

Technical Memorandum #1



To: Don Gatchalian (Yakima County)
From: Mike Murray (HDR)
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Date: August 27, 2013
Subject: Scope 1, Task 2 - Regulatory Review

Purpose

The Lower Yakima Valley Groundwater Advisory Committee (GWAC) through Yakima County Public Services selected HDR Engineering (HDR) and Pacific Groundwater Group (PGG) to assist in accomplishing two Scopes of Work. The first scope (lead by HDR) is a study to identify applicable local, state, and federal regulatory requirements that control and manage nitrates in groundwater, identify Best Management Practices (BMPs), and evaluate the effectiveness of these BMPs. The second scope (lead by PGG) focuses on completing the initial site assessment activities begun by the GWAC and others.

The purpose of the Regulatory Review is to identify local, state, and federal regulations, policy, and guidance on control and management of nitrates for groundwater protection. The review is summarized below in this technical memorandum (Technical Memorandum #1).

The baseline document for the review is the Washington State Department of Ecology (Ecology) report "Lower Yakima Valley Groundwater Quality: Preliminary Assessment and Recommendations Document," (Ecology 2010). The report summarizes information regarding nitrates and bacteria pollution in groundwater in the Lower Yakima Valley. A brief overview of existing regulatory framework is given in Table 3 of the report. This table provided a starting point for HDR's regulatory review.

Background

Elevated concentrations of nitrate have been quantified in groundwater in the Lower Yakima Valley. The nitrate concentration levels in groundwater indicate impacts by human activity and levels in some areas of the Valley are a concern to human health. In response to these elevated concentration levels and concerns raised by citizens, regulatory agencies, and others, Yakima County submitted a request to Ecology to designate the Lower Yakima Valley as a groundwater management area (GWMA) under state code pertaining to Groundwater Management Areas and Programs (WAC 173-100). In November 2011, Ecology authorized and provided startup funds for Yakima County to develop a groundwater management program. In April 2012, the GWAC was appointed to oversee management activities with the goal of reducing nitrate concentrations in groundwater to below the Washington State drinking water standards. The GWAC includes a diverse set of individuals representing local, state, and federal agencies, private citizen groups, and local industry.

The area comprising the Lower Yakima Valley GWMA is shown in the figure on page 3. The area spans from Union Gap to Grandview and includes the cities of Sunnyside, Zillah, Granger, Grandview, and Mabton, as well as the small communities of Outlook, Buena, and Crewport.

Regulatory Review

HDR has initiated the identification and gathering of data pertaining to federal, state, and local agency regulatory requirements regarding nitrates in the GWMA. The review includes requirements for 'nitrogen management' not just regulations that specifically address nitrates. This Technical Memorandum is presented to the GWAC with the intent that the committee will provide additional input on regulatory, policy, and guidance from the array of federal, state, and local agencies that have authority on overall nitrogen management in the Valley.

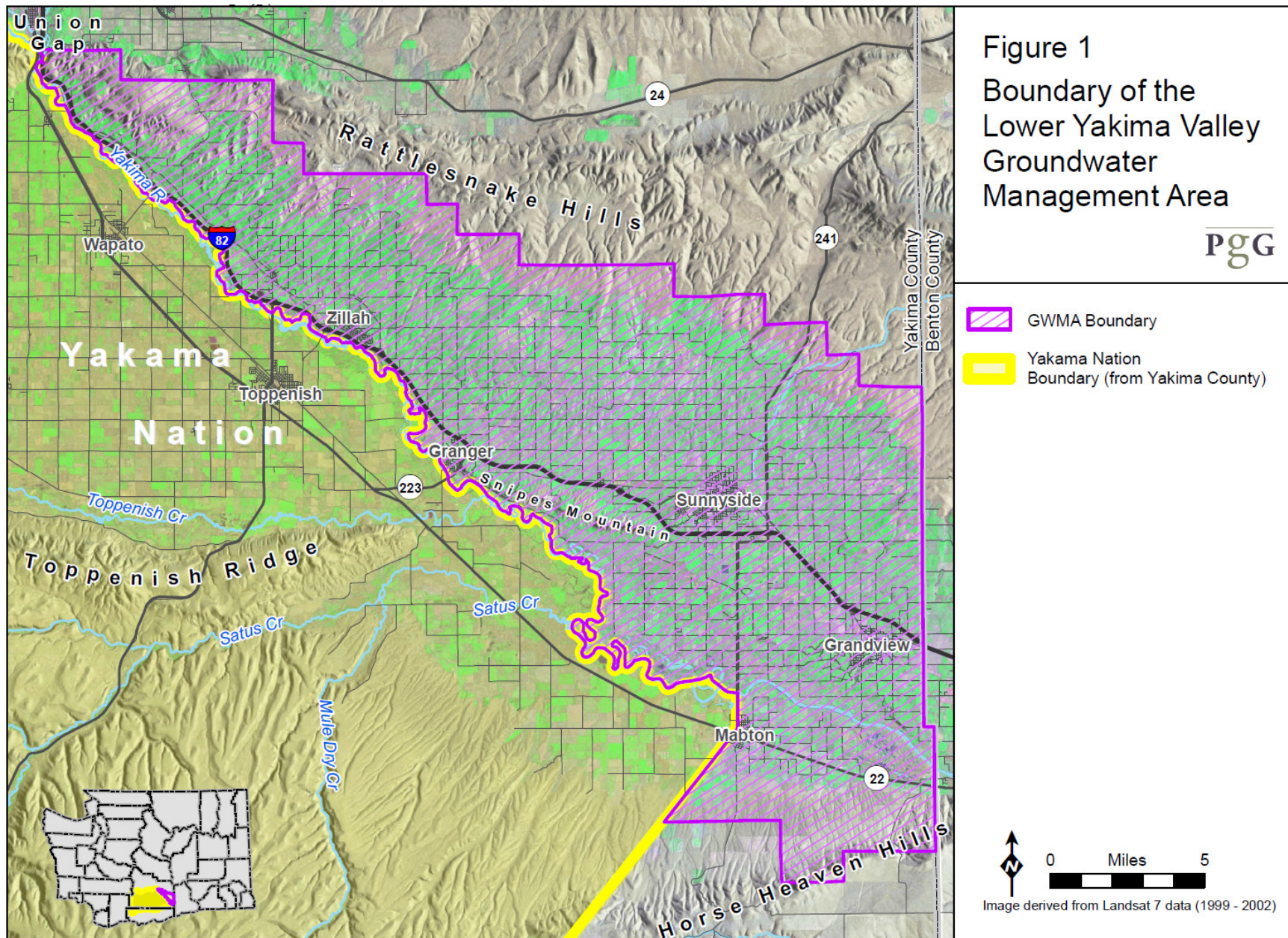
A summary of the review is provided in a table on the following pages. The table is broken into regulations that have local, state, or federal involvement, and is organized by listing the potential source of nitrogen, the regulating agency, a brief description of the regulatory requirement, and the applicable responsibilities of the regulating agency.

Several institutions located outside of the GWMA boundaries are presented in the table along with their applicable regulatory requirements. These institutions, including the City of Toppenish, although located outside of the GWMA, are located within the Lower Yakima Valley and may have a potential connection with the groundwater within the GWMA.

References

Ecology. 2010. Lower Yakima Valley Groundwater Quality, Preliminary Assessment and Recommendations Document. Publication No. 10-10-009. Washington State Department of Agriculture, Washington State Department of Ecology, Washington State Department of Health, Yakima County Public Works Department, and US Environmental Protection Agency. February 2010.

WAC 173-100, Washington State Department of Ecology, "Groundwater Management Areas and Programs," Olympia, Washington.



Lower Yakima Valley Groundwater Management Area Boundary

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Regulatory Framework and Authority

Potential Nitrogen Source	Institution	Regulation	Description	Authority of Institution
Local Agencies				
Private sewage disposal, unlawful wastes disposal	City of Sunnyside	SMC 13.12 - Sewers	Chapter 13.12 primarily addresses discharges and management of municipal and industrial wastewater associated with the publically owned treatment works (POTW). It includes requirements for connection to the POTW. Where a public sewer line is not available, under the provisions of Sunnyside Municipal Code (SMC) 13.12.180 a private sewer and sewage disposal system shall be constructed, in accordance with the specifications and applicable provisions of the Yakima Health District requirements. The type, capacities, location and layout of a private sewage system shall comply with all recommendations and regulations of the Washington State Department of Health and the Uniform Plumbing Code.	• City may issue cease and desist orders on violations • City may issue fines for violations
Illicit stormwater discharges and connections	City of Sunnyside	SMC 13.30A – Stormwater Illicit Discharge	This chapter applies to all water or pollutants entering the municipal separate storm sewer system (MS4) and public Underground Injection Control (UIC) wells generated on any developed and undeveloped lands unless explicitly exempted by the City of Sunnyside Public Works Department. The code provides the City of Sunnyside authority to regulate illicit discharge of pollutants and illicit connections to the stormwater system.	• City may issue cease and desist orders on violations • City may issue fines for violations
Private water wells (not a direct nitrogen source but could provide migration pathway if well not constructed properly and also well restrictions would prevent ingestion of nitrate impacted groundwater)	City of Grandview	GMC 8.32 - Wells	No person shall hereafter drill or install, or cause to be drilled, a private water well within the city.	• City may issue cease and desist orders on violations • City may issue fines for violations may issue fines for violations
Septic tanks, private sewage disposal	City of Grandview	GMC 13.20 –Private Sewage Disposal Systems	Chapter covers the permitting and inspection of private sewage disposal systems (septic tanks). The chapter requires all disposal systems to comply with the county health standards. If a public sewer becomes available, the chapter requires abandonment of private sewage disposal system and connection to public sewer.	• City inspects and issues permits under the direction of the public works director • City may issue fines for violations
Miscellaneous development and use within Critical Aquifer Recharge Areas	City of Grandview	GMC 18.06 – Critical Areas GMC 18.40 – Enforcement and Penalties GMC 18.90 – Critical Aquifer Recharge Areas	Grandview Municipal Code (GMC) 18.06 describes Critical Areas and includes designation and mapping of critical aquifer recharge areas (CARAs) and general requirements if a project is located within a CARA. Developments must be designed and constructed in accordance with surface/stormwater management requirements of the Eastern Washington Stormwater Management Manual as published by Ecology. GMC 18.40 covers enforcement of Chapter 18 of the GMC. GMC 18.90 covers CARAs and states the City's protection of CARAs shall be accomplished through normal project permit review under various city codes, especially the stream protection standards in Chapter 18.60 GMC, Fish and Wildlife Habitat and the Stream Corridor System, including GMC 18.60.100, Prohibited uses; the shoreline use table in GMC 18.100.050; and GMC Title 15, Buildings and Construction, which provides detailed construction, use, and fire/life-safety standards for the storage and handling of dangerous and hazardous substances to a greater extent than most existing state and federal laws.	• City maintains and updates mapping of CARAs • Update/maintain comprehensive plan • City controls development in CARAs through permitting and inspection • City inspects surface/ stormwater management for compliance with the Eastern Washington Stormwater Management Manual • City may issue cease and desist orders on violations • City may issue fines for violations
Animal and human waste, garbage, miscellaneous waste	City of Toppenish	TMC 13.28 – Public Sewers TMC 13.48 – Powers and Authority	It is unlawful for any person to place, deposit, or permit to be deposited in any unsanitary manner on public or private property within the city, any human or animal excrement, garbage, or other objectionable waste.	• City may issue cease and desist orders on violations • City may issue fines for violations
Septic tanks, private sewage disposal	City of Toppenish	TMC 13.30 – Private Sewer Disposal TMC 13.48 – Powers and Authority	TMC 13.30 states that where connection to public sewers is required, but public sewers are more than 400 feet away from a property line, property owner may request a “special private sewage disposal use permit” from the city council. Application for the permit shall be accompanied by proof of compliance of all county health district rules and regulations and approval of State Department of Ecology. The city may require the installation of a public sewer for future use as a condition of issuance of a special private sewage disposal use permit. TMC 13.48 covers enforcement of Chapter 13.	• City inspects and issues permits under the direction of the public works director • City may issue cease and desist orders on violations • City may issue fines for violations

Potential Nitrogen Source	Institution	Regulation	Description	Authority of Institution
Sewer systems, septic tanks, On-site Sewer Systems (OSS)	Yakima County and Yakima Health District	YCC 6.04 YCC 12.05 WAC 246-272A RCW 43.20.050	Yakima County Code (YCC) 12.05 covers sewer systems. It is unlawful to discharge to any natural outlet within the county, or in any area under the jurisdiction of the county, any sewage or other polluted waters, except where suitable treatment has been provided in accordance with county codes. The type, capacities, location and layout of a private sewage disposal system shall comply with all recommendations of the State Department of Health. Washington Administrative Code (WAC) 246-272A is a state code (statutory authority given by Revised Code of Washington (RCW) 43.20.050) with the purpose of protecting the public health by minimizing: (a) The potential for public exposure to sewage from on-site sewage systems (OSS); and (b) Adverse effects to public health that discharges from on-site sewage systems may have on ground and surface waters. OSS are systems handling less than 3,500 gal/day. The chapter includes general requirements, design requirements, required permitting, and enforcement of OSSs. Enforcement is to be carried out by the local health officer which for Yakima County falls under the jurisdiction of the County Health District given authority by RCW 70.05 YCC 6.04 establishes the County Health District which has local authority for the enforcement of OSSs.	- Yakima Health District performs inspection and permitting of on-site sewer systems (<3,500 gal/day) - County may issue cease and desist orders on violations - County may issue fines for violations
Stormwater	Yakima County	YCC 12.10	YCC 12.10 creates a stormwater authority for Yakima County. The purpose of this chapter is to provide for the health, safety, and welfare for Yakima County through the regulation of discharges to county stormwater control facilities and UIC wells consistent with local, federal, and state law. Chapter includes stormwater requirements, stormwater design criteria, prohibition of illicit discharges, violations and enforcement, and civil infractions. Chapter states no person shall discharge or cause to be discharged into county stormwater facilities or a public UIC any materials, including but not limited to pollutants or waters containing any pollutants other than stormwater. (See Yakima County guidance documents listed below relating to stormwater management)	- Maintain county stormwater standards - County may issue cease and desist orders on violations - County may issue fines for violations
Concentrated feeding operations outside of urban growth area zoning	Yakima County	YCC 15.18 YCC 15.12	YCC 15.18 covers permitted land uses within Yakima County. Concentrated animal feeding operations (CAFOs) are permitted in agricultural, remote, and industrial zones as a Type II land use; and are permitted in valley rural zones as a Type III land use. In other zones, CAFOs are not permitted. As a Type II or Type III land use, special conditions may be given for approval as described in YCC 15.12. The application process also includes public notice and a public hearing.	- County maintains zoning and land use maps - Update/maintain comprehensive plan - When a CAFO is requesting a permit, County sends out public notice, holds a public hearing, and conducts a land use review.
Concentrated feeding operations within urban growth area zoning	Yakima County	YCC 15A.04 YCC 15A.15	YCC 15A.04 covers permitted land uses within Yakima County's urban growth area. Concentrated animal feeding operations (CAFOs) are permitted only in suburban residential as a Class (3) land use. As a Class (3) land use, a Type 3 review public hearing is required by the county Hearing Examiner. YCC 15A.15 covers Type (3) reviews. The Type (3) review includes a staff report prepared by the county planning division	- County maintains zoning and land use maps - Update/maintain comprehensive plan - When a concentrated feeding operation is requesting a permit, county sends out public notice, holds a public hearing, and conducts a land use review.
Miscellaneous development and use within Critical Aquifer Recharge Areas	Yakima County	YCC 16C.09 YCC 16C.04	Any development within a CARA is reviewed by Yakima County. Applications for any development activity or division of land which requires review by Yakima County and which is located within a mapped CARA or Wellhead Protection Area shall be reviewed by the Administrative Official to determine whether hazardous materials will be used, stored, transported, or disposed of in connection with the proposed activity. Activities may only be permitted in a CARA if the applicant can show that the proposed activity will not cause contaminants to enter the aquifer and that the proposed activity will not adversely affect the recharging of the aquifer.	- County maintains and updates mapping of CARAs - Update/maintain comprehensive plan - County controls development in CARAs through permitting and inspection - County may issue cease and desist orders on violations - County may issue fines for violations
Fertilizer	Yakima County	YCC 16C.09.06	YCC 16C.09 covers CARAs. YCC 16C.09.06 states that application of household pesticides, herbicides, and fertilizers shall not exceed times and rates specified on the packaging for the residential use of pesticides and nutrients.	- County may issue cease and desist orders on violations - County may issue fines for violations

Potential Nitrogen Source	Institution	Regulation	Description	Authority of Institution
AFOs, CAFOs, agriculture	South Yakima Conservation District	RCW 90.64 RCW 89.08 WAC 16-611	The South Yakima Conservation District is the local conservation district for the Lower Yakima Valley. Conservation districts are created under RCW 89.08. The district serves as a source of management practice technical assistance and can be used as a liaison between the Washington State Department of Agriculture and Ecology and the farmer/ landowner. The management practice technical assistance including helping to evaluate site specific conditions that may threaten resources such as soil, water, air, plants, animals, and public health. This may also include assistance is selecting appropriate BMPs or a suite of BMPs to protect resources and provide a cost share when available. The conservation districts have no regulatory function and serve only in an educational role. RCW 90.64 is known as the Dairy Nutrient Management Act and has sections describing the participation of local conservation districts regarding dairies. WAC 16-611 gives the framework to provide a fair and uniform determination of civil penalties issued for violations of RCW 90.64.	• May accompany WSDA inspectors on any scheduled inspection • Provide management practice technical assistance to WSDA or Ecology in identifying and correcting existing water quality problems resulting from dairy farms • Provide management practice technical assistance to dairy producers in developing and implementing a dairy nutrient management plan • Provides management practice technical assistance to farmers
Miscellaneous development and use in aquifer recharge area	Cities, Yakima County, local agencies, the public. This has formed into the Lower Yakima Valley GWMA and GWAC.	WAC 173-100	WAC 173-100 allows for the creation of Groundwater Management Areas and Programs under the authority pursuant to RCW 90.44.400, 90.44.410, 90.44.420, 90.44.430 and 90.44.440. Ecology would, in cooperation with local government, designate specific groundwater management areas and appoint a lead agency to develop a groundwater management program and an advisory committee to oversee the development of the program for each designated area. The program will then be implemented through state regulations and local ordinances. The program would identify sources of degradation to the area's groundwater and alleviate those problems. The advisory committee represents a broad spectrum of the public.	• Development of advisory committee • Development and implementation of groundwater management program • Enforcement through existing regulation and possibly local ordinances.
Miscellaneous development and use in aquifer recharge area	Yakima County	RCW 36.36	RCW 36.36 gives the county legislative authority of a county the ability to create aquifer protection areas for the purpose of funding the protection, preservation, and rehabilitation of subterranean water. When creating an aquifer protection area, a public hearing is held by the county. After the public hearing, a public ballot of those within the area is conducted and if passed by a simple majority, a protection area can be created. Fees can be collected from those within the area for use in activities to protect and preserve groundwater quality.	• Hold public hearing and issue ballots for creation of aquifer protection areas • Collect fees in protection areas for conducting aquifer protection programs • Issue liens for delinquent fees
Miscellaneous development and use in aquifer recharge area	Yakima County	Educational Program	Yakima County has a Nitrate Treatment Pilot Program with the goal of providing water treatment systems, education, and management practice technical assistance to households with individuals at high public health risk from nitrate contaminated wells. The program was established using money provided by the state legislature in 2010 and was administered by Department of Health (DOH), and the Yakima Health District.	• Continue to implement Nitrate Treatment Pilot Program
Miscellaneous development and use in aquifer recharge area producing surface runoff	Yakima County	Guidance Document	Yakima County publishes the "Yakima County Regional Stormwater Manual." Yakima County and the Cities of Yakima, Union Gap, and Sunnyside entered into an Interlocal Governmental Agreement (ILA) for coverage under the Eastern Washington Phase II Municipal Stormwater Permit. Under the ILA, the county and cities developed the stormwater manual to have consistent approach to stormwater management between the entities. The manual provides guidelines, procedures and local information for the planning, design and maintenance of stormwater facilities throughout the county. The manual is equivalent to Ecology's Stormwater Management Manual for Eastern Washington but has been specifically tailored for use within Yakima County.	• Updating of the manual as required
Miscellaneous development and use in aquifer recharge area producing surface runoff	Yakima County	Guidance Document	Yakima County publishes the "Yakima Regional Low Impact Development Stormwater Design Manual." The manual provides design guidance that is specific to the Yakima regions semi-arid climate. The manual includes technical guidance for LID BMPs including: bioretention, soil amendments, pervious pavement, vegetated roofs, rainwater harvesting, and minimal excavation foundations.	• Updating of the manual as required

