

Owyhee County

Ground Water Quality Improvement and Drinking Water Source Protection Plan



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Drinking Water Source Protection Plan

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Finalized for publication 2010

First Update: _____

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- Idaho Department of Environmental Quality
- Idaho State Department of Agriculture
- Idaho Department of Water Resources
- Idaho Public Health Districts
- Idaho Soil Conservation Commission
- Idaho Association of Soil Conservation Districts
- Natural Resources Conservation Service
- University of Idaho Cooperative Extension
- Owyhee County
- Public and local government representatives providing input during public meetings held for the Bruneau/Grand View and Marsing/Homedale nitrate priority areas.

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1. LIST OF ACRONYMS AND ABBREVIATIONS

AFO	animal feeding operation
BMP	best management practice
CAFO	confined animal feeding operation
DEQ	Idaho Department of Environmental Quality
EPA	U.S. Environmental Protection Agency
GWQP	ground water quality plan
GWMTTC	Ground Water Monitoring Technical Committee
IASCD	Idaho Association of Soil Conservation Districts
IDAPA	Refers to citations of Idaho administrative rules
IDWR	Idaho Department of Water Resources
ISCC	Idaho Soil Conservation Commission
ISDA	Idaho State Department of Agriculture
IWM	irrigation water management
MCL	maximum contaminant level
mg/L	milligrams per liter
NMP	nutrient management planning
NPA	Nitrate Priority Area
NRCS	Natural Resources Conservation Service
ppm	parts per million
SWDH	Southwest District Health
TMDL	total maximum daily load
USGS	United States Geological Survey

2. INTRODUCTION

Ground water protection can be achieved through managing and controlling point sources and by implementing best management practices (BMPs) while conducting land use activities. Ground water protection is most effectively achieved by preventing contamination.

This document serves as the Ground Water Quality Management Plan and Drinking Water Source Protection Plan for Owyhee County. It will be updated approximately every 5 years to coincide with the statewide process to review ground water quality monitoring data and delineations for nitrate priority areas (NPA). This binder is an educational and informational resource for local governments and land management entities. It is intended to inform decision making processes and to be used when prioritizing and coordinating activities in relation to environmental issues throughout Owyhee County. The information in this binder:

- Identifies all NPAs within Owyhee County.
- Outlines the strategies that will be implemented to reduce nitrate contamination in ground water and protect public water supplies.
- Recognizes activities and accomplishments made to improve ground water quality throughout the county.
- Assembles sources of funding for BMP implementation.
- Provides a list of agency contacts and telephone numbers for technical assistance and resource information.
- Describes potential sources of nitrate to ground water and health risks associated with high levels of nitrate in ground water.
- As a resource for decision making, presents information for protecting sources of public drinking water systems.
- Offers a summary of information relating to surface water quality and impaired streams in Owyhee County.

Idaho's Ground Water Quality Protection Act of 1989 authorized a comprehensive approach for maintaining and improving Idaho's ground water quality. The 1996 Ground Water Quality Plan (GWQP) outlines various state and local responsibilities to protect ground water quality. The GWQP is available on the DEQ Web site at

http://www.deq.idaho.gov/water/data_reports/ground_water/plans_guidance.cfm. The GWQP, Idaho Ground Water Protection Interagency Cooperative Agreement, and Department of Environmental Quality (DEQ) Policy PM-004 provide guidance and direction in identifying, delineating, and prioritizing areas where ground water is significantly degraded.

As the primary agency for ground water quality protection, DEQ chairs the Ground Water Monitoring Technical Committee. This committee meets periodically throughout the year to coordinate monitoring projects and share results. The committee includes representatives from other Idaho state agencies, including the following:

- Idaho Department of Water Resources (IDWR)
- Idaho State Department of Agriculture (ISDA)
- Idaho Soil Conservation Commission (ISCC)
- Idaho Association of Soil Conservation Districts (IASCD)
- Idaho Health Districts
- Idaho Water Resources Research Institute
- Idaho's universities
- Federal agencies (such as the U.S. Geological Survey)

DEQ is designated as the primary agency to coordinate and administer ground water quality protection programs for the state. (See the Ground Water Quality Protection Act of 1989, Idaho Code 39-120, available at <http://www3.state.id.us/cgi-bin/newidst?scid=390010020.K>). To that end, DEQ has facilitated the development of the Owyhee County Ground Water Quality Improvement Plan in a collaborative effort with IDWR, ISDA, ISCC, IASCD, Southwest District Health, the University of Idaho's Cooperative Extension, and the Natural Resources Conservation Service.

3. RESOURCES/AUTHORITIES

Table 1 lists entities that can assist in ground water quality management. More information and additional resources can be found under Tab 13, Regulatory Directory and Web Site Resources.

Table 1. Resources and Authorities for Ground Water Quality Management in Idaho.

