)	No Samples Analysed	Analytes
Slope	0-0.15	1	Ammonia, Bray phosphorus, Cation Exchange Capacity, Conductivity, Exchangeable calcium, Exchangeable magnesium, Exchangeable potassium, Exchangeable sodium, Nitrate, pH, Phosphorus Sorption Capacity, Total Kjeldahl Nitrogen
	0.45-0.75	1	Bray phosphorus, Conductivity, Nitrate, pH, Total Kjeldahl Nitrogen
Ridge	0-0.15	1	Ammonia, Bray phosphorus, Cation Exchange Capacity, Conductivity, Exchangeable calcium, Exchangeable magnesium, Exchangeable potassium, Exchangeable sodium, Nitrate, pH, Phosphorus Sorption Capacity, Total Kjeldahl Nitrogen
	0.45-0.75	1	Bray phosphorus, Conductivity, Nitrate, pH, Total Kjeldahl Nitrogen
Flat area	0-0.15	1	Ammonia, Bray phosphorus, Cation Exchange Capacity, Conductivity, Exchangeable calcium, Exchangeable magnesium, Exchangeable potassium, Exchangeable sodium, Nitrate, pH, Phosphorus Sorption Capacity, Total Kjeldahl Nitrogen
	0.45-0.75	1	Bray phosphorus, Conductivity, Nitrate, pH, Total Kjeldahl Nitrogen
QC Samples	Field duplicates	2	Ammonia, Bray phosphorus, Cation Exchange Capacity, Conductivity, Exchangeable calcium, Exchangeable magnesium, Exchangeable potassium, Exchangeable sodium, Nitrate, pH, Phosphorus Sorption Capacity, Total Kjeldahl Nitrogen

4.0 Methodology

Analysis of four water sampling sites analysed by a Nata accredited lab each quarter. Looking at

- Biochemical oxygen demand
- Conductivity
- Faecal coliforms
- Nitrogen (ammonia)
- Nitrogen (total)
- pH
- Phosphorus (total)
- Reactive Phosphorus
- Total suspended solids

The proposed analytical schedule was based on water quality parameters and areas of concern identified within section M2.2 of the EPL.

Following all Milestones as outlined in the project, a report will be generated to discuss potential treatment options to allow for irrigation of this water on site. The report will be completed in general accordance with industry best practise, guidelines and will look to compare results to the ANZECC 2000 Water Quality Guidelines and associated irrigation trigger values

5.0 Project Outcomes

This project identified the contaminants present and provided direction on what contaminants required treatment to facilitate irrigation, reuse and treatment plans.

A set of critical measures has been implemented to manage compliance

- Effluent pumping cannot flow at a density that would cause run off
- Spray from effluent must not drift beyond boundaries of the plant
- Livestock access to effluent during irrigation cannot occur until ground has dried
- Blood and paunch materials cannot be included in effluent ponds
- Only effluent from the anerobic pond can be irrigated
- Solids and sludge must be removed from effluent management system
- Sludge removed must be transported off the premises to a facility that is lawfully able to receive it and not stockpiled anywhere on the premises
- The effluent ponds must not leak or overflow
- The effluent equipment must be inspected weekly
- The license must record and retain all information related to the inspections
- A cut and carry system must be maintained for area 2. The licensee must record and retain information relating to the date in which the material was cut from Area 2
- The licensee must maintain and appropriate irrigation distribution system on area 2 including the moveable K line system low pressure travelling effluent irrigator to enable distribution of effluent evenly
- Irrigators must be moved regularly

6.0 Discussion

The project has proven this approach as a viable method of maintaining and recording water/waste management on site that is suitable to be used in reporting schedules set out by NSW EPA. Utilizing consultants with previous experience results in informed solution management for the company and avoids problems caused by uneducated equipment purchases that may or may not be the right solution.

7.0 Conclusions / Recommendations

WSMS recommend the use of consultants to work with small to medium plants as a means of managing costs, compliance and efficiency. The consultants were able to identify solutions to our wastewater streams and manage the complexity of dealing with government departments and the information they require. The collection of data is mandatory in our industry but the key learnings and benchmarking that come with data collection will help shape decision making into the future, certainly for us. We have embraced the decision on data as a positive step in establishing our baseline and are taking positive steps now towards continual improvement.

8.0 Bibliography

Refer to technical framework as reported in **Prensa Report: 104190S Summary of EPL 422 Monitoring Requirements - Picton Abattoir**