

FACT SHEET FOR STATE WASTE DISCHARGE PERMIT ST-5328

ConAgra Foods Lamb Weston – Connell Facility

SUMMARY

PURPOSE of this Fact Sheet

This fact sheet explains and documents the decisions Ecology made in drafting the proposed State Waste Discharge permit for ConAgra Foods Lamb Weston – Connell facility that will allow the discharge of wastewater to approximately 1,200 acres of sprayfields.

State law requires any industrial facility to obtain a permit before discharging waste or chemicals to waters of the state which includes groundwater.

A State Waste Discharge permit limits the types and amounts of pollution the facility may discharge. Ecology bases those limits either on (1) the pollution control or wastewater treatment technology available to the industry, or on (2) the effects of the pollutants on the groundwater.

SUMMARY

ConAgra-LW Foods discharges process wastewater from its potato processing facility onto 1200 acres of production crop land via spray irrigation for final treatment. The water is pretreated before irrigation by screening, settling, and finally through a series of engineered wetlands. The wastewater is stored in a lined impoundment during the winter non-growing season. The average discharge flow is approximately one million gallons per day.

The proposed permit extends the current flow limit, monitoring and reporting requirements that Ecology included in the current permit that was issued on November 29, 2004. The permit will require ConAgra-LW to sample and monitor the water entering the mud settling ponds and its sediments for a variety of inorganic and organic parameters. **(See Appendix D, Response to Fact Sheet comment #1 for changes made to this narrative)**

In lieu of adding ground water enforcement limits, Ecology requires ConAgra-LW to evaluate the increasing nitrate and total dissolved solids concentration trends in the ground water downgradient of its sprayfields.

ConAgra-LW must continue to submit annual reports on its operation of the irrigation and crop management of the sprayfields to ensure compliance with the agronomic rate discharge limitation.

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I. INTRODUCTION

The legislature defined Ecology's authority and obligations for the wastewater discharge permit program in the Water Pollution Control law, Chapter 90.48 RCW (Revised Code of Washington).

Ecology adopted rules describing how it exercises its authority:

- State Waste Discharge Program (Chapter 173-216 WAC)
- Water Quality Standards For Ground Waters Of The State Of Washington (Chapter 173-200 WAC)
- Submission of Plans and Reports for Construction of Wastewater Facilities (Chapter 173-240 WAC)

These rules require any industrial facility operator to obtain a State Waste Discharge permit before discharging wastewater to state waters. They also help define the basis for limits on each discharge and for performance requirements imposed by the permit.

Under the State Waste Discharge permit program and in response to a complete and accepted permit application Ecology must prepare a draft permit and accompanying fact sheet, and make them available for public review before final issuance. Ecology must also publish an announcement (public notice) telling people where they can read the draft permit, and where to send their comments, during a period of thirty days. (See **Appendix A--Public Involvement** for more detail about the Public Notice and Comment procedures). After the Public Comment Period ends, Ecology may make changes to the draft State Waste Discharge permit in response to comment. Ecology will summarize the responses to comments and any changes to the permit in **Appendix D**.

Table 1 - General Facility Information

Applicant:	ConAgra Foods, Lamb Weston, Inc.
Facility Name and Address:	Connell Plant 811 Gum Street Connell, WA 99326
Type of Facility:	Potato processing (frozen french fries and formed products)
Type of Treatment:	Screening, settling, constructed wetlands, and land treatment via spray irrigation
Facility Location:	Sec. 33, 34, 35, T. 14N, R. 31 EWM Latitude: 46° 39' 05" N Longitude: 118° 52' 50" W
Legal Description of Application Area:	<u>ConAgra-LW fields</u> : S. of state hiway 260, E. of Warehouse Rd., W. of Moon Rd. Section 33 and 34, T 14 N., R. 31 EWM

	Latitude: 46° 39' 21" N Longitude: 118° 55' 22" W Paradise fields: N. of state hiway 260, along Moon Rd. E ½ Sec. 10, W ½ Sec. 11, NW ¼ Sec 14, T. 14N, R. 31 EWM. Latitude: 46° 42' 38" N Longitude: 118° 53' 53"
Contact at Facility	Name: Will Thielemann, P.E., Engineering Manager Telephone #: (509) 234-5511. ext 66700
Responsible Official	Name: Mark Dorsey Title: Operations Manager Telephone #: (509) 234-5511. Ext 66200

II. BACKGROUND INFORMATION

A. Facility Description

History

The ConAgra-LW Foods facility is located along the western boundary of the City of Connell (Franklin Co.), west of State Highway 395, and approximately 25 miles north of the City of Pasco; (Fig. 1). ConAgra-LW has owned and operated the facility since 1969. Freshly harvested and stored potatoes are trucked to the facility year around for processing into frozen french fries and formed potato products. Wastewater from the process is screened, settled, biologically treated in an engineered constructed wetland system, and land applied via spray irrigation for final treatment.

Industrial Process

Raw potatoes are trucked to the facility where they are washed, steam peeled, preheated and cut into french fries, which are then blanched, dried, batter coated (optional), fried, cooled, frozen, and finally packaged. Formed potato products are also produced by shredding the smaller, shorter fries. Canola based oils are predominately used for cooking.

According to information presented in the permit application, approximately 2.5 million pounds of potatoes are processed each day. Except for scheduled downtimes for O&M and sanitation, the facility operates year around, 24hrs/day.

There are primarily two waste streams: process wastewater and raw receiving wastewater. ConAgra-LW manages the two streams separately. Process wastewater from the production area is collected in an open floor drain system and gravity flows and/or pumps it through the main wastewater treatment process which consists of: screening, settling, wetland treatment, and spray irrigation.

The raw receiving waste stream is generated where the potatoes are off-loaded from the transport trucks in the receiving area. This water is mud and dirt laden and contains debris such as vines and rocks. This stream is first screened and is then sent to one of two earthen lined settling ponds. Pond water that does not evaporate is sent to the process waste stream after settling. The ponds are periodically taken off-line to dewater to allow the settled material to dry for mechanical removal and land application.

The City of Connell provides all of the freshwater to the processing facility.

Wastewater Treatment (Prior to Land Treatment)

The floor drain collected process wastewater empties into a wetwell where it is screened to remove the large potato solids. These solids are trucked off-site for cattle feed. The screened water gravity flows from the processing facility to a clarifier for removal of settleable solids, and oils and greases. Settled solids are dewatered and transported off-site for cattle feed. Captured oils/greases are sold as a byproduct.

Process wastewater from the clarifier gravity flows to either an earthen walled and lined surge basin (700,000 gallons) or collection basin (1.5 million gallons). The water from these storage/equalization ponds is pumped to an engineered constructed wetland treatment system.

Constructed Wetland

The engineered wetland system was designed and constructed for two purposes: to reduce odors by biologically treating the organic load in the wastewater; and, to reduce the nitrogen content and loading to the sprayfields. The 40 acre, 24 cell wetland system was constructed on land previously used for general agriculture; Fig. 2 and 3. All of the wetland cells are earthen diked and lined with 40 mil high density polyethylene (HDPE) plastic.

The wetland system is divided into separate operational areas:

1. W1 and W2: Is a series of shallow open surface flow wetlands planted with cattails and other emergent plants. The W1 and W2 cells are operated in parallel and are designed to treat the organic load (i.e., reduce chemical oxygen demand) by settling and mineralization. Some nitrogen removal occurs via volatilization.
2. W3: Water from the W1/W2 cells is then sent to a series of vertical flow wetlands that are comprised of porous sand. The water is alternately sprayed onto each W3 cell and then allowed to dry. The drying allows air to penetrate the sand to promote nitrification; conversion of ammonia to nitrate. The following wetting/drying cycle drives the nitrates through the cell where it collects in an underdrain system.
3. W4: The collected water from the W3 series is then sent to the W4 series which are open surface flow wetlands with emergent plants designed to promote nitrogen removal via denitrification and volatilization. The facility adds a small stream of raw wastewater to provide a carbon source for the biological process.

The treated water from the W4 series is then directly spray irrigated or sent to a lined impoundment for storage.

Land Treatment and Distribution System

During the summer growing season, the pre-treated wastewater from the wetland system is pumped to the sprayfield system for final treatment. There are 24 fields totally approximately 1200 acres. The fields are located in two separate areas:

1. The ConAgra-LW Farm fields (565 acres) are located directly west of the processing facility; Fig. 4. Irrigation is done via center-pivots, wheel and hand-lines.
2. ConAgra-LW leases the privately owned Paradise center-pivot fields (635 acres) located approximately three miles north of the ConAgra-LW fields (Fig. 5).

The process wastewater can be spray irrigated undiluted or mixed with supplemental irrigation water.

Non-growing Season Winter Storage

During the winter season (November – February) treated wastewater from the wetlands is sent to one of two storage ponds. The primary pond (Fig. 4) is earthen diked and single lined with 40 mil HDPE. It has an effective wastewater storage volume of 126 million gallons. Approximately nine million additional gallons is available for stormwater.

A secondary pond (Fig. 4) was recently constructed and put on-line in February 2006. It is also earthen diked with a single 60 mil HDPE liner, and can store 40 million gallons.

If the primary and secondary ponds do not provide sufficient storage volume for the entire winter season, ConAgra-LW can apply some wastewater to the sprayfields during the winter season based on Fall soil test data and weather conditions. Wastewater is generally not applied in January and February.