Potential Nitrogen Source	Institution	Regulation	Description	Authority of Institution
State Agencies				
Dairy operations on non-tribal lands	WSDA	RCW 90.64 RCW 90.48 WAC 16-611	RCW 90.64, the Dairy Nutrient Management Act, requires all licensed grade “A” dairies to develop and implement nutrient management plans, register with the WSDA, and participate in a program of regular inspections and compliance. WSDA is responsible for implementing RCW 90.64 and is required to follow RCW 43.05 (provide regulatory technical assistance when water quality is impacted or threatened) and may refer dairy operations to local conservation districts for additional technical assistance to implement BMPs that will protect water quality. WSDA is responsible for inspections and compliance actions for all dairies. All dairy farms must: ▪ Maintain records for 5 years to demonstrate that applications of nutrients to crop land are within acceptable agronomic rates. ▪ In accordance with RCW 90.64.010 (17)(c) and 90.64.102, failure to maintain all records necessary to show that applications of nutrient to the land were within acceptable agronomic rates may be subject to a civil penalty. WAC 16-611 gives the framework to provide a fair and uniform determination of civil penalties issued for violations of RCW 90.64.	• Conduct inspections of licensed dairies every 22 months • Responsible for inspections and compliance actions for all dairies
Fertilizers	WSDA	RCW 15.54 WAC 16-200	RCW 15.54, known as the Commercial Fertilizer Act, covers fertilizers, minerals, and limes. The chapter requires the creation of a fertilizer database of commercially available fertilizers in the state and requires a sampling and testing program of commercial fertilizers. Fertilizers are required to meet the nutrient value guaranteed by the fertilizer. Penalties for not meeting the guarantee can be applied to the fertilizer seller. Further details on requirements for commercial fertilizer producers is provided in WAC 16-200 including labeling, claims by fertilizer, and penalties.	• Maintain a fertilizer database • Sample and test commercial fertilizers distributed with the state • Enforcement of chapter and issuance of penalties.
Fertilizer	WSDA	WAC 16-201	WAC 16-201 covers the bulk storage and operational area containment rules for fertilizer. The chapter gives facilities requirements for storing fertilizer and the adoption of a spill response plan, Civil penalties can be issued for violating storage requirements.	• Conduct inspections for compliance as necessary • Issue permits waiving requirements when needed • Issue civil penalties for infractions
Chemigation and fertigation	WSDA	WAC 16-202	WAC 16-202 gives general provisions, general requirements, and safety requirements for chemigation and fertigation for agriculture. Any person who fails to follow the requirements of the chapter is subject to denial of permits and /or a civil penalty.	• Issue civil penalties for infractions

Potential Nitrogen Source	Institution	Regulation	Description	Authority of Institution
CAFOs on non-tribal lands	Ecology and WSDA (inspections)	RCW 90.48.130 RCW 90.64 WAC 173-220	RCW 90.48 is the Water Pollution Control Act. The chapter gives Ecology the jurisdiction to control and prevent the pollution of streams, lakes, rivers, ponds, inland waters, salt waters, water courses, and other surface and underground waters of the state of Washington and the ability to take enforcement actions. The chapter includes the issuance of waste disposal permits to entities discharging waste into waters of the state. Any discharge without a permit is prohibited. A state waste disposal permit is required for industrial, commercial, and municipal discharges of pollutants into surface and groundwaters and discharges of pollutants into the ground or a public sewage system. Pursuant to authority granted by the federal Clean Water Act, the discharge of pollutants from point sources to surface waters of the state requires a National Pollutant Discharge Elimination System (NPDES) permit from the Department. WAC 173-220 covers the implementation of the state's NPDES permit program including the application process, public notices, public hearings, and enforcement. Any designated CAFO or medium Animal Feeding Operation (AFO) that has a confirmed discharge to state waters must get a permit. A site specific nutrient management plan must be developed and implemented by the permittee. Ecology is responsible for issuing NPDES CAFO permits. There is a Memorandum of Agreement between Ecology and WSDA, where WSDA performs inspections, review of nutrient management plans, and provides regulatory technical assistance. When providing regulatory technical assistance, the agency notifies land user of the activities under their control that must be corrected to meet water quality standards or to protect water quality. Currently, Ecology covers 6 CAFOs (5 of which are dairies) under the NPDES General CAFO permit. The last 5-year permit cycle has expired and Ecology is currently unable to issue new General Permits. A new permit is being drafted by Ecology but has not yet been officially completed.	- Issue CAFO permits and determine when a AFO requires a CAFO permit - Review nutrient management plans submitted as part of an application for CAFO coverage and final approval of plans (WSDA) Other responsibilities: - Development, issuance, cancellation and revocation of both federal NPDES permits and state waste discharge permits to all facilities and entities - Develop fact sheets for NPDES permits
Food processor's land application of waste, municipal wastewater discharge to land, dairies with state waste discharge permits, other entities with state waste discharge permits	Ecology	WAC 173-216 – State Waste Discharge Permit	WAC 173-216 covers the State Waste Discharge Permit Program which was created to satisfy the requirements of RCW 90.78, the Water Pollution Control Act. The permit program does not cover point source discharges into navigable waters of the state which is covered by the NPDES Permit Program (WAC 173-220), or discharges covered under the general permit program (WAC 173-226). Any entity who proposes to discharge waste materials into waters of the state must file an application with Ecology.	- Implementation of a state waste discharge permit program, applicable to the discharge of waste materials from industrial, commercial, and municipal operations into ground and surface waters of the state - Review and approval of permits - Public hearings if applicable
Large On-site Sewage Systems (LOSS)	DOH	WAC 246-272B	WAC 246-272B covers large on-site sewage systems (LOSS) and implements RCW 70.118B. The Chapter covers the approval and permitting process, site and environmental requirements, engineering requirements, design and technical standards, LOSS operations requirements, and enforcement. LOSS are on-site sewer systems that handle more than 3,500 gal/day. LOSS may not be installed or operated without a permit issued by DOH. As part of the permitting process for LOSS, DOH requires a site risk survey that includes a nitrate balance. DOH publishes "Level 1 Nitrate Balance Instructions for Large On-site Sewage Systems" (Publication #337-069) to assist in performing the required calculations.	- Review of LOSS applications and permit approval - Enforcement of regulation
	DOH	WAC 246-290-135	WAC 246-290-135 covers source water protection for Group A public water supply systems. The chapter establishes that all systems must maintain a sanitary control area (SCA) around all drinking water sources. For wells, the SCA must have a radius of at least 100 ft from the well. DOH may require a larger SCA given site conditions and may require additional monitoring if a potential risk exists to a water source. The SCA prevents constructing, storing, disposing, or applying any source of potential contamination within the area. The chapter also requires water systems to develop a wellhead protection program as part of the system's water system plan. This includes delineating wellhead protection areas and creating a database of known or potential sources of pollution within the wellhead protection area.	- Review SCA and Wellhead Protection Programs - Enforcement of regulation

Potential Nitrogen Source	Institution	Regulation	Description	Authority of Institution
Domestic and industrial wastewater facilities	Ecology	WAC 173-240 WAC 173-221 WAC 173-221A	WAC 173-240 covers the submission of plans and reports for the construction of wastewater facilities which are classified as handling more than 100,000 gal/day. Unlike LOSS which are regulated by DOH (with local jurisdiction given to the County Health Department), wastewater facilities are regulated by Ecology. The chapter, which implements RCW 90.48.110, includes requirements for domestic wastewater facilities and industrial wastewater facilities. This includes requirements for design, reports, plans and specs, and operation and maintenance manuals. WAC 173-221 covers discharge standards and effluent limitations for domestic wastewater facilities while WAC 173-221A covers discharge standards and effluent limitations for industrial wastewater facilities.	- Review and approval of wastewater facility construction documents - Enforcement of discharge and effluent limitations for wastewater facilities
Underground injection control (UIC) wells	Ecology	WAC 173-218	WAC 173-218 is the state regulation for the state's UIC Program. Ecology was delegated authority by the EPA to administer a UIC program per 40 CFR 144 and by statutory authority by RCW 43-21A.445. The program requires that a non-endangerment performance standard must be met, prohibiting injection that allows the movement of fluids containing any contaminant into groundwater. In Washington, all ground water is considered a potential source of drinking water. Any UIC well owner must also provide inventory information to register their well with Ecology. The chapter covers UIC well classifications, operating requirements, permit terms for wells that are not rule authorized, UIC well decommissioning, and enforcement.	- Management of a UIC program - Maintaining UIC inventory - Reviewing and issuing of permits for wells not rule authorized - Enforcement of regulation
Miscellaneous development and use in aquifer recharge area	Ecology	WAC 173-200 RCW 90.48	WAC 173-200 covers the water quality standards for groundwaters within the state and is an implementation of authority granted in RCW 90.48. The chapter introduces the state's antidegradation policy. The policy prevents the degradation of groundwater that interferes with existing and future beneficial use. Degradation is not allowed of high quality groundwaters constituting an outstanding national or state resource, such as waters of national and state parks and wildlife refuges, and waters of exceptional recreational or ecological significance. The chapter states that when the quality of groundwater exceeds the assigned criteria for groundwater, then the higher existing groundwater quality is to be protected and any contaminants that reduce that quality cannot be introduced into the groundwater. The only exception to where degradation is allowed is if an overriding consideration of public interest will be served and all contaminants for entry into the groundwater is provided with all known, available, and reasonable methods of prevention, control, and treatment (AKART) prior to entry. The chapter provides a table of groundwater quality criteria that establishes a maximum contaminant concentration for the protection of a variety of beneficial uses of Washington's groundwater. For nitrate (as N) that criteria is 10 mg/L. The chapter presents procedures for establishing enforcement limits and point of compliance locations for when a permit is issued for an activity effecting groundwater quality. Ecology has the ability of creating special protection areas for areas that require special consideration or increased protection.	- Establishing enforcement limit, point of compliance, and early warning concentration value for permits - Review of AKART used in permits - Establishment of special protection areas - Implementation and enforcement of groundwater quality rules
Wells	Ecology	WAC 173-160	WAC 173-160 covers minimum standards for the construction and maintenance of wells under statutory authority of RCW 18.104. The chapter includes standards for the construction and decommission of wells. Any violations of the sections in the chapter may be enforced by issuance of regulatory orders under RCW 43.27A.190, civil penalties under RCW 90.03.600 and 18.104.155, and criminal penalties under RCW 18.104.160.	- Update design requirements as required - Review variance applications to chapter - Issuance of well drilling permits - Review of water well reports - Enforcement of rules in chapter
Land application of solid waste, anaerobic digesters	Ecology	WAC 173-350 RCW 70.95	WAC 173-350 covers standards for the handling of solid waste under statutory authority given under RCW 70.95. The section includes the land application of solid waste (WAC 173-350-230) and anaerobic digesters (WAC 173-350-250). The chapter does not apply to land application of manures and crop residues at agronomic rates, or agricultural composting when all agricultural wastes are generated, processed, and applied on-farm at agronomic rates in accordance with accepted agricultural practices.	- Issue permits for the beneficial use of solid waste - Enforcement of rules in chapter
Miscellaneous development and use adjacent to surface water	Ecology	WAC 173-27 RCW 90.58	WAC 173-27 covers shoreline management permit and enforcement procedures. The chapter is given authority under RCW 90.58 known as the Shoreline Management Act of 1971. The chapter requires local governments to establish a program, consistent with rules adopted by Ecology, for the administration and enforcement of the permit system for shoreline management. The local program should be integrated with other local government systems for administration and enforcement of land use regulations. The chapter requires local governments to only authorize development along shorelines that is consistent with the policy and provisions of the Shoreline Management Act. A person who fails to conform to a permit issued under RCW 90.58 may be imposed a penalty by Ecology filed jointly with the local government or filed alone.	Enforcement of rules in chapter and issuance of penalties.

Potential Nitrogen Source	Institution	Regulation	Description	Authority of Institution
Solid waste	Ecology	WAC 173-304	WAC 173-304 covers the minimum functional standards for solid waste handling and is promulgated under the authority of RCW 70.95 to protect public health, to prevent land, air, and water pollution, and conserve the state's natural, economic, and energy resources. The chapter includes: setting minimum functional performance standards for the proper handling of all solid waste materials originating from residences, commercial, agricultural and industrial operations and other sources, identification of those functions necessary to assure effective solid waste handling programs at both the state and local level, describes the responsibility of persons, municipalities, regional agencies, state and local government under existing laws and regulations related to solid waste, and requires use of the best available technology for siting, and all known available and reasonable methods for designing, constructing, operating and closing solid waste handling facilities.	Enforcement of rules in chapter and issuance of penalties
Biosolids	Ecology	WAC 173-308	WAC 173-308 covers biosolids management and is given authority under RCW 70.95. The chapter considers biosolids as sewage sludge or septage that has been or is being treated to meet standards so that it can be applied to the land. The chapter includes requirements for those who prepare, transport, or apply solid waste. The law requires biosolids monitoring and sampling which includes nitrate. The chapter also includes requirements for the storage of biosolids which states that biosolids cannot be stored in a manner that would likely result in contamination of groundwater. The chapter includes requirements for recordkeeping for those preparing or applying biosolids, and the submittal of annual reports by certain facilities. All treatment works treating domestic must apply for a permit for the final use or disposal of biosolids.	- Review of annual reports - Issuance of permits - Collection of permit fees
Miscellaneous development and use in aquifer recharge area producing surface runoff	Ecology	Guidance Document	Ecology publishes the "Stormwater Management Manual for Eastern Washington" (Publication 04-10-076). The objective of the manual is to provide guidance in stormwater design and management for eastern Washington by providing methodologies and technical guidance. The manual identifies eight Core Elements for managing stormwater runoff from new development and redevelopment projects of all sizes. Many counties and municipalities in eastern Washington require the manual to be followed for development	Updating of the manual as required
Miscellaneous development and use in aquifer recharge area producing surface runoff	Ecology	Guidance Document	Ecology publishes the "Eastern Washington Low Impact Development Guidance Manual". The manual is currently still in the draft phase and not yet been released in its final form. The manual covers low impact development methodologies for handling stormwater in developments.	- Completion of manual - Promote awareness of new guidance manual - Updating of manual as required
Miscellaneous development and use in aquifer recharge area	Ecology	Guidance Document	Ecology publishes "Implementation Guidance for the Ground Water Quality Standards" (Publication 96-02). The guidance is a document that explains and interprets WAC 173-200 which covers Ground Water Quality Standards.	Updating of guidance as required
Nutrient application from municipal and industrial wastewater sources.	Ecology	Guidance Document	Ecology publishes "Guidance on Land Treatment of Nutrients in Wastewater, with Emphasis on Nitrogen" (Publication 04-10-081). The guidance provides a brief guidance on land treatment of nutrients in wastewater, with emphasis on nitrogen in relation to Ecology's Water Quality Program. This guidance is used to support state waste discharge permits under WAC 173-216.	Updating of guidance as required
Miscellaneous development and use in critical aquifer recharge areas	Ecology	Guidance Document	Ecology publishes "Critical Aquifer Recharge Areas: Guidance Document" (Publication 05-10-28). The document provides guidance for local jurisdictions on the laws and rules of the state for water quality, pollution prevention, and water resources in relation to CARA protection. This includes guidance on how local jurisdictions can use planning and ordinances to help protect critical aquifer recharge areas.	Updating of guidance as required
Nutrient application, agriculture	Ecology	Guidance Document	Ecology publishes "Irrigation Management Practices to Protect Ground Water and Surface Water Quality - State of Washington" (Publication EM4885). The manual presents overall management objectives for irrigated agriculture in Washington. A series of implementation practices is listed for each management objective outlined with the goal of reducing point and non-point pollution sources. A particular focus of the manual is on nutrients including nitrogen.	Updating of manual as required
Miscellaneous pollutants from surface runoff entering underground injection control (UIC) wells	Ecology	Guidance Document	Ecology publishes "Guidance for UIC Wells that Manage Stormwater" (Publication 05-10-067). The document provides design and pretreatment BMPs for UIC wells handling stormwater and explains the UIC rule, WAC 173-218.	Updating of guidance as required

Potential Nitrogen Source	Institution	Regulation	Description	Authority of Institution
Federal Agencies				
Agriculture, AFOs, and CAFOs located on tribal lands	EPA	33 USC §1311	33 USC §1311 gives EPA the authority to issue NPDES permits on tribal land. In areas outside of tribal lands, Ecology has responsibility for issuing and enforcing NPDES permits.	• Issuance and enforcement of NPDES permit
Underground injection control (UIC) wells located on tribal lands	EPA	40 CFR Part 144	UIC program requirements are found in 40 CFR Parts 144, 146, and 147. In tribal areas, EPA is the primary enforcement mechanism of the regulations. Outside of tribal areas, Ecology has been granted primacy for enforcement under the states own UIC program.	• Enforcement of federal UIC regulations
Miscellaneous development and use in aquifer recharge area posing a significant endangerment to human health	EPA	SDWA §1431	Section 1431 of the SDWA gives the EPA emergency powers to take action to protect the public health if substantial endangerment of the underground sources of drinking water is imminent. This could include the issuance of orders and civil actions.	• Use of Section 1431 to issue orders and civil actions
Miscellaneous development and use receiving federal funding within aquifer recharge area	EPA	SDWA §1424(e)	Section 1424(e) of the SDWA authorizes for the designation of an aquifer by the EPA administrator that the aquifer is the sole source for drinking water in the area. The process for designating an aquifer as a sole source can be initiated by the EPA or upon petition by another entity (individual, company, state, municipality, etc.). If an aquifer is designated as a sole source for drinking water, no federal funding may go to projects in the recharge area of aquifer that may cause contamination of the aquifer. The Safe Drinking Water Act Amendments, enacted June 1986, established the Sole Source Aquifer Demonstration Program, which is separate from, but dependent upon, the Sole Source Aquifer program. The Sole Source Aquifer Demonstration Program establishes procedures for developing, implementing and assessing demonstrations designed to protect critical aquifer protection areas (CAPAs). A CAPA is an area that: ▪ Must be located with an area designated as a Sole Source Aquifer by June 19, 1986 and has a Clean Water Act, Section 208, ground water quality protection plan approved prior to that same date; or ▪ Must be located within an area that is designated as a Sole Source Aquifer no later than June 19, 1988, and which satisfies the CAPA criteria EPA must establish by June 19, 1987.	• Initiation or review of petitions for designating aquifer as a sole source for drinking water • Determination of aquifer as sole source for drinking water
Agriculture, dairies, and CAFOs	USDA-Natural Resources Conservation District (NRCS)	Nutrient Management (Code 590)	The NRCS is charged with developing and updating the Nutrient Management (Code 590) conservation practice standard for nutrient planning. The plans are developed on a state by state basis. While not a regulation, the standard is used by EPA and state agencies for nutrient management planning. Furthermore, for farmers receiving federal assistance through the USDA, implementation of a nutrient management plan is required.	• No regulatory authority, but responsible for developing and updating Nutrient Management Code 590, which is adapted by several regulatory agencies.