EMS Permit Pilot Project
Follow-up Environmental Assessment
Magnum Feedyard, LLC
Wiggins, Colorado

Report Addendum

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1.0 INTRODUCTION

The Colorado Department of Public Health and Environment (CDPHE) is reviewing the efficacy of its environmental management system (EMS) permit pilot project to evaluate whether or not environmental improvements, operating flexibility and regulatory efficiencies can be gained from combining the regulatory requirements of a facility under one, cross-media, EMS-based operating permit. Legislation was adopted in 2004 that gives CDPHE the authority to pilot this process using industry volunteers.

Magnum Feedyard, a confined animal feeding operation (CAFO), agreed to participate as one of the agricultural industry partners in this EMS permit pilot project. A baseline environmental assessment was conducted at Magnum Feedyard in December 2004. The intent of the environmental baseline assessment was to determine the environmental footprint of the facility, gather baseline data related to environmental impacts associated with a CAFO and to assess environmental programs in place at Magnum.

A follow-up environmental assessment was conducted at Magnum on June 12, 2006 and a report was issued on August 5, 2006 describing the results of that assessment.

This report serves as an addendum to the August 5, 2006 Follow-up Assessment Report and provides updated information on the status of environmental improvement projects at Magnum and provides three years of environmental metrics, which were used to evaluate whether environmental improvements were realized as a result of participation in the project.

Included in this addendum are notations on significant changes made to operations, if any, and progress made with continual improvement projects identified at the beginning of the project. A brief summary of metrics that were collected during the baseline and follow-up assessments also is included. Detailed information about the operations and practices in place at Magnum may be found in the baseline environmental assessment and the follow-up assessment reports.

2.0 ENVIRONMENTAL UPDATE

The baseline assessment provided detailed descriptions of Magnum operations and its overall environmental footprint. The follow-up assessment provided an update of the operations and noted any significant changes made as a result of the EMS permit pilot project. This addendum provides a summary of changes made to operations since the follow-up assessment and provides 2004, 2005, and 2006 environmental data.

2.1 RESOURCE CONSUMPTION

During the baseline and follow-up assessments, information regarding utility usage, water consumption, and fuel usage was collected for 2004 and 2005. The following section reviews the status of each of these areas and provides resource consumption data for 2006.

2.1.1 Power

Power is supplied to the feedyard, feedmill, residences, maintenance shops, and processing barns by Morgan County Rural Electric. Electricity consumption data were not collected during the 2004 baseline assessment. In 2005, Magnum consumed 679,536 KWH of electricity and in 2006 Magnum consumed 543,214 KWH of electricity.

Magnum realized a significant decline in electricity use in 2006 over 2005 levels. This reduction in electricity use is primarily due to upgrades made to feedmill equipment and more efficient use of electricity for irrigation purposes.

2.1.2 Propane

Propane is used for heating the office, feedmill, processing barn and three on-site residences. During 2004 Magnum used 10,830 gallons of liquid propane. In 2005, Magnum used 10,780 gallons of liquid propane and in 2006 Magnum consumed 8,197 gallons of propane.

The reduction in propane use in 2006 is primarily due to weather. However, Magnum has been actively installing energy saving thermostats throughout its operations, which may be contributing to the reduced propane use.

2.1.3 Fuel

Magnum has two 1,000 gallon above ground fuel storage tanks onsite. One is used for farm diesel and the other is used for gasoline. The tanks are located within a concrete secondary containment system south of the shop to provide fuel for facility vehicles. In 2004 the feedyard consumed 33,322 gallons of diesel and 9,546 gallons of gasoline. In

2005, 30,174 gallons of diesel and 10,852 gallons of gasoline were consumed and in 2006, Magnum consumed 29,869 gallons of diesel and 11,761 gallons of gasoline.

Magnum increased its gasoline consumption over the past two years but reduced diesel consumption. This is primarily due to increasing the number of gasoline powered vehicles at the operations.