Hydraulic and Nutrient Loading

Ecology reviewed the water and nutrient loading to the sprayfields as presented in the annually submitted farm operations reports for the period 2004-2007 (CES, 2005; 2006a; 2007; 2008).

Water loading

The volume of process wastewater irrigated to the sprayfields ranged from 216 to 387 million gallons per year. The average daily flow from the clarifier to the wetlands ranged from 1.12 to 1.46 MGD. These compare to the design flow of 1.8 MGD.

The estimated annual water balances for each of the sprayfields were variable for each of the reporting years. Some fields had negative balances (more water used by the crop than was applied) while others had positive balances (more water applied than used). All of the fields needed supplemental fresh water to meet the water demand of the crop.

The hydraulic loading to the fields did not appear to cause excessive leaching from the root zone. The average leaching fraction (percentage of water that percolated beyond the root zone) for each of the reporting years was less than the leaching requirement (the amount of excess water that is required to manage the accumulation of salts in the soils to avoid crop toxicity).

This information suggests a reduced potential for wastewater nutrients (nitrogen; salts) to leach/percolate beyond the root zone and into the ground water.

Nitrogen loading

The total annual process wastewater nitrogen loading to the sprayfield site ranged from 96,400 to 157,000 pounds. This compares to the total annual crop uptake of 307,000 to 359,000 pounds. Supplemental fertilizer was sometimes added to specific fields to meet the crop demand depending, in part, on the residual soil nitrogen content.

The estimated field specific nitrogen balance information for each year generally shows consistent negative nitrogen balances for each field; the crop used more nitrogen than was applied.

Salt loading

Salt loading to the sprayfields was based on the fixed dissolved solids (FDS) concentration in the wastewater. The FDS concentration better represent the dissolved salt content of the wastewater because it does not include the contribution of bicarbonate. The bicarbonate concentration is accounted for in the chemical oxygen demand concentration of the wastewater.

The FDS load to the sprayfields ranged from 0 to 10,080 lbs/acre. Because the salt requirement of most crops is very low, the salt load is managed by soil monitoring and periodic leaching to control soil salinity. Best management practices for salt management include using fresh supplemental water and/or precipitation for leaching, and leaching during the non-growing season.

The previously described low leaching fraction values for the fields suggests a low potential for salts leaching through the root zone and into the ground water.

Chemical Oxygen Demand loading

The engineered wetland treatment system was designed, in part, to reduce odors by reducing the organic content of the wastewater prior to spray irrigation. The average COD concentration of the irrigated wastewater (145 mg/L; Addendum 1) is much less than industry measured values for raw potato process wastewater (850-2000 mg/L). The success of the treatment system is also demonstrated by the chemical oxygen demand (COD) loading values for the fields. The average COD load for each of the reporting years has been less than 5 lbs/day/acre. This is well below the 50 to 100 lbs/acre/day that some guidance suggests will control organic loading to sprayfield systems to control odors and not cause reducing conditions in the soils.

Ground Water

Facility reports have described the geology and hydrogeology of the site; CES, 1999a. The site is located in the Columbia Plateau that is underlain with basalt and covered by sedimentary deposits composed of sand, gravel, cobbles, and boulders. The Columbia River Basalt Group and interflow materials make up the aquifer system at the site.

Ground water flows horizontally in the interflow zones and there is minimal vertical movement between the zones through the basalt fractures. Ground water in the uppermost basalt flows is usually unconfined while deeper zones have confined aquifer systems. Most irrigation wells are finished in the deeper water bearing zones. Ground water pumping within the Wanapum basalt may have caused the direction of general ground water flow at the site to change from southwesterly in area around the site to southeasterly. Based on ground water elevations collected between 2001 and 2004, the direction of ground water flow is predominately to the east-southeast.

ConAgra-LW Fields

The geology of the ConAgra-LW field site has essentially separated the ground water into two separate stratigraphic zones. The Wanapum interflow zone is in the easterly portion of the site. The ground water in this zone is between basalt flows and is monitored by wells MW-15, -16, and -17; Fig. 2.

The T-Lake zone is in the westerly portion of the site. The ground water in the T-zone is topographically approximately 100ft higher in elevation than the Wanapum IFZ; i.e., more shallow; Fig. 6. There is no apparent hydraulic connectivity between the two zones; CES, 1999a. The T-Lake zone is monitored by MW-12, -18, and -19; Fig. 2.

Paradise fields

ConAgra-LW's review of well logs in the vicinity of the site (Fig. 5) showed a median depth to the basalt is 18ft below ground surface (bgs) and the median well depth is 1200ft bgs. The results of exploratory borings at the site showed the presence of hard, unfractured basalt at intervals of five feet or greater and that unconfined ground water is not present beneath the site (CES, 1999a). Based on the geology of the site and well log information, Ecology has not required the facility to install monitoring wells at the site.

Ground Water Quality

ConAgra-LW fields – T-Lake zone

Ground water beneath the T-Lake zone is characterized by data collected at MW-12 (upgradient), MW-18, and -19. Ecology summarized the ground water data for these wells over the current permit cycle (January 2005 – August 2008); Addendum 1. Nitrate values at MW-12 were generally less than the ground water standard; 10 mg/L, Fig. 7. Values decreased from January 2005 to early 2007; thereafter, values began to increase. Total dissolved solid (TDS) values were below the ground water standard (500 mg/L) and showed no apparent trend. The average concentration for the reporting period was 365 mg/L.

Values for nitrate and TDS at MW-18 were below the respective ground water standard values, and there was no apparent trend in the data; Fig. 8. Nitrate values at MW-19 were generally less than the ground water criteria (10 mg/L), but values show an upward trend throughout the reporting period; Fig. 9. Values for TDS at MW-19 also trended upward throughout the reporting period (avg = 492 mg/L) with the most recent values exceeding the ground water standard; 500 mg/L.

The cation/anion composition at each well indicates the ground water in the T-Lake zone is a calcium bicarbonate-type of water.

ConAgra-LW fields – Wanapum zone

Nitrate values measured at MW-15 (avg = 11.7 mg/L) were generally greater than the ground water standard; 10 mg/L (Fig. 10). Concentration peaks occurred annually during the March/April time period. Values showed a declining trend during the reporting period. Values for TDS were generally less than the ground water criteria (500 mg/L) and also showed March/April peaks. TDS concentrations showed a similar downward trend through the reporting period.

TDS concentrations at MW-16 were generally greater than the ground water criteria and showed a dramatic increasing trend throughout the reporting period; Fig. 11. The average TDS value for MW-16 is 582 mg/L. Similarly, nitrate values always exceeded the ground water criteria (10 mg/L) and also showed an upward trend; avg = 13.2 mg/L.

The cation/anion composition at both wells also shows a calcium bicarbonate-type of ground water.

MW-17 was reported by ConAgra-LW as dry throughout the reporting period. This well, which was intended as the upgradient well for the Wanapum Zone, has been dry since it was installed.

Farm Drain

A shallow subsurface drainage collection system extends beneath fields C4, C5, and C8 and day lights at a Farm Drain located along the southern edge of the ConAgra-LW Farm site; Fig. 2. Ecology's review of the data collected at the drain for the reporting period shows nitrate concentrations were consistently well below the ground water standard with values ranging from 0.2 to 4.9 mg/L; Addendum 1. Values for TDS were also generally less than the ground water standard; 282-485 mg/L.

Other Monitoring Wells

There are several ground water monitoring wells that were previously used to monitor the old sprayfield site; MW-1R, -2, -10, -11 (Fig. 2). Irrigation of wastewater onto these fields stopped in 1996. The current permit did not require the facility to sample these wells.

Solid Wastes

The management of the solid wastes from the processing facility is described in ConAgra-LW's most recent solid waste plan; ConAgra, 2006. Potato wastes are managed in one of three ways:

1. Cattle feed: Potato discards and solid matter; screened or settled potato matter.
2. Sold as byproduct: Edible fry oil and starch recovered from the waste stream.
3. Land applied: Dirt; vines; rocks; cull potatoes. The facility uses an area of the Old Farm sprayfield site east of field C-6 and near MW-16.

Ecology reviewed the plan in preparation of this Fact Sheet to determine if it met Ecology's guidance for solid waste plans for industrial wastewater dischargers; Addendum 2. The plan generally met the guidance requirements. The missing information included: a description of any contingency plans for solid waste handling and the name and contact information for each facility receiving the solid waste from ConAgra-LW. The additional information will be obtained from ConAgra-LW outside of the permit.

Stormwater

Information presented in the permit application shows stormwater from the production facility site is managed by directing it to drywells, surface infiltration areas, or to the mud settling ponds.

B. Permit Status

Ecology issued the current permit on November 29, 2004 and it became effective January 1, 2005. The permit limited the flow from the processing facility to an average monthly value of 1.84 MGD. Standard permit language also limited the application of the process wastewater to sprayfields at rates not to exceed the agronomic rates for water and nitrogen, and at rates for other constituents that protects the ground water.

ConAgra Lamb Weston submitted an application for permit renewal on December 24, 2008. Ecology accepted it as complete on December 30, 2008.

C. Summary of Compliance with Previous Permit Issued

Ecology staff last conducted a non-sampling compliance inspection on September 6, 2007. Based on a review of discharge information submitted by the ConAgra-LW and the site inspection it was determined that ConAgra-LW was in compliance with the terms and conditions of the permit.

D. Wastewater Characterization

ConAgra-LW reported the concentration of pollutants in the State Waste Discharge application and in monthly discharge monitoring reports; DMRs. The tabulated effluent data represents the quality of the effluent that will be irrigated and as reported in the application for the period November 2007 – October 2008.

Table 2: Wastewater Characterization

Parameter	Average Concentration	Maximum Concentration
COD	218 mg/L	330 mg/L
Conductivity	1541 umhos/cm	2560 umhos/cm
Alkalinity	980 mg/L	1100 mg/L
Ammonia-N	60.6 mg/L	113 mg/L

Parameter	Average Concentration	Maximum Concentration
pH	8.31 standard units	9.03 standard units
Fixed dissolved solids	2401 mg/L	2870 mg/L
Nitrate+nitrite-N	2.7 mg/L	27 mg/L
TKN-N	70.7 mg/L	115 mg/L
Total phosphate-P	42 mg/L	46.9 mg/L
Calcium	29.3 mg/L	39.6 mg/L
Chloride	127 mg/L	232 mg/L
Magnesium	31.9 mg/L	32.8 mg/L
Potassium	451 mg/L	470 mg/L
Sodium	190 mg/L	210 mg/L
Sulfate	16.5 mg/L	20 mg/L

The average values reported in the permit application are generally similar to the average values determined from the reported values in the monthly DMRs; January 2005-August 2008, Addendum 1. The biggest discrepancy was for the average chloride value where the average DMR value was 312 mg/L. This may be explained by the number of samples used for the application value (n=2) and the DMR summary value (n=7).

The quality of the irrigated wastewater is somewhat different from similar potato processors in the Columbia Basin. The difference is in the lower values for COD and TKN. The lower values can be attributed to treatment by the constructed wetlands. The anion/cation composition of the irrigated wastewater is similar to other potato processors.

III. PROPOSED PERMIT CONDITIONS

State regulations require that Ecology base permit discharge limits on the:

- Technology and treatment methods available to treat specific pollutants (technology-based). Dischargers must treat wastewater using all known, available, reasonable methods of prevention, control, and treatment (AKART).
- Conditions necessary to meet applicable water quality standards to preserve or protect beneficial uses for ground waters.
- Applicable requirements of other local, state and federal laws.

Ecology applies the most stringent of these limits to each parameter of concern and further describes the proposed limits below.

The limits in this permit reflect information received in the application and from supporting reports (engineering, hydrogeology, monitoring, and irrigation/crop management). Ecology evaluated the permit application and determined the limits needed to comply with the rules adopted by the State of Washington.

Ecology does not develop effluent limits for all reported pollutants. Some pollutants are not treatable at the concentrations reported, are not controllable at the source, and are not listed in regulation.

Ecology does not usually develop permit limits for pollutants that were not reported in the permit application but that may be present in the discharge. The permit does not authorize the discharge of the non-reported pollutants. During the five-year permit term, the facility's effluent discharge conditions may change from those conditions reported in the permit application. The facility must notify Ecology if significant changes occur in any constituent. Industries may be in violation of their permit until the permit is modified to reflect additional discharge of pollutants.

A. Technology-Based Effluent Limits

All waste discharge permits issued by Ecology must specify conditions requiring the facility to use AKART before discharging to waters of the state (RCW 90.48).

Ecology approved the engineering report for ConAgra-LW's process wastewater facility titled 'Engineering Report Addendum for Additional Land Application Fields, Lamb-Weston, Connell, Washington', dated May 1999b, and prepared by Cascade Earth Sciences (CES), in conformance with *Guidelines for the Preparation of Engineering Reports for Industrial Wastewater Land Application Systems*, May 1993 (<http://www.ecy.wa.gov/biblio/9336.html>) and *Guidance on Land Treatment of Nutrients in Wastewater, with Emphasis on Nitrogen*, November 2004 (<http://www.ecy.wa.gov/biblio/0410081.html>). Ecology determined the facility meets the minimum requirements demonstrating compliance with the AKART standard if the ConAgra-LW operates the treatment and disposal system as described in the approved engineering report and any subsequent Ecology approved reports.

Land Treatment Requirements

ConAgra-LW must meet the following permit limits to satisfy the requirement for AKART:

- Land apply wastewater via spray irrigation not to exceed agronomic rates (as defined in Ecology's ground water implementation guidance) for total net nitrogen and water, and at rates for other wastewater constituents that protect the background ground water quality.
- Apply total nitrogen and water to the sprayfields as determined by a current irrigation and crop plan.
- Operate the system to protect the existing and future beneficial uses of the ground water and not cause a violation of the ground water standards.

Table 3: Technology Based Effluent Limits

Parameter	Average Monthly
Flow	1.84 MGD

The flow limit is based on the design of the process wastewater collection and treatment system given in the 1998 engineering report (Kirkbride Group) and 2006 O&M manual; CES, 2006b.

B. Ground Water Quality Based Effluent Limits

In order to protect existing water quality and preserve the designated beneficial uses of Washington's ground waters including the protection of human health, WAC 173-200-100 states that waste discharge permits shall be conditioned in such a manner as to authorize only activities that will not cause violations of the Ground Water Quality Standards. The goal of the ground water quality standards is to maintain the highest quality of the State's ground waters and to protect existing and future beneficial uses of the ground water through the reduction or elimination of the discharge of contaminants to ground water [WAC 173-200-010(4)]. Ecology achieves this goal by:

1. Applying AKART to any discharge.
2. Applying the antidegradation policy of the ground water standards.
3. Establishing numeric and narrative criteria for the protection of human health and the environment in the ground water quality standards.

Antidegradation

The antidegradation policy within the State of Washington's Ground Water Quality Standards requires that beneficial uses of ground water be preserved. When contaminant concentrations in existing ground water are less than the criteria values, Ecology considers the background concentrations as the water quality criteria. In this situation, discharges to ground water must not degrade the existing water quality. When contaminant concentrations in the existing ground water are higher than the criteria, Ecology must protect the existing water quality. You can obtain more information on Ecology's implementation of the antidegradation policy by referring to Ecology Publication #96-02 available at <http://www.ecy.wa.gov/biblio/9602.html>.

Background Water Quality

Ecology used the procedures for estimating background ground water quality in the *Implementation Guidance for the Ground Water Quality Standards* (Ecology, Revised October 2005).

Ecology defines background water quality as the quality of groundwater which represents conditions without the impacts of the proposed activity. Accordingly, background water quality is described statistically as the 95 percent upper tolerance interval. This means that Ecology is 95% confident that 95% of future measurements will be less than the upper tolerance interval. Applicable ground water criteria as defined in Chapter 173-200 WAC and in RCW 90.48.520 for this discharge include the following:

Table 4: Ground Water Quality Criteria

Parameter	Units
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Total Dissolved Solids	500 mg/L
Nitrate (as nitrogen)	10 mg/L
pH	6.5 to 8.5 standard units
Toxics	No toxics in toxic amounts

Ecology reviewed the existing records for the facility's land treatment site and determined sufficient data exists to update the background ground water quality as defined in Chapter 173-200 WAC and described in the *Implementation Guidance for the Ground Water Quality Standards*; Ecology, Revised October 2005. Appendix C includes Ecology's calculations to update the background ground water quality.

The update is for the background concentration values for total dissolved solids and nitrate that were determined previously in preparation of the current permit and were based on a database reported for January 2000 – December 2003.

T-Lake zone – Background Ground Water Quality

Upgradient background water quality for the T-Lake water bearing zone of the ConAgra-LW field site is represented by data collected at MW-12; Fig. 2. The MW-12 data reported for January 2005 – August 2008 was added to the Jan. 2000 – Dec. 2003 database; n=92. An explanation of the analysis is given in Appendix C, and a graphical presentation of the background analysis is given in Addendum 2 of this Fact Sheet.

Nitrate:

A background value of 16 mg/L was determined for MW-12. This is similar to the value Ecology determined for the current permit (15.8 mg/L) based on the January 2000 – December 2003 data.

Ecology compared nitrate values at the downgradient wells (MW-18 and -19) to the background value; Fig. 12. Values measured at both downgradient wells during this permit cycle were consistently less than the background value.

A trend analysis (Sen's slope estimator) of the nitrate data for each well showed no significant trend at MW-18, but a significant increasing trend was found for the nitrate values at MW-19; Addendum 2.

Total Dissolved Solids:

A background value of 413 mg/L was determined from the MW-12 database. This is also similar to the background value Ecology determined for the current permit based on January 2000 – December 2003 data; 420 mg/L.

A comparison of the downgradient TDS data (MW-18 and -19) to the background value showed most of the TDS values at MW-19 exceeded the background value while the MW-18 values were less than the background; Fig. 13.

A trend analysis of the 2005-2008 TDS data for MW-19 (n=44) showed a statistically significant increasing trend. No trend was found for the MW-18 data; Addendum 2.

The TDS values measured at MW-19 during the current permit cycle and their relation to the background value (Fig. 13) is very different from what was observed for values measured during the previous permit cycle; Fig. 14. The values measured at MW-19 during the previous cycle were generally less than the background value (420 mg/L), and there appeared to be a slight decreasing trend. Values for TDS at MW-19 for the current permit cycle began to increase in 2004 from approximately 300 mg/L to 600 mg/L in 2007-08. This increase was found to be significant.

Well MW-19 is downgradient of circles C8, 9, and 10; Fig. 2. In an effort to explain the increasing ground water trends at MW-19, Ecology reviewed the water, nitrogen, and salt loading to these fields, as presented in annual irrigation and crop plans for 2004-2007; CES, 2005; 2006a; 2007; 2008. The water budgets for the fields showed the estimated amount of water leached beyond the root zone was zero for most every year. The nitrogen budgets for the fields showed negative values; more nitrogen was removed than applied. The average salt load to the three fields was similar for all of the years.

The significant increasing trend in the nitrate and TDS at MW-19 does not appear to be supported by the nutrient and water loading information presented in the annual irrigation and crop management plans for the sprayfields.

Wanapum- zone – Background Ground Water Quality

Well MW-17 was installed to represent background conditions for this water bearing zone; Fig. 2. It has been dry since it was installed. Therefore there is no background ground water data for this deeper water bearing zone. However, as explained earlier the nitrate concentrations at both down gradient wells (MW-15, -16) during the current permit cycle were almost always greater than the ground water criteria. Values for TDS were also generally above the ground water criteria at both wells with values at MW-16 showing a dramatic increasing trend; Fig. 11.

The increase in TDS concentrations at MW-16 during the current permit cycle is very different from what was observed during the previous cycle; Fig. 15. Values generally declined from January 2000 to the end of 2003. Thereafter values began to steadily increase.

Enforcement Limits

Ecology did not include ground water enforcement limits for nitrate and TDS for the T-Lake zone in the current permit issued November 29, 2004. Ecology's decision not to put enforcement limits in the current permit was based on the recognition of the successful use of the engineered wetland system to pre-treat the wastewater that resulted in nitrogen loads to the sprayfields being well below the crop requirements, that the hydraulic loading to the sprayfields was well below the crop requirements, and the TDS and nitrate water quality data from the Farm Drain (Fig. 2) which is representative of the shallow (6-8ft) water that percolates beyond the root zone was well below the ground water criteria values.

In lieu of enforcement limits, Ecology conditioned the current permit to require, in part:

- Continued ground water monitoring
- The annual reporting of a continuous 3-year trend analysis of the end-of-cropping year soil profile nitrate concentrations for all fields.
- A stable or declining end-of-cropping year soil nitrate profile trend over the three years.
- The leaching fraction for each field will be at or less than the leaching requirement.

Information presented in the most recent irrigation and crop management plan for the site (CES, 2008) shows a stable trend in the soil nitrate profile for each of the sprayfields. There is some variation in the one-foot surface sample between years, but the concentrations at the deeper soils (2-5 feet) has been stable. All of the leaching fraction values for each field were less than their respective leaching requirement.

In addition to the information presented in the annual irrigation reports, data in the monthly discharge monitoring reports for the irrigated wastewater for the current permit cycle shows the wetlands have provided a good level of treatment prior to irrigation; Addendum 1. The average COD (145 mg/L) and TKN (69.1 mg/L) values are much reduced from values seen for raw potato wastewaters; COD: 850-2000 mg/L; TKN: 125-200 mg/L. The low concentrations in the pre-treated wastewater resulted in reduced nutrient loadings to the sprayfields. Nitrogen loads have consistently been less than the amount removed by the crops; i.e., negative nitrogen balance.

The negative nitrogen and water balances, and low leaching fractions for the sprayfields is supported by the monthly chemical data for the Farm Drain; Addendum 1. This shallow drain extends across several sprayfields; Fig. 2. Values for nitrate, TDS, and chloride continue to be very low, especially relative to their respective ground water standard value; Addendum 1.

There is an active feedlot located topographically upgradient along the western boundary of the ConAgra-LW Farm; Fig. 2. Ecology has no operational information on this facility. **(See Appendix D, Response to Fact Sheet comment #4 for changes made to this narrative)**

From the current wastewater treatment system operational information, Ecology cannot explain the recent increasing trends in the TDS and nitrate values at MW-19 and MW-16, and the high nitrate concentrations at MW-15. The wells are in a different water bearing zone and there is no evidence of sprayfield management problems.

Ecology recognizes if it included enforcement limits for nitrate and TDS in the proposed permit ConAgra-LW would immediately violate the TDS limit after permit issuance. Therefore, Ecology has decided not to include ground water enforcement limits in the proposed permit. Instead the proposed permit requires ConAgra-LW to continue to monitor and report as required by the current permit.

In addition, the proposed permit will require ConAgra-LW to investigate why the TDS and nitrate values at MW-19 and -16 are increasing, and why nitrate values are high at MW-15.

Ecology also considered conditioning the proposed permit to require ConAgra-LW to locate and install a new upgradient well for the Wanapum zone since MW-17 has been dry since it was installed. The latest hydrogeologic report for the site has an extensive discussion on the lack of water in this zone; CES, 1999a. Based on the geology of the site, the report concluded that wastewater applications would not likely impact the ground water monitored by MW-15 and -16. Therefore it appears that conditioning the permit to locate and install an upgradient well for the Wanapum zone would be problematic.

Ecology explains its decision to condition the permit to address the results of the ground water evaluation later in the Fact Sheet.

C. Comparison of Effluent Limits with Limits of the Previous Permit Issued On November 29, 2004

Table 5: Comparison of Previous and New Limits

Parameter	Existing Limits	Proposed Limits
Average monthly flow from the processing facility	1.84 MGD	1.84 MGD

IV. MONITORING REQUIREMENTS

Ecology requires monitoring, recording, and reporting (WAC 173-216-110) to verify that the treatment process functions correctly, the discharge meets ground water criteria and that the discharge complies with the permit's effluent limits.

Ecology details the proposed monitoring schedule under Condition S2. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

A. Process Wastewater Monitoring

The only monitoring parameter for the process wastewater is flow. This is to ensure the flow from the processing facility does not exceed the design of the clarifier and constructed wetland.

B. Irrigated Wastewater Monitoring

Except for the addition of bicarbonate, the proposed permit retains the same list of test parameters and frequency of testing as the current permit.

C. Supplemental Irrigation Water Monitoring

Supplemental fresh water must be added to the sprayfields to meet the total water demand of the crops. The fresh water contributes nitrogen and salt to the fields.

This load must be accounted for in the annual nutrient and salt balances for the fields. ConAgra-LW has used a nitrate value of 0.53 mg/L in recent irrigation and crop plans to account for the freshwater nitrogen load. No value has been used for TDS.

The proposed permit requires ConAgra-LW to obtain a representative annual sample of the supplemental irrigation water and use the nitrogen and salt data to develop and report the nutrient budgets in the annual irrigation and crop management plan.

D. Crop Monitoring

Monitoring of the sprayfields crops will continue. Ecology has decided to eliminate the sodium, magnesium, potassium, and calcium testing and replace this testing with 'ash weight'. The ash weight better represents the mineral (salt) content of the crop that is needed for estimating the salt budget for the fields.

E. Soil Monitoring

The proposed permit retains the soil monitoring schedule and list of test parameters in the current permit. Ecology based the list of test parameters and testing frequencies on a plan submitted by ConAgra; CES, 2000.

The proposed permit removes the requirement to monitor the Old Farm fields.

F. Farm Drain Monitoring

The proposed permit retains the farm drain monitoring schedule and list of test parameters in the current permit.

G. Ground Water Monitoring

Ecology requires ground water monitoring at the site in accordance with the Ground Water Quality Standards, Chapter 173-200 WAC. Ecology has determined that this discharge has a potential to pollute the ground water. Therefore the Facility must evaluate the impacts on ground water quality. Ecology considers monitoring of the ground water at the site boundaries and within the site an integral component of such an evaluation.

The list of test parameters and sample schedule in the current permit will be continued into the proposed permit. The requirement to monitor MW-17 will be removed since it has been dry since it was installed and throughout the current permit cycle.

H. Nitrogen Load Monitoring

The current permit requires the annual reporting of the nitrogen load to the site and fields, and the nitrogen load capacity of the site; permit section S2.G. A review of the monthly DMR data for the current permit cycle (Jan 2005 – present) shows that the facility did not report these values. However, the facility did report the nitrogen load information in Table 1 (Farm Operations Summary – System Totals) in the annual irrigation and crop plan.

Ecology has decided to keep this reporting requirement in the permit but change it from a DMR report requirement, to an annual irrigation and crop plan requirement.

Table 1 of the annual irrigation and crop management plan must include: total annual net nitrogen load capacity, and total annual net nitrogen load (wastewater + fertilizer + supplemental water).

I. Lab Accreditation

Ecology requires that facilities must use a laboratory registered or accredited under the provisions of chapter 173-50 WAC, *Accreditation of Environmental Laboratories* to prepare all monitoring data (with the exception of certain parameters).

V. OTHER PERMIT CONDITIONS

A. Reporting and Recordkeeping

Ecology based permit condition S3 on our authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 173-216-110).

The current permit requires all testing results for the irrigated wastewater, ground water, and farm drain be submitted quarterly. Ecology's records show that all DMRs submitted during the current permit cycle have been submitted monthly. The monthly submittal of DMRs will be required in the proposed permit.

B. Irrigation and Crop Management Plans

Ecology requires the irrigation and crop management plan to support the engineering report and operations and maintenance manual. This plan must include a consideration of wastewater application at agronomic rates and should describe and evaluate various irrigation controls.

The annual plan report must continue to include:

1. A continuous 3-year trend analysis of the end-of-year soil profile nitrate concentration at each sprayfield. The profile shall be at one-foot intervals and extend to 5 feet.
2. The annual total net nitrogen and water load capacity, and the fixed dissolved solids (FDS) loads for the sprayfield system based on the expected cropping schedule.
 - a. A comparison of the actual to the estimated total net nitrogen, fixed dissolved solids, and water loads.
3. Nitrogen, FDS, and water balances for each sprayfield and the site.