RESOURCE	PHONE NUMBER and WEB SITE
Owyhee Conservation District <ul style="list-style-type: none"> • Nutrient and irrigation water management plans • Grant opportunities 	(208) 896-4544 http://owyheeconservationdistrict.net
Bruneau River Soil Conservation District <ul style="list-style-type: none"> • Nutrient and irrigation water management plans • Grant opportunities 	(208) 845-2299
Idaho Soil Conservation Commission <ul style="list-style-type: none"> • Provide technical assistance to owners/operators of private lands for planning, implementing, and evaluating agricultural best management practices • Nutrient and irrigation water management plans 	(208) 332-8654 www.scc.idaho.gov
Idaho Department of Agriculture <ul style="list-style-type: none"> • Beef and dairy animal feeding operations • Confined animal feeding operation (CAFO) siting team • Pesticides 	(208) 332-8500 www.agri.state.id.us
Natural Resources Conservation Service Technical assistance to implement conservation practices for erosion control and water quality	(208) 896-4544 www.nrcs.usda.gov
Idaho Department of Water Resources <ul style="list-style-type: none"> • Well construction standards • Dry, injection, and water wells 	(208) 287-4800 www.idwr.idaho.gov
Owyhee Watershed Council <ul style="list-style-type: none"> • Environmental enhancement and restoration • Grant opportunities 	(541) 372-5782 www.oregonwatersheds.org/oregoncouncils/owyhee
Department of Environmental Quality <ul style="list-style-type: none"> • Ground water • Nutrient/pathogen studies • Public drinking water systems • Source water protection • CAFOs for swine, poultry, horses, sheep, mink, deer, etc. 	(208) 373-0550 www.deq.idaho.gov
Southwest District Health Department <ul style="list-style-type: none"> • Septic tanks/drainfields • Subdivision sanitary restrictions • Non-community drinking water systems 	(208) 455-5400 www.publichealthidaho.com www.southwestdistricthealth.org
University of Idaho Extension Service	(208) 896-4104 www.extension.uidaho.edu

RESOURCE	PHONE NUMBER and WEB SITE
University of Idaho Animal and Veterinary Science Department	(208) 885-6347 www.avs.uidaho.edu
Idaho Rural Water <ul style="list-style-type: none"> • Training and technical assistance to water and wastewater systems 	(800) 962-3257 or (208) 343-7001 www.idahoruralwater.com
Association of Idaho Cities Ordinance development assistance	(208) 344-8594 www.idahocities.org

4. STATEWIDE NITRATE PRIORITY AREAS AND RANKING

As part of the goal of restoring degraded ground water, the Department of Environmental Quality (DEQ) has developed a list of areas throughout the state where ground water is degraded due to nitrate contamination. This list ranks the top nitrate-degraded areas (referred to as “nitrate priority areas”) in the state based on the severity of the degradation; the ranking of “1” indicates the most severely impacted area in the state. **A statewide map depicting current nitrate priority areas and their ranking is provided in this section.**

In 2001, DEQ, in consultation with the Ground Water Monitoring Technical Committee comprised of staff from the Idaho Department of Water Resources, the Idaho State Department of Agriculture, the U.S. Geological Service, and the Idaho public health districts, delineated nitrate-degraded ground water areas using ground water quality monitoring analytical results from various agencies combined with hydrogeologic and land use data. The first nitrate priority area delineation document was published in 2002. These initial nitrate priority areas can be viewed on DEQ’s Web site at www.deq.idaho.gov/water/data_reports/ground_water/nitrate/final_nitrate_priority_area_ranking.pdf.

The data used to define and rank the priority of the areas are updated on a continual basis. However, updated nitrate priority area delineations only occur approximately every 5 years. The most recent delineation document was published in 2008 and is located on the DEQ Web site at www.deq.idaho.gov/water/data_reports/ground_water/nitrate/ranking_2008.pdf.

The main criteria for designation of an area as a nitrate priority area is that 25% of the ground water samples collected in a hydrogeologically similar area contain nitrate levels greater than or equal to 5 milligrams per liter (mg/L), which is one-half the federal drinking water standard for nitrate of 10 mg/L.

Areas are ranked based on criteria such as population, existing water quality, water quality trends, and other factors. The process also takes into account impacts on beneficial uses (other than water supply) of an area’s ground water. **The current statewide ranking summary sheet is provided in this section.**

The map in Figure 1 shows the 32 nitrate priority areas in Idaho, along with their ranking. Figure 2 is a map of the nitrate priority areas in DEQ’s Boise region (Washington, Payette, Gem, Boise, Canyon, Ada, Owyhee, and Elmore Counties.) Table 2 is a summary of the 2008 statewide ranking of nitrate priority areas, with data showing nitrate levels in each area.