2.1.4 Water Consumption

Water is consumed for various purposes at the feedyard including crop irrigation, feedmill operation, animal watering, dust control and human consumption. Magnum has four irrigation wells, 11 domestic wells, and one large capacity commercial well. Magnum also receives some of its water from Morgan County Quality Water. Water usage from groundwater wells is not metered, but is tested quarterly for hardness and nutrient levels by an outside contractor.

In 2004 Magnum consumed 2,564,000 gallons of water provided by Morgan County. In 2005, 3,712,000 gallons of water were consumed. In 2006 Magnum consumed 4,262,000 gallons of county supplied water. The 66% increase in water consumption can be explained by the fact that feedmill operations were added to county water in late 2004 in an effort to better manage feed mix. In addition, drought conditions over the past several years have led to additional water needs for irrigation purposes.

2.2 CONTINUAL IMPROVEMENT PROJECTS

There were several continual improvement projects implemented throughout the life of this project. A brief update of process enhancements implemented since the follow-up assessment is provided below.

2.2.1 Mortality Composting

Magnum Feedyard initiated a composting program in October 2005 for managing its mortalities on site rather than shipping them off site to a rending facility. Composting is completed using a mixture of manure, which is generated on site, straw or other carbon source, and mortalities. These ingredients are layered in large piles and allowed to heat up for several weeks. The piles are turned at least once. The end product is a rich, organic compost material that is being land applied to augment sandy soils or used on site to help with pen surface management. Since the follow-up assessment, Magnum has experimented with the moisture content of the composting recipe, which has resulted in higher temperatures within the compost piles and a more efficient composting operation.

2.2.2 Zero Stormwater/Process Water Discharge

The overall stormwater management plan for the feedyard is a work in progress. Magnum is working to resolve a potential issue involving the presence of an ephemeral stream that allegedly runs through the site and an associated 100-year flood plain located within some of the feedyard pens. A survey of the site has been completed and discussions are underway for engineering controls for process wastewater and stormwater management.

Since the follow-up assessment, the stormwater ponds were found to be in compliance with pond liner certification standards. Water level markers are being constructed and will be installed during the first quarter of 2007. Magnum intends to apply for a General Discharge permit in 2007.

2.2.3 Water Use

Magnum Feedyard has been working on several projects designed to reduce water use. In 2005 Magnum installed Walter Ice Preventors on water tanks, which are designed to sense temperature and only allow tanks to overflow when water temperatures approach freezing. This has significantly reduced the amount of water overflowing from tanks, which has had the added benefit of reducing the amount of surface runoff to storage impoundments. Since the follow-up assessment, Magnum has been researching the use of a new tank device that is designed to use even less water than the Walter Ice Preventors. The research is in progress so no permanent changes have been made to water tank configurations at this time.

2.2.4 Energy Conservation

Magnum has implemented several energy conservation programs over the past two years as part of its participation in the EMS permit pilot project. One such project involved upgrading motors used in the feed mill, which require less horsepower. Magnum also has been actively managing the electricity use on irrigation pivots. These efforts have resulted in a 20% reduction in electricity usage since 2005.

2.3 METRICS

Table 1 presents a summary of the resource consumption data discussed in Section 2.1. It is important to note that these metrics do not necessarily reflect improvement or degradation of the environment due to Magnum Feedyard practices and are limited by the fact that only two years have elapsed since the baseline assessment. Ideally, metrics should be tracked over a longer period of time and should be normalized to reflect fluctuations in operations. However, they do provide a measure of performance that can be useful for driving operational changes, if warranted.

Table 1: Environmental Metrics

Metric	Baseline 2004	2005	2006	% Change Since 2004
Electricity (kwh)	NA	679,536	543,214	(20%)*
Propane (gal)	10,830	10,780	8,197	(24%)
Gasoline (gal)	9,546	10,852	11,761	23%
Diesel (gal)	33,322	30,174	29,867	(10%)
County Water (gal)	2,564,000	3,712,000	4,262,000	66%

NA – not available

* since 2004 data were not available, this number represents % change in usage over 2005