Ecology added a new requirement in the annual irrigation and crop plan. The facility must present a fifteen (15) year trend analysis for nitrate and total dissolved solids data collected at MW-15, -16, -18, and -19. The analysis will start with January 2000. This requirement is based on the changes in the ground water quality at MW-16 and -19 over the past two permit cycles, the high nitrate concentrations at MW-15, and the absence of an upgradient well for the Wanapum water bearing zone.

Ecology understands the fifteen year analysis extends beyond the four year cycle for this permit. Therefore the analysis will extend into the next permit.

C. Operations and Maintenance

Ecology requires dischargers to take all reasonable steps to properly operate and maintain their wastewater treatment system in accordance with state regulations (WAC 173-240-080 and WAC 173-216-110). The facility has submitted an operation and maintenance manual for the wastewater facility; CES, 2006. The most recent update was submitted to Ecology in October 2008.

Implementation of the procedures in the Operation and Maintenance Manual ensures the facility's compliance with the terms and limits in the permit and ensures the facility provides AKART to the waste stream.

Storage Pond Leak Detection

In response to a request from Ecology, ConAgra-LW submitted a leak detection plan for the small (40 MG) and large (126MG) storage ponds. The purpose of the plans for these single lined structures was to periodically demonstrate the structural integrity of the liners and their ability to protect the ground water beneath them.

The plans for both are comprised of two components: an annual visual inspection and a comprehensive leak test once per permit cycle. The comprehensive test is performed using a water balance method.

$$\text{Leakage Rate} = \text{pond elevation change} - \text{pond evaporation}$$

ConAgra-LW estimated the leakage rate for the small pond in August 2007; CES, 2008. The average estimated leakage rate was 0 in/day. This was expected given the recent construction of the pond and the QA/QC that was used during the construction and liner installation.

The large pond was visually inspected in August 2005; Golder Associates, 2005. No significant signs of distress were found.

The proposed permit requires the facility to report the results of the annual visual inspections of the storage ponds by April 15th of each year. This is in accordance with the procedures for liner inspection as submitted by ConAgra; CES, 2006c.

The permit also requires that ConAgra-LW conduct a comprehensive leak test on each pond once during the permit cycle as described in the leak detection plan (Appendix B2, O&M Manual) and must submit the results to Ecology. Taking into consideration the age of the ponds and to allow simultaneous testing, the proposed permit requires the facility to conduct the comprehensive test for each in 2011.

D. Groundwater Data Interpretive Review Report

The proposed permit requires ConAgra-LW to submit a groundwater data interpretive report that will, in part, evaluate the historical ground water data, processing facility and wastewater system operations to determine, if possible, the cause of the significant increasing trends in the nitrate and TDS concentrations at MW-16 & 19, and the high nitrate concentrations at MW-15 & 16.

Recommendations will also be submitted for any changes that are needed at the processing facility or wastewater system and a timeline for their implementation. **(See Appendix D, Response to Fact Sheet comment #2 and #6 for changes made to this narrative)**

E. Solid Waste Control Plan

A plan has been submitted to Ecology (ConAgra, 2006) and was reviewed by Ecology in preparation of this permit. The review was based on Ecology's recent guidance that is attached (Addendum 2) and can be found online at www.ecy.wa.gov/biblio/0710024.html. The plan was in general compliance with the guidance. Some additional information is needed:

- A description of any contingency plans for solid waste handling
- The name and contact information for each facility receiving the solid waste

The proposed permit requires an update to the solid waste plan to meet the requirements of Ecology's guidance.

F. Spill Plan

The current updated O&M manual (CES, 2006) has an emergency procedures section that addresses, in part, process water spills, storage pond leaks and dam failures, and sudden water releases. A review of information shows that the list of key individuals and associated phone numbers in case of an emergency does not include Ecology's Spokane regional office 24-hr number.

Ecology has determined the current O&M manual is sufficient for a spill plan. It is requested that ConAgra-LW submit with its next update the list of key individuals to include Ecology's Spokane regional office's 24-hr phone number to report any spill; 509.329.3400.

G. Best Management Practices

Several BMPs for the management of the sprayfields are given in the current permit; Section S5.D. These will be carried over into the proposed permit.

H. Mud Settling Ponds Sampling and Monitoring

Raw potatoes that are brought to the facility are cleaned and transported into the processing facility by a recycling/recirculating water system that is separate from the process wastewater system. As the potatoes are transported they are washed of any dirt and debris. A portion of this dirt/debris laden recycled water is periodically removed and replaced with clean water. The dirt/debris water is first screened then sent to one of two earthen bermed unlined ponds to allow the dirt to settle. The ponds are alternately used to allow for dewatering, drying and mechanical removal of the settled solids.

The periodic removal of the solids from these ponds likely results in a disruption of the integrity of the earthen bottom of the ponds. This most likely increases the potential for the leaching/percolation of water and dissolved solutes from the pond and potentially to the ground water.

To help characterize the potential of residual dissolved fertilizer nutrients and herbicides/pesticides in the mud water from potentially entering the ground water, the proposed permit will require ConAgra-LW to sample and monitor the water entering the mud settling ponds and the sediments in the ponds. The list of test parameters was based, in part, on pesticides that are generally used for potato crops. The Permittee will submit a sampling protocol for the influent and sediments.

(See Appendix D, Response to Fact Sheet comment #3, #7, and #8 for changes made to this narrative)

I. General Conditions

Ecology bases the standardized General Conditions on state and federal law and regulations. They are included in all State Waste Discharge permits issued by Ecology.

VI. PERMIT ISSUANCE PROCEDURES

A. Permit Modifications

Ecology may modify this permit to impose numerical limits, if necessary to comply with water quality standards for ground waters, based on new information from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

Ecology may modify this permit to comply with new or amended state regulations.

B. Proposed Permit Issuance

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limits and conditions believed necessary to control toxics, and to protect human health and the beneficial uses of waters of the State of Washington.

Ecology proposes that the permit be issued for four years. This is less than the standard five year permit cycle. Ecology's decision to re-issue for a **four (4)** year period was based on the number of permits expiring during the same year and the agency's ability to reissue the permits in a timely manner.

VII. REFERENCES FOR TEXT AND APPENDICES

CES, 2008. ConAgra Foods Lamb Weston, Inc., Connell, Small Pond Leak Test. February.

CES, 2008. 2007 Farm System Operations Summary and 2008 Irrigation and Crop Management Plan. April.

CES, 2007. 2006 Farm System Operations Summary and 2007 Irrigation and Crop Management Plan. April.

CES, 2006a. 2005 Farm System Operations Summary and 2006 Irrigation and Crop Management Plan. April.

CES, 2006b. ConAgra Foods Connell Processing Plant Process Water Treatment System Operations and Maintenance Manual. May.

CES, 2006c. Procedures for Liner Inspection, ConAgra Foods – Connell, Washington Facility. October.

CES, 2005. 2004 Farm System Operations Summary and 2005 Irrigation and Crop Management Plan. April.

CES, 2000. Lamb-Weston Connell Soils Monitoring Plan. September

CES, 1999a. Hydrogeologic Report, Lamb-Weston, Connell, Connell, Washington. November.

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ConAgra Foods. 2006. Solid Waste Management Plan. August.

Gavlak, R., D. Horneck, R.O. Miller, and J. Kotuby-Amacher. Soil, Plant And Water Reference Methods For The Western Region, 2nd edition 2003.

Golder Associates, 2005. 2005 Dam Safety Inspection, E.N.S. Phase I Containment Ponds. November.

Kirkbride Group. 1998. Lamb-Weston, Inc. Connell, Washington, Process Water Treatment System, Engineering report – Addendum, Phase II System Improvements. August

Washington State Department of Ecology, 1993. Guidelines for Preparation of Engineering Reports for Industrial Wastewater Land Application Systems, Ecology Publication # 93-36. 20 pp.

Washington State Department of Ecology.

Laws and Regulations

(<http://www.ecy.wa.gov/laws-rules/index.html>)

Permit and Wastewater Related Information

(<http://www.ecy.wa.gov/programs/wq/wastewater/index.html>)

Washington State Department of Ecology, 2005. Implementation Guidance for the Ground Water Quality Standards, Ecology Publication # 96-02. Revised October.

Washington State Department of Ecology, 2007. Focus Sheet on Solid Waste Control Plan, Developing a Solid Waste Control Plan for Industrial Wastewater Discharge Permittees, February. Ecology publication # 07-10-024.

APPENDICES

APPENDIX A--PUBLIC INVOLVEMENT INFORMATION

Ecology proposes to reissue a permit to ConAgra Foods Lamb Weston. The permit prescribes operating conditions and wastewater discharge limits. This fact sheet describes the facility and Ecology's reasons for requiring permit conditions.

Ecology placed a Public Notice of Application on January 9, 2009 and January 16, 2009 in the Tri-City Herald to inform the public about the submitted application and to invite comment on the reissuance of this permit.

The permit, fact sheet and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below.

You may obtain further information from Ecology by telephone at (509) 329-3524 or by writing to the Permit Coordinator at the address listed below.

Water Quality Permit Coordinator
Department of Ecology
4601 North Monroe Street
Spokane, WA 99205-1295

The primary author of this permit and fact sheet is Don Nichols.

APPENDIX B--GLOSSARY

AKART - The acronym for “all known, available, and reasonable methods of prevention, control and treatment.” AKART is a technology-based approach to limiting pollutants from wastewater discharges which requires an engineering judgment and an economic judgment. AKART must be applied to all wastes and contaminants prior to entry into waters of the state in accordance with RCW 90.48.010 and 520, WAC 173-200-030(2)(c)(ii), and WAC 173-216-110(1)(a).

Ammonia - Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Background water quality - The concentrations of chemical, physical, biological or radiological constituents or other characteristics in or of ground water at a particular point in time upgradient of an activity that has not been affected by that activity, [WAC 173-200-020(3)]. Background water quality for any parameter is statistically defined as the 95% upper tolerance interval with a 95% confidence based on at least eight hydraulically upgradient water quality samples. The eight samples are collected over a period of at least one year, with no more than one sample collected during any month in a single calendar year.

Best Management Practices (BMPs) - Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

Bypass - The intentional diversion of waste streams from any portion of the collection or treatment facility.

Composite Sample - A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite"(collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots.

Continuous Monitoring - Uninterrupted, unless otherwise noted in the permit.

Distribution Uniformity - The uniformity of infiltration (or application in the case of sprinkle or trickle irrigation) throughout the field expressed as a percent relating to the average depth infiltrated in the lowest one-quarter of the area to the average depth of water infiltrated.

Enforcement limit - The concentration assigned to a contaminant in the ground water at the point of compliance for the purpose of regulation, [WAC 173-200-020(11)]. This limit assures that a ground water criterion will not be exceeded and that background water quality will be protected.

Engineering Report - A document, signed by a professional licensed engineer, which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Ground water - Water in a saturated zone or stratum beneath the surface of land or below a surface water body.

Grab Sample - A single sample or measurement taken at a specific time or over as short period of time as is feasible.

Industrial Wastewater - Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Interference - A discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

- Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and
- Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA), sludge regulations appearing in 40 CFR Part 507, the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

Maximum Daily Discharge Limit - The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Maximum Day Design Flow (MDDF) - The largest volume of flow anticipated to occur during a one-day period, expressed as a daily average.

Maximum Month Design Flow (MMDF) - The largest volume of flow anticipated to occur during a continuous 30-day period, expressed as a daily average.

Maximum Week Design Flow (MWDF) - The largest volume of flow anticipated to occur during a continuous 7-day period, expressed as a daily average.

pH - The pH of a liquid measures its acidity or alkalinity. It is the negative logarithm of the hydrogen ion concentration. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

Soil Scientist - An individual who is registered as a Certified or Registered Professional Soil Scientist or as a Certified Professional Soil Specialist by the American Registry of Certified Professionals in Agronomy, Crops, and Soils or by the National Society of Consulting Scientists or who has the credentials for membership. Minimum requirements for eligibility are: possession of a baccalaureate, masters, or doctorate degree from a U.S. or Canadian institution with a minimum of 30 semester hours or 45 quarter hours professional core courses in agronomy, crops or soils, and have 5,3,or 1 years, respectively, of professional experience working in the area of agronomy, crops, or soils.

Solid waste - All putrescible and non-putrescible solid and semisolid wastes including, but not limited to, garbage, rubbish, ashes, industrial wastes, swill, sewage sludge, demolition and construction wastes, abandoned vehicles or parts thereof, contaminated soils and contaminated dredged material, and recyclable materials.

Soluble BOD₅ – Determining the soluble fraction of Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of soluble organic material present in an effluent that is utilized by bacteria. Although the soluble BOD test is not specifically described in Standard Methods, filtering the raw sample through at least a 1.2 um filter prior to running the standard BOD₅ test is sufficient to remove the particulate organic fraction.

State Waters - Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater - That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Technology-based Effluent Limit - A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Dissolved Solids - That portion of total solids in water or wastewater that passes through a specific filter.

Water Quality-based Effluent Limit - A limit on the concentration of an effluent parameter that is intended to prevent pollution of the receiving water.

APPENDIX C--TECHNICAL CALCULATIONS

GROUNDWATER: BACKGROUND CONCENTRATIONS

The Sanitas for Groundwater and Environmental Media (v. 8.6) statistical program was used to estimate the background concentration values for nitrate and total dissolved solids (TDS). Data submitted by ConAgra-LW for MW-12 for the period January 2000 – August 2008 was used. A graphical presentation of the data analysis is given in Addendum 2.

Before the two data sets were combined, a two-tailed t-test analysis was done to compare the Jan 2000-Dec 2003 and the Jan 2005-Aug 2008 data sets for nitrate and TDS to determine if there was any significant differences in the means. The variances of the data sets were assumed to be unequal. There is no significant differences in the data set mean values.

BACKGROUND ANALYSIS:

Nitrate

- N=92; mean = 10.5 mg/L; max. = 16 mg/L; min. = 5.11 mg/L; std. dev. = 1.76
- Outlier analysis: the Nov. 2002 value (5.11 mg/L) was removed as an outlier.
- Test for Seasonality of the data: none was detected.
- Test for a significant trend in the data using Sen's slope: no significant trend was found
- Tolerance Limit: 16 mg/L

TDS

- N=92; mean = 368 mg/L; max. = 420 mg/L; min. = 276 mg/L; std. dev. = 27.6
- Outlier analysis: the Sept. 03, Feb. 07, Mar 08, and June 08 values were removed as an outlier.
- Test for Seasonality of the data: none was detected.
- Test for a significant trend in the data using Sen's slope: no significant trend was found
- Tolerance Limit: 413 mg/L

APPENDIX D--RESPONSE TO COMMENTS

ConAgra Foods submitted comments and tables of test parameters for the draft permit and fact sheet during the 30-day public comment period that ended April 6, 2009. Attached are ConAgra's comments and Ecology's responses.

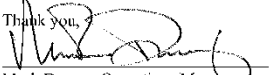
COMMENTS TO SWDP 5328, CONAGRA FOODS - CONNELL	RESPONSES
<div data-bbox="235 409 447 506" data-label="Image"> </div> <div data-bbox="621 422 884 526" data-label="Text"> <p>ConAgra Foods Lamb Weston, Inc. Connell Plant 811 West Gum Street P.O. Box 799 Connell, WA 99326</p> </div> <div data-bbox="621 542 787 586" data-label="Text"> <p>TEL: 509-234-5511 FAX: 509-234-5515</p> </div> <div data-bbox="197 584 300 609" data-label="Text"> <p>April 3, 2009</p> </div> <div data-bbox="197 625 394 706" data-label="Text"> <p>Mr. Don Nichols Department of Ecology 4601 N Monroe Spokane, WA 99205-1295</p> </div> <div data-bbox="197 742 869 784" data-label="Text"> <p>SUBJECT: Review of DRAFT State Waste Discharge Permit No. ST 5328 and Fact Sheet ConAgra Foods Lamb Weston Inc., Connell, Washington</p> </div> <div data-bbox="197 821 331 844" data-label="Text"> <p>Dear Mr. Nichols:</p> </div> <div data-bbox="197 860 915 961" data-label="Text"> <p>ConAgra Foods Lamb Weston Inc., (ConAgra-LW) has reviewed the DRAFT State Waste Discharge Permit No. ST 5328 and Fact Sheet and has provided comments on suggested changes. The changes reflect our discussions in the meeting in Connell on March 11, 2009. ConAgra-LW respectfully submits the following comments and corrections. Text from the proposed Permit and Fact Sheet are <i>“quoted in italics”</i>. Recommended changes are <u>underlined</u> to indicate additions.</p> </div> <div data-bbox="197 979 338 1002" data-label="Section-Header"> <p><u>DRAFT PERMIT</u></p> </div> <div data-bbox="197 1016 648 1057" data-label="Text"> <p>Comment #1: Page 3 of 26, S8. “MUD SETTLING POND REPLACEMENT”</p> </div> <div data-bbox="327 1063 806 1105" data-label="Text"> <p>Should be changed to: “<u>MUD SETTLING PONDS SAMPLING & MONITORING</u>”</p> </div> <div data-bbox="327 1112 915 1271" data-label="Text"> <p>This change reflects the discussions held between ConAgra-LW and Don Nichols of the Washington State Department of Ecology on March 11, 2009, and is necessary to clarify instead of submitting engineering plans and specifications to remove the unlined ponds and replace with new (lined or equivalent) structures, ConAgra-LW would be willing to sample and monitor the water entering the mud settling ponds and sediments removed from them during the permit cycle according to the schedules listed in the mud settling ponds water and sediment monitoring tables (attached).</p> </div> <div data-bbox="327 1276 903 1338" data-label="Text"> <p>Specific sampling protocols (e.g., how samples will be obtained) will be submitted to Ecology no later than September 1, 2009. Reporting the laboratory data to Ecology would occur with the December discharge monitoring report each year.</p> </div>	<div data-bbox="1050 318 1980 391" data-label="Text"> <p>Response #1: The heading in the Table of Contents of the draft permit will be changed to the suggested language.</p> </div>

COMMENTS TO SWDP 5328, ConAgra Foods - Connell	RESPONSES
<p>Comments to DRAFT State Waste Discharge Permit No. ST 5328 and Fact Sheet Mr. Don Nichols April 3, 2009 Page 2</p> <hr/> <p>Comment #2: Page 3 of 26, S9. "GROUND WATER EVALUATION" Should be changed to: "<u>GROUND WATER DATA INTERPRETIVE REVIEW REPORT</u>" This change is necessary to clarify an interpretive review of the ground water trends and flow patterns will be the primary focus of the report. The report would compare ConAgra-LW process water land treatment/reuse system farming operations and land uses of adjacent properties to ground water trends. The report will also revisit the Hydrogeologic Report prepared by CES in 1999 and use recent ground water quality data evaluate the conclusion that monitoring wells MW-12, MW-18, and MW-19 are hydrogeologically connected. The evaluation would use tools such as Stiff and tri-linear diagrams to compare the ground water anion/cation composition from these monitoring wells. The same method would be used to compare ground water in MW-15 and MW-16. The report will not be used for the purpose of installing new monitoring wells. The report would be submitted to Ecology by October 31, 2009.</p> <p>Comment #3: Page 4 of 26, S8. "Mud Settling Pond Replacement – Plans & Specifications, Engineering" Should be changed to: "<u>MUD SETTling PONDS SAMPLING & MONITORING</u>" See DRAFT PERMIT Comment #1 explanation.</p> <p>Comment #4: Page 4 of 26, S9. "Ground Water Quality Evaluation Report" Should be changed to: "<u>Ground Water Data Interpretive Review Report</u>" See DRAFT PERMIT Comment #2 explanation.</p> <p>Comment #5: Page 4 of 26, S9. "August 1, 2009" Should be changed to: "<u>October 31, 2009</u>" See DRAFT PERMIT Comment #2 explanation.</p> <p>Comment #6: Page 21 of 26, S8. "MUD SETTling POND REPLACEMENT" Should be changed to: "<u>MUD SETTling PONDS SAMPLING & MONITORING</u>" See DRAFT PERMIT Comment #1 explanation.</p> <p>Comment #7: Page 21 of 26, S8. "No later than September 1, 2009 the Permittee shall submit to Ecology plans and specifications and an engineering report addendum for a lined structure that will replace the current earthen lined settling ponds that removes mud and debris from</p>	<p>Response #2: Agreed</p> <p>Response #3: Agreed</p> <p>Response #4: Agreed</p> <p>Response #5: Agreed to change due date to November 2, 2009 instead. October 31, 2009 falls on a Saturday.</p> <p>Response #6: Section S8 will be re-titled to 'Mud Settling Ponds Sampling and Monitoring' and reworded from:</p> <p style="padding-left: 40px;">No later than September 1, 2009 the Permittee shall submit to Ecology plans and specifications and an engineering report addendum for a lined structure that will replace the current earthen lined settling ponds that removes mud and debris from the raw receiving wastewater. The addendum report shall include a statement of why, when, and where the lined ponds will be constructed.</p> <p>To: "No later than September 1, 2009 the Permittee shall submit to Ecology specific sampling protocols for the influent and sediment for the testing of the mud settling ponds required in Section S2.H of this permit."</p> <p>The list of mud pond influent and sediment test parameters will be added to S2.</p> <p>A section will be added to S3 to report the test results with the December discharge monitoring report annually.</p> <p>Response #7: See response #6.</p>

COMMENTS TO SWDP 5328, CONAGRA FOODS - CONNELL	RESPONSES
<p>Comments to DRAFT State Waste Discharge Permit No. ST 5328 and Fact Sheet Mr. Don Nichols April 3, 2009 Page 3</p> <hr/> <p><i>the raw receiving wastewater. The addendum report shall include a statement of why, when, and where the lined ponds will be constructed.</i></p> <p>Should be changed to: <u>"The Permittee shall sample and monitor the water entering the mud settling ponds and sediments removed from them during the permit cycle according to the schedules listed. Specific sampling protocols (e.g., how composite samples will be obtained) will be submitted to Ecology no later than September 1, 2009. The laboratory data will be reported to Ecology with the December discharge monitoring report each year."</u></p> <p>See DRAFT PERMIT Comment #1 explanation.</p> <p>Comment #8: Page 21 of 26, S9. "GROUND WATER EVALUATION" Should be changed to: "GROUND WATER DATA INTERPRETIVE REVIEW REPORT" See DRAFT PERMIT Comment #2 explanation.</p> <p>Comment #9: Page 21 of 26, S9, first sentence. "No later than August 1, 2009, the Permittee will submit a ground water evaluation report that contains:..." Should be changed to: "No later than October 31, 2009, the Permittee will submit an interpretive ground water data review report that contains:..." See DRAFT PERMIT Comment #2 explanation for a description of the contents of the report.</p> <p>Comment #10: Page 21 of 26, S9, "a". "All ground water data from January 2000..." Should be changed to: "All ground water data from January 2000 to present including a schematic of ground water flow along with Stiff and tri-linear diagrams of MW-12, MW-15, MW-16, MW-18, and MW-19." This change is necessary to clarify ground water data January 2000 to present will be used to develop the report and reaffirm conclusions from the 1999 Hydrogeologic Report. See DRAFT PERMIT Comment #2 explanation.</p> <p>Comment #11: Page 21 of 26, S9, "3". "An evaluation and determination of a means to determine the upgradient (background) ground water quality of the Wanapum water bearing zone." Should be changed to: "An evaluation and determination of a means to determine the upgradient (background) ground water quality of the Wanapum water bearing zone with the understanding that no new monitoring wells will be installed." This change is necessary to clarify the report will not be used as a hydrogeologic investigation to install an upgradient (background) monitoring well to replace MW-17. See DRAFT PERMIT Comment #2 explanation.</p>	<p>Response #8: Agreed</p> <p>Response #9: Will change the groundwater report due date to November 2, 2009. The wording in Section S9 will also be edited to show the groundwater review will include land uses of adjacent lands, and the connectivity of MW-12, -18, and -19, and MW-15 and -16 (as described in Comment #2).</p> <p>Response #10: Agreed. The proposed language will be added to the permit.</p> <p>Response #11: The proposed additional wording will not be included in the permit. Ecology is aware of the possible reasons for the absence of water at MW-17 that were expressed in the 1999 HG Report, but does not want to completely rule out the installation of a new upgradient well for the Wanapum zone based on additional groundwater information that has been gathered by ConAgra during the past two permit cycles. ConAgra is required to submit a groundwater data interpretation report, not a hydrogeologic report which is used to locate monitoring wells. The interpretive report may conclude that a new well is needed, and Ecology understands that its installation would only occur after an updated HG report is done to locate the well.</p>

COMMENTS TO SWDP 5328, CONAGRA FOODS - CONNELL	RESPONSES
<p>Comments to DRAFT State Waste Discharge Permit No. ST 5328 and Fact Sheet Mr. Don Nichols April 3, 2009 Page 4</p> <hr/> <p><u>DRAFT FACT SHEET</u></p> <p>Comment #1: Cover page, Summary, 2nd paragraph, last sentence. “The permit will require ConAgra-LW to submit engineering, and plans and specifications to remove unlined settling ponds used to remove dirt and debris from the raw potatoes.” Should be changed to: “The permit will require ConAgra-LW to <u>sample and monitor the water entering the mud settling ponds and sediments removed from them during the permit cycle according to the schedules listed in the mud settling ponds water and sediment monitoring tables.</u>” See DRAFT PERMIT Comment #1.</p> <p>Comment #2: Table of Contents, Part V, “D”. “Hydrogeologic Investigation” Should be changed to: “<u>Ground Water Data Interpretive Review Report</u>” See DRAFT PERMIT Comment #2.</p> <p>Comment #3: Table of Contents, Part V, “H”. “Mud Settling Pond Replacement” Should be changed to: “<u>Mud Settling Ponds Sampling & Monitoring</u>” See DRAFT PERMIT Comment #1.</p> <p>Comment #4: Page 15 of 31, 1st sentence (Enforcement Limits). “There is an active feedlot located topographically upgradient along the western boundary of the ConAgra-LW farm sprayfield; Fig. 2. Ecology has no operational information on this facility.” Should be changed to: “There is an active feedlot located topographically upgradient along the western boundary of the ConAgra-LW <u>Farm</u>; Fig. 2. Ecology has no operational information on this facility.” This correction is necessary to clarify the location of the feedlot with respect to the entire ConAgra-LW Farm, not an individual ConAgra-LW Farm field.</p> <p>Comment #5: Page 19 of 31, D. “Hydrogeologic Investigation” Should be changed to: “<u>Ground Water Data Interpretive Review Report</u>” See DRAFT PERMIT Comment #2.</p> <p>Comment #6: Page 19 of 31, D. “The proposed permit requires ConAgra-LW to submit a hydrogeologic investigation report that will...” Should be changed to: “The proposed permit requires ConAgra-LW to submit a <u>ground water data interpretive review report that will...</u>” See DRAFT PERMIT Comment #2.</p>	<p>Response #1: Agreed. The cover page narrative will be changed.</p> <p>From: The permit will require ConAgra-LW to submit engineering, and plans and specifications to remove unlined settling ponds used to remove dirt and debris from the raw potatoes.</p> <p>To: The permit will require ConAgra-LW to sample and monitor the water entering the mud settling ponds and its sediments for a variety of inorganic and organic parameters.</p> <p>Response #2: The table of contents will be changed. The narrative in Section V, part D will also be changed.</p> <p>From: The proposed permit requires ConAgra-LW to submit a hydrogeologic investigation report that will, in part, evaluate....</p> <p>To: The proposed permit requires ConAgra-LW to submit a groundwater interpretive report that will, in part, evaluate</p> <p>Response #3: The table of contents will be changed. The narrative in Section V, part H will also be changed.</p> <p>From: To reduce the potential of residual dissolved fertilizer nutrients and herbicides/pesticides in the mud water from potentially enteing th groundwater, the proposed permit will require ConAgra-LW to replace the unlined earthen settling ponds with lined impoundments.</p> <p>To: To help characterize the potential of residual dissolved fertilizer nutrients and herbicides/pesticides in the mud water from potentially entering the ground water, the proposed permit will require ConAgra-LW to sample and monitor the water entering the mud settling ponds and the sediments in the ponds. The list of test parameters was based, in part, on pesticides that are generally used for potato crops. The Permittee will submit a sampling protocol for the influent and sediments.</p>

COMMENTS TO SWDP 5328, CONAGRA FOODS - CONNELL	RESPONSES
<p>Comments to DRAFT State Waste Discharge Permit No. ST 5328 and Fact Sheet Mr. Don Nichols April 3, 2009 Page 4</p> <hr/> <p><u>DRAFT FACT SHEET</u></p> <p>Comment #1: Cover page, Summary, 2nd paragraph, last sentence. “The permit will require ConAgra-LW to submit engineering, and plans and specifications to remove unlined settling ponds used to remove dirt and debris from the raw potatoes.”</p> <p>Should be changed to: “The permit will require ConAgra-LW to <u>sample and monitor the water entering the mud settling ponds and sediments removed from them during the permit cycle according to the schedules listed in the mud settling ponds water and sediment monitoring tables.</u>”</p> <p>See DRAFT PERMIT Comment #1.</p> <p>Comment #2: Table of Contents, Part V, “D”. “Hydrogeologic Investigation”</p> <p>Should be changed to: “<u>Ground Water Data Interpretive Review Report</u>”</p> <p>See DRAFT PERMIT Comment #2.</p> <p>Comment #3: Table of Contents, Part V, “H”. “Mud Settling Pond Replacement”</p> <p>Should be changed to: “<u>Mud Settling Ponds Sampling & Monitoring</u>”</p> <p>See DRAFT PERMIT Comment #1.</p> <p>Comment #4: Page 15 of 31, 1st sentence (Enforcement Limits). “There is an active feedlot located topographically upgradient along the western boundary of the ConAgra-LW farm sprayfield; Fig. 2. Ecology has no operational information on this facility.”</p> <p>Should be changed to: “There is an active feedlot located topographically upgradient along the western boundary of the ConAgra-LW <u>Farm</u>; Fig. 2. Ecology has no operational information on this facility.”</p> <p>This correction is necessary to clarify the location of the feedlot with respect to the entire ConAgra-LW Farm, not an individual ConAgra-LW Farm field.</p> <p>Comment #5: Page 19 of 31, D. “Hydrogeologic Investigation”</p> <p>Should be changed to: “<u>Ground Water Data Interpretive Review Report</u>”</p> <p>See DRAFT PERMIT Comment #2.</p> <p>Comment #6: Page 19 of 31, D. “The proposed permit requires ConAgra-LW to submit a hydrogeologic investigation report that will...”</p> <p>Should be changed to: “The proposed permit requires ConAgra-LW to submit a <u>ground water data interpretive review report that will...</u>”</p> <p>See DRAFT PERMIT Comment #2.</p>	<p>Response #4: Agreed, the language will be changed.</p> <p>Response #5: Agreed, the title of the section will be changed.</p> <p>Response #6: Agreed, the language will be changed.</p>

COMMENTS TO SWDP 5328, CONAGRA FOODS - CONNELL	RESPONSES
<p>Comments to DRAFT State Waste Discharge Permit No. ST 5328 and Fact Sheet Mr. Don Nichols April 3, 2009 Page 5</p> <hr/> <p>Comment #7: Page 20 of 31, H. <i>“Mud Settling Pond Replacement”</i> Should be changed to: <u>“Mud Settling Ponds Sampling & Monitoring”</u> See DRAFT PERMIT Comment #1.</p> <p>Comment #8: Page 20 of 31, H., 3rd paragraph. <i>“To reduce the potential of residual dissolved fertilizer nutrients and herbicides/pesticides in the mud water from potentially entering the ground water, the proposed permit will require ConAgra-LW to replace the unlined earthen settling ponds with lined impoundments.”</i> Should be changed to: <i>“To reduce the potential of residual dissolved fertilizer nutrients and herbicides/pesticides in the mud water from potentially entering the ground water, the proposed permit will require ConAgra-LW to <u>sample and monitor the water entering the mud settling ponds and sediments removed from them during the permit cycle according to the schedules listed in the mud settling ponds water and sediment monitoring tables.</u>”</i> See DRAFT PERMIT Comment #1.</p> <p>Thank you for the opportunity to meet with ConAgra-LW and to provide these comments and factual clarifications. If you have any questions or concerns regarding this letter please feel free to call me or Will Thielemann at (509) 234-5511.</p> <p>Thank you,  Mark Dorsey, Operations Manager ConAgra Foods Lamb Weston, Inc.</p> <p>MD/sjr Att: Mud Settling Ponds - Sediment Monitoring Table Mud Settling Ponds - Water Monitoring Table c: Will Thielemann, Larry Smith, Adam Hedrick, Mark Dorsey – ConAgra-LW, Connell; Paul Halberstadt, Ruth Dollar – ConAgra-LW, Kennewick Sean Beyke – Cascade Earth Sciences Doc: Permit and Fact Sheet Comment Letter 4-3-2009.docx</p>	<p>Response #7: Agreed, the language will be changed.</p> <p>Response #8: The narrative in Section V, part H was changed. See Response #3.</p>

COMMENTS TO SWDP 5328, CONAGRA FOODS - CONNELL

Mud Settling Ponds - Water Monitoring Schedule
 ConAgra Foods Lamb Weston - Connell, Washington

Parameter ¹	Units	Frequency ²	Sample Type
FDS	mg/L	2 / year	grab
NH ₃ -N	mg/L	2 / year	grab
NO ₃ -N	mg/L	2 / year	grab
pH	mg/L	2 / year	grab
TS	mg/L	2 / year	grab
TVS	mg/L	2 / year	grab
VDS	mg/L	2 / year	grab
Atrazine	mg/L	2 / year	grab
Chlorothalonil	mg/L	2 / year	grab
Endosulfan	mg/L	2 / year	grab
EPTC	mg/L	2 / year	grab
ETU	mg/L	2 / year	grab
Metenoxam	mg/L	2 / year	grab
Methamidophos	mg/L	2 / year	grab
Metolachlor	mg/L	2 / year	grab
Metribuzin	mg/L	2 / year	grab
MITC	mg/L	2 / year	grab
PCNB	mg/L	2 / year	grab
1,3 dichloropropene	mg/L	2 / year	grab

NOTES:

Abbreviations: EPTC = ethyl dipropylthiocarbamate, ETU = ethylenethiourea, FDS = fixed dissolved solids, mg/L = milligrams per liter, MITC = methylisothiocyanate, NH₃-N = ammonia nitrogen, NO₃-N = nitrate nitrogen, PCNB = pentachloronitrobenzene, TS = Total Solids, TVS = Total Volatile Solids, VDS = total volatile dissolved solids.

¹ Listed pesticides are those commonly used on potato crops (personal communication with Washington State Potato Commission, Moses Lake, Washington on March 27, 2009 and April 2, 2009 and as suggested by the Washington State Department of Ecology on March 26, 2009 and April 2, 2009).

² May and October.

COMMENTS TO SWDP 5328, CONAGRA FOODS - CONNELL

Mud Settling Ponds - Sediment Monitoring Schedule
 ConAgra Foods Lamb Weston - Connell, Washington

Parameter ¹	Units	Frequency ²	Sample Type
NH ₄ -N	mg/kg	1 / year	composite
TKN	mg/kg	1 / year	composite
TS	mg/kg	1 / year	composite
TFS	mg/kg	1 / year	composite
TVS	mg/kg	1 / year	composite
Atrazine	mg/kg	1 / year	composite
Chlorothalonil	mg/kg	1 / year	composite
Endosulfan	mg/kg	1 / year	composite
EPTC	mg/kg	1 / year	composite
ETU	mg/kg	1 / year	composite
Mefenoxam	mg/kg	1 / year	composite
Methamidophos	mg/kg	1 / year	composite
Metolachlor	mg/kg	1 / year	composite
Metribuzin	mg/kg	1 / year	composite
MITC	mg/kg	1 / year	composite
PCNB	mg/kg	1 / year	composite
1,3 dichloropropene	mg/kg	1 / year	composite

NOTES:

Abbreviations: EPTC = ethyl dipropylthiocarbamate, ETU – ethylenethiourea, mg/kg – milligrams per kilogram, MITC = methylisothiocyanate, NH₄-N = ammonium nitrogen, PCNB – pentachloronitrobenzene, TFS = total fixed solids, TKN = total Kjeldahl nitrogen, TS = Total Solids, TVS = Total Volatile Solids

¹ Listed pesticides are those commonly used on potato crops (personal communication with Washington State Potato Commission, Moses Lake, Washington on March 27, 2009 and April 2, 2009 and as suggested by the Washington State Department of Ecology on March 26, 2009 and April 2, 2009).

² Composite samples of sediment will be obtained annually following removal and dry down of material from mud settling ponds.