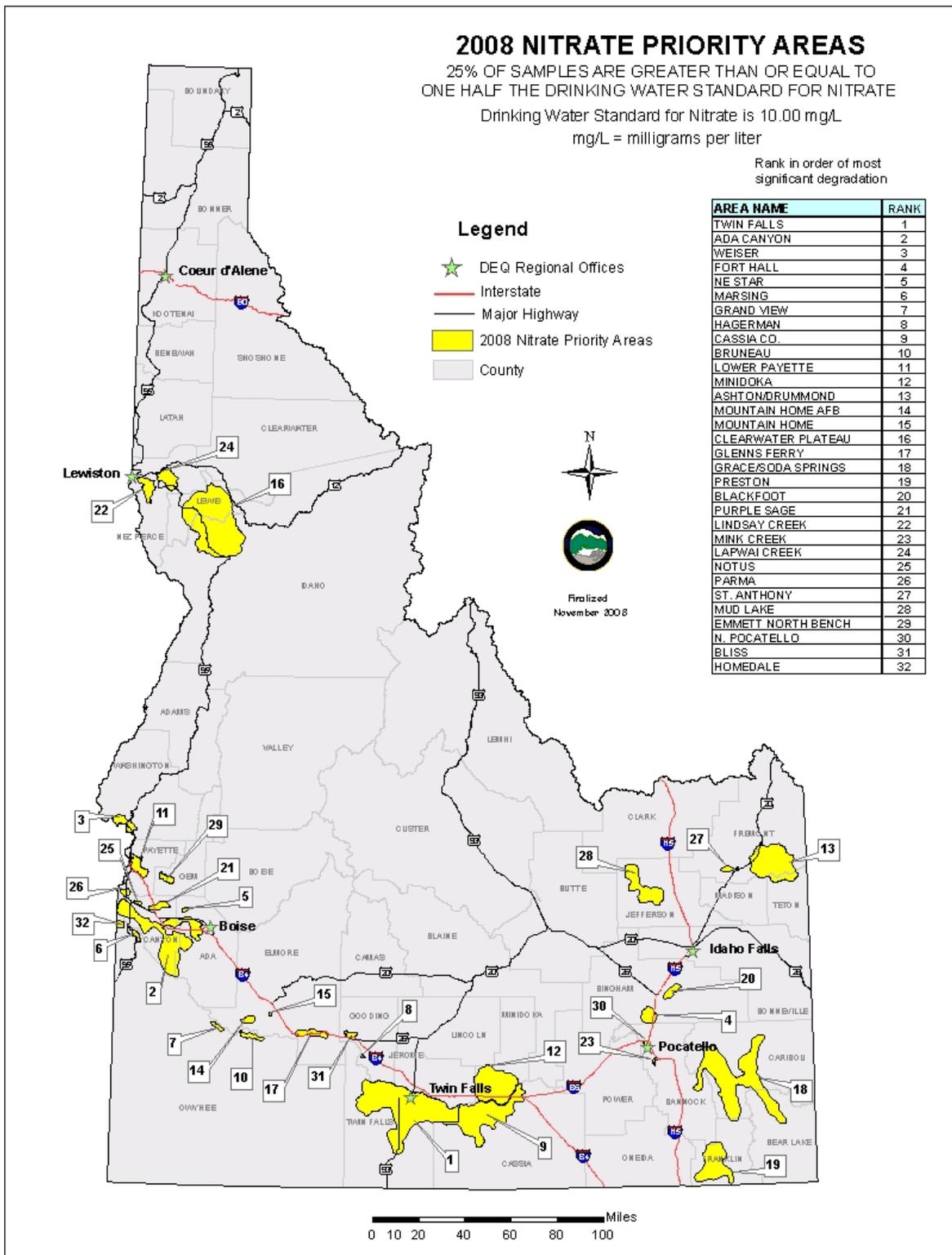


Figure 1. Map of 32 Nitrate Priority Areas Designated in Idaho in 2008. (Numbers 6, 7, 10, and 32 indicate the Marsing, Grand View, Bruneau, and Homedale Nitrate Priority Areas.)

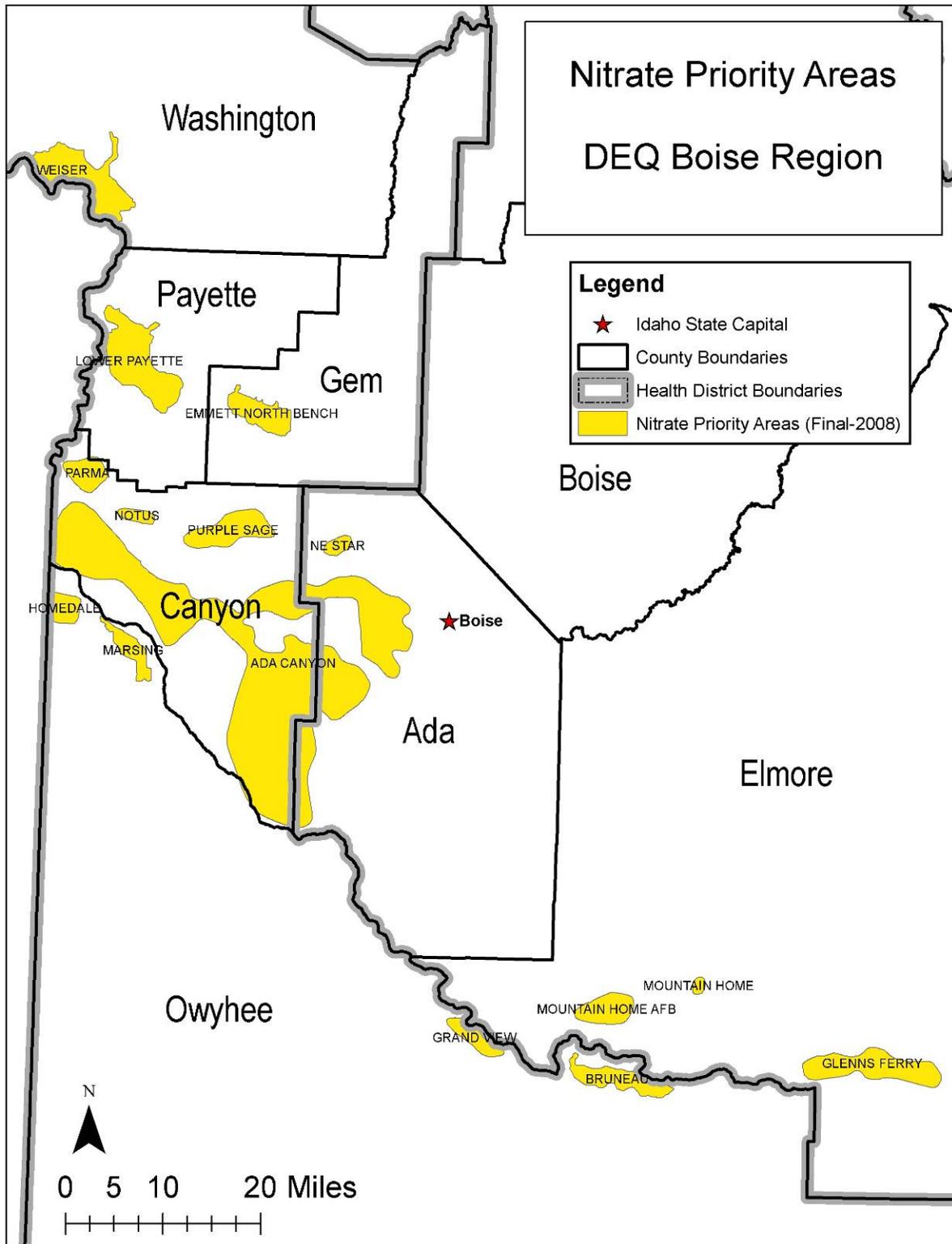


Figure 2. Nitrate Priority Areas in DEQ's Boise Region.

Table 2. 2008 Statewide Nitrate Priority Ranking Summary Sheet.

Area Name	DEQ Region ^a	Acres	Square Miles	Population	Total Samples ^b	Max NO ₃ ^c	Mean NO ₃	Median	# >= 2.0 mg/L	% >= 2.0 mg/L	# >= 5.0 mg/L	% >= 5.0 mg/L	# >= 10.0 mg/L	% >= 10.0 mg/L	# PWS/ SWA ^d	Trend	Score	Rank
Twin Falls	TFRO	379520	593	63354	605	41.0	5.20	4.90	536	89	288	48	34	6	88	Increase	24.78	1
Ada Canyon	BRO	211200	330	121063	933	55.9	5.27	4.10	701	75	383	41	108	12	213	Increase	24.75	2
Weiser	BRO	25600	40	7258	99	43.5	12.26	12.00	86	87	78	79	58	59	25	No Change	24.59	3
Fort Hall	PRO	23680	37	1763	8	24.1	14.79	14.80	8	100	7	88	7	88	7	No Change	24.20	4
NE Star	BRO	2560	4	166	63	48.0	11.14	7.68	42	67	35	56	27	43	1	Increase	23.44	5
Marsing	BRO	5760	9	521	33	37.0	9.57	7.90	21	64	19	56	13	39	12	Increase	21.98	6
Grand View	BRO	5760	9	510	22	121.0	15.33	9.60	22	100	20	91	11	50	2	No Change	20.55	7
Hagerman	TFRO	1280	2	877	8	19.6	9.92	11.00	8	100	5	63	5	63	4	Insufficient	20.45	8
Cassia Co.	TFRO	193280	302	17525	384	40.0	6.34	5.74	331	86	224	58	65	17	48	No Change	20.32	9
Bruneau	BRO	11520	18	23	4	110.0	43.40	31.70	3	75	3	75	3	75	0	Insufficient	19.80	10
Lower Payette	BRO	26880	42	6718	119	28.0	6.05	4.74	83	70	57	48	22	19	25	No Change	17.70	11
Minidoka	TFRO	147200	230	18395	319	83.0	5.35	4.32	224	70	131	41	27	8	56	No Change	17.25	12
Ashton/Drummond	IFRO	162560	254	2484	179	48.0	7.03	6.00	159	89	124	69	28	16	18	No Change	16.83	13
Mountain Home AFB	BRO	8960	14	8903	36	28.9	7.00	5.41	29	81	20	56	8	22	8	No Change	16.62	14
Mountain Home	BRO	1280	2	100	35	40.0	9.96	5.80	29	83	19	54	10	29	4	No Change	16.26	15
Clearwater Plateau	LRO	359040	561	4236	183	77.1	6.79	3.70	119	65	68	37	39	21	22	No Change	16.25	16
Glenns Ferry	BRO	20480	32	1868	11	32.2	9.07	5.72	9	82	8	73	3	27	4	No Change	15.99	17
Grace/Soda Springs	PRO	317440	496	8042	96	37.2	4.62	3.21	64	67	28	29	8	8	45	No Change	15.59	18
Preston	PRO	106880	167	8178	59	30.8	5.15	4.19	40	68	24	41	6	10	23	No Change	15.41	19
Blackfoot	PRO	15360	24	1100	15	16.0	6.98	5.64	15	100	9	60	3	20	13	No Change	15.00	20
Purple Sage	BRO	14080	22	2835	87	22.7	5.26	4.61	66	76	38	44	9	10	25	No Change	14.72	21
Lindsay Creek	LRO	28160	44	1273	45	18.6	4.74	3.80	25	56	18	40	9	20	16	No Change	14.12	22
Mink Creek	PRO	1920	3	1478	40	21.0	4.57	2.42	24	60	13	33	8	20	11	No Change	13.85	23
Lapwai Creek	LRO	33920	53	1026	16	18.7	5.63	5.19	13	81	9	56	2	13	8	No Change	13.72	24
Notus	BRO	2560	4	135	6	10.2	5.76	6.93	5	83	4	67	1	17	0	Insufficient	13.71	25
Parma	BRO	7040	11	890	17	15.0	4.83	5.36	10	59	9	53	3	18	3	No Change	13.63	26
St. Anthony	IFRO	7680	12	666	14	42.6	9.46	3.29	9	64	5	36	3	21	5	No Change	13.18	27
Mud Lake	IFRO	81280	127	1309	52	20.0	3.90	2.89	33	63	14	27	4	8	11	No Change	12.41	28
Emmett North Bench	BRO	10880	17	887	27	17.0	4.65	3.69	19	70	9	33	3	11	3	No Change	12.15	29
North Pocatello	PRO	1920	3	4464	11	8.9	4.62	3.80	11	100	3	27	0	0	11	No Change	10.35	30
Bliss	TFRO	7040	11	76	24	8.6	3.19	3.11	16	67	7	29	0	0	0	No Change	8.79	31
Homedale	BRO	5760	9	387	24	16.0	4.67	1.54	12	50	9	38	5	20	1	Decrease	7.90	32
TOTALS		2228480	3482	288510	3574				2772		1688		532		712			

^a BRO = Boise Regional Office, IFRO – Idaho Falls Regional Office, LRO = Lewiston Regional Office, PRO = Pocatello Regional Office, TFRO = Twin Falls Regional Office; ^bNumber of sample sites within nitrate priority area; ^c NO₃ = nitrate; ^d Number of public water systems or Source Water Assessments within a nitrate priority area.

5. OWYHEE COUNTY NITRATE PRIORITY AREA MAPS

The maps in Figure 3 through Figure 6 show the current nitrate priority areas identified for Owyhee County: the Marsing, Homedale, Grand View, and Bruneau nitrate priority areas. The boundaries of the nitrate priority areas depicted on these maps are approximate.

If you own a well and live in one of the nitrate priority areas, it is particularly important to test your well water on a regular basis. If your well is not in a nitrate priority area, this does not rule out the potential for nitrate contamination, so testing your well water regularly is still recommended. **See TAB 15: *Public Information and Outreach Materials for private well owner information and analytical laboratory contacts.***

You can find more information regarding nitrates in ground water on DEQ's Web site at www.deq.idaho.gov/water/prog_issues/ground_water/nitrate.cfm.

To view an interactive map-based source of information on ground water quality analytical data collected by DEQ (or by DEQ contractors), go to <http://global.deq.idaho.gov/Website/gwq/viewer.htm>.

An interactive map-based source of information on ground water quality areas where nitrate concentrations potentially degrade drinking water quality can be found at <http://global.deq.idaho.gov/npa/>. If 25% of ground water samples collected in an area contain nitrate levels greater than or equal to one-half the federal drinking water standard, the area qualifies as a nitrate priority area. The federal drinking water standard for nitrate, as set by the U.S. Environmental Protection Agency, is 10 mg/L.

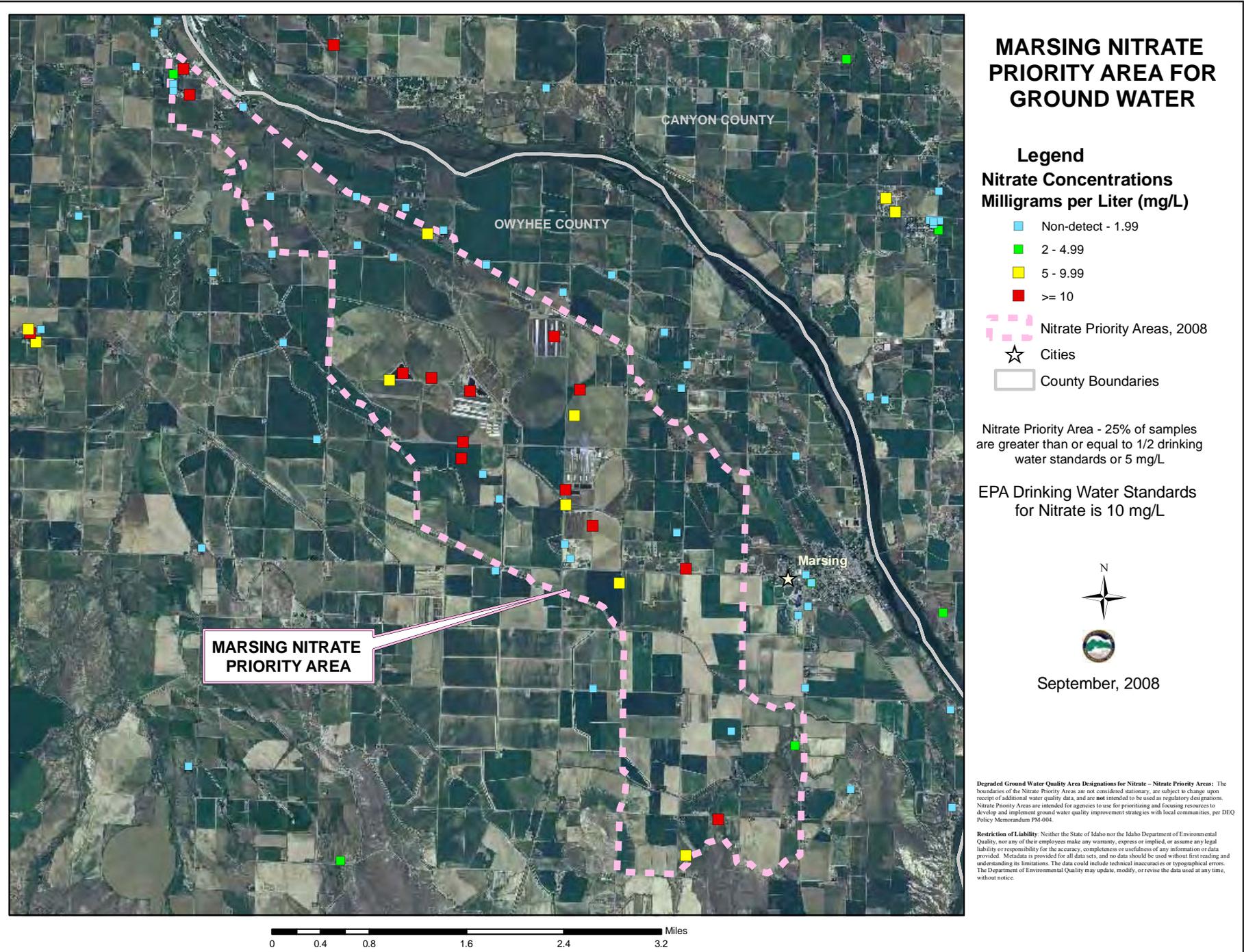


Figure 3. Marsing Nitrate Priority Area for Ground Water.

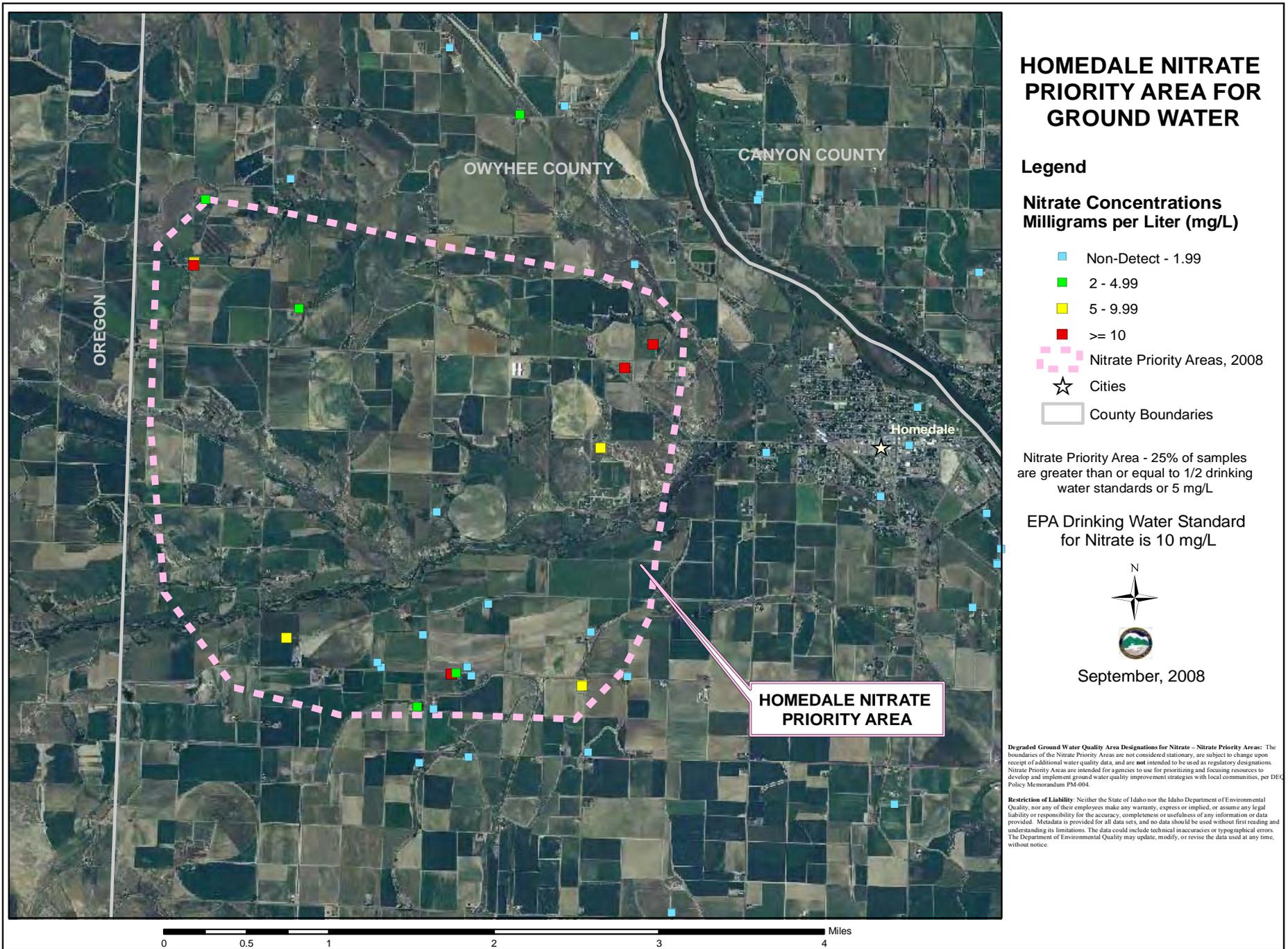


Figure 4. Homedale Nitrate Priority Area for Ground Water.

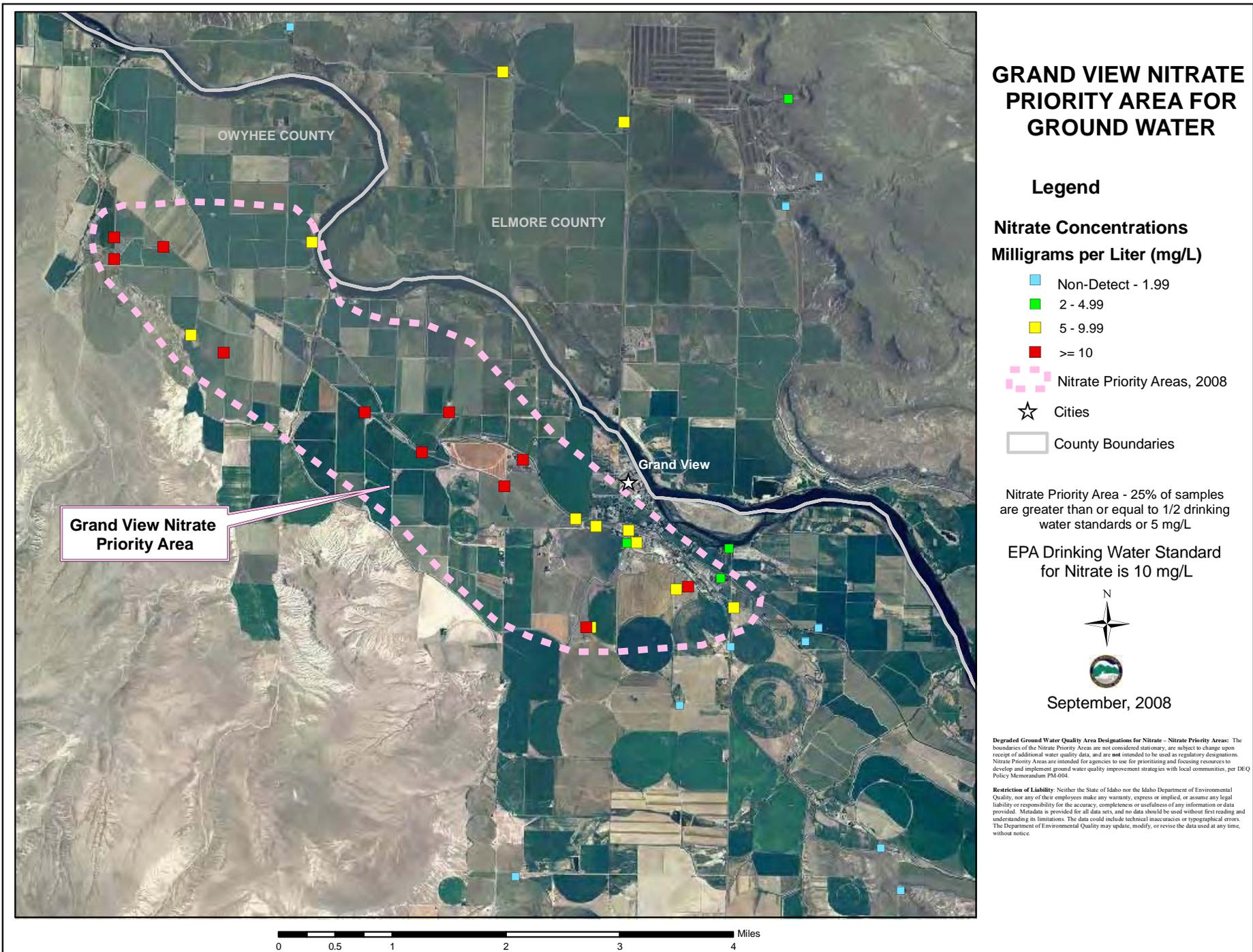


Figure 5. Grand View Nitrate Priority Area for Ground Water.

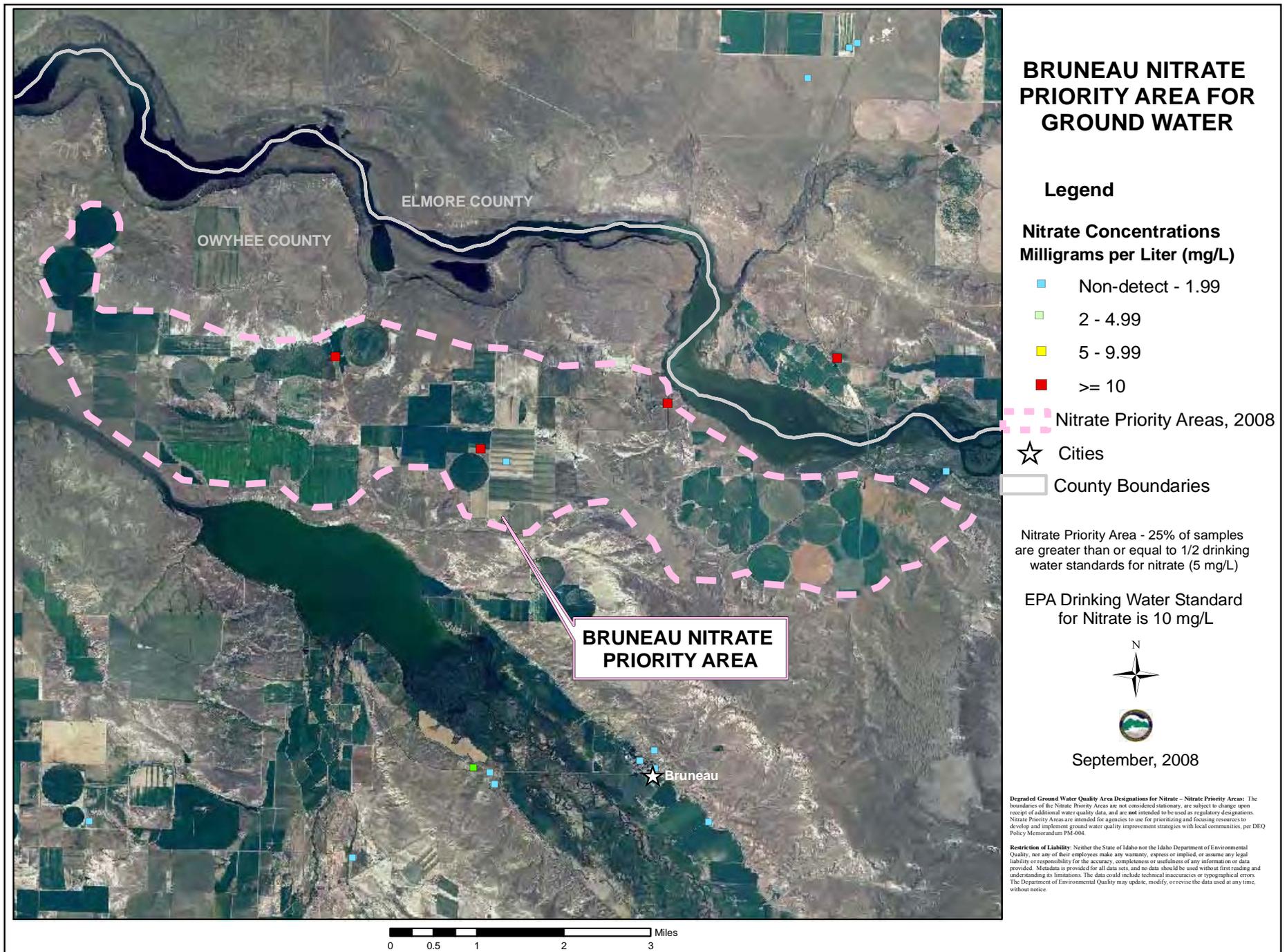


Figure 6. Bruneau Nitrate Priority Area for Ground Water.

6. OWYHEE COUNTY WATER QUALITY ACTIVITY OVERVIEW AND ACCOMPLISHMENTS

Table 3 gives an overview of the activities completed to date involving water quality in Owyhee County.

Table 3. Activities Completed to Improve Ground Water Quality in Owyhee County.

Ground Water Quality Improvement Plans		
Owyhee County Ground Water Improvement Plan		2009
Bruneau / Grand View Ground Water Management and Improvement Plan		2008
Drinking Water Source Protection Plans		
Bruneau / Grand View Ground Water Management and Improvement Plan		2008
Grand View Water and Sewer Association		2001; recertification 2008
Bruneau Water and Sewer District		2002
City of Marsing		2006
City of Homedale		2007
2008 Source Water Protection Grant: Well Decommissioning		\$17,606
48 public water systems in Owyhee County as of 2009		
Owyhee County Grant Awards for Water Quality Projects		
§319^a Grant Awards: Nonpoint Source Implementation for Surface and Ground Water		
2005	Owyhee Restoration Incentive Program I	\$225,285
2007	Owyhee Restoration Incentive Program II	\$201,785
2007	NW Owyhee County Water Quality Improvement (Ground Water)	\$249,543
2009	Bruneau/Grand View Ground Water Quality Mgt. Plan Implementation	\$238,707
Total §319 Funds since 2005		\$915,320
Surface Water Pollutant Loading Allocations and Improvement Plans (TMDLs)^b		
South Fork Owyhee River		2000
Bruneau River		2001
Owyhee River North and Middle Forks		2001
Snake River: Hells Canyon		2003
Upper Owyhee Watershed		2003
Snake River: Mid-Snake/Succor Creek		2004; temperature TMDL 2007
Snake River: King Hill/CJ Strike		2006
Jordan Creek		Draft 2007

^a Refers to section 319 of the federal Clean Water Act.

^b TMDLs = total maximum daily loads; for more information, see Tab 12, Surface Water TMDLs.

7. GENERAL STRATEGIES FOR IMPROVING GROUND WATER QUALITY

The action items in this section serve as the general regional management strategies to address nitrates in ground water needed to maintain or improve ground water quality in each nitrate priority area (NPA). These same strategies will also serve to protect and preserve shared ground water and drinking water resources throughout Owyhee County.

The implementation of these strategies is voluntary and based on the premise that the citizens of Owyhee County want to manage their activities in a way that limits potential impacts to their ground water resource.

Along with participating entities, state and federal agencies will periodically evaluate the progress and success of these strategies in reducing the nitrate levels in each NPA. DEQ will oversee implementation and progress of the plan.

The goals of implementing strategies to improve ground water quality are as follows:

1. reduce nitrate contamination in each NPA so public health is protected
2. remove the NPAs in Owyhee County from the statewide nitrate priority list
3. protect and preserve the ground water and drinking water resources in the county

The proposed objectives to achieve these goals are as follows:

- make resources available to local government that inform their decision-making processes
- educate the public about the health risks associated with drinking water containing high nitrate levels, and promote testing of individual wells for nitrate concentrations
- educate the public about the sources of nitrate in ground water in order to promote prevention, protection, and remediation efforts that can maintain and improve water quality
- implement agricultural, industrial, and residential best management practices to reduce nitrate loading of the ground water, thereby improving ground water quality

Plan development would include:

- gathering a team of government and local advocates
- seeking opportunities to hold education and outreach events
- looking for grant funding if local communities are interested

Tables 4 through 12 are organized by implementing agency and include general timeframes for the completion of each item.

Table 4. Idaho Department of Environmental Quality: 2009 Implementation Tasks for Owyhee County Nitrate Priority Areas

Idaho Department of Environmental Quality	
ACTION ITEM	TIME FRAME
Facilitation and Reporting	
Provide plan status updates to distribute at Interagency Ground Water Protection Committee meetings (see the Idaho Ground Water Protection Interagency Cooperative Agreement).	As necessary
Post summary reports and revised plan on DEQ Web site.	As necessary
Work with county commissioners and other local officials to evaluate adequacy of local zoning and land use planning initiatives.	As requested
General Information and Education	
Provide copies of the final Owyhee County Ground Water Quality Improvement Plan and any future updates to local decision makers, including Owyhee County Commissioners, Owyhee County Planning and Zoning, city planning and zoning, and Soil Conservation Districts (Bruneau River and Owyhee). Post plan and revisions to internet (DEQ Web site).	As needed
Work with communities to promote proper fertilizer application in parks, cemeteries, schools, and golf courses.	Ongoing
Plan will be available to public via the internet (DEQ Web site).	As requested
Grant Oversight	
Award and oversee \$319 grant project funding and source water protection grant projects.	Annually
Public Drinking Water Systems	
Review and approve all plan and specification reports for engineering design of new public water supplies.	As needed
Prepare source water assessments for all new supply wells.	As needed
Coauthor or write, review, and certify drinking water source protection plans for public water systems (PWSs).	As requested

Idaho Department of Environmental Quality	
ACTION ITEM	TIME FRAME
Require and review public water system monitoring data to confirm that drinking water meets all state and federal maximum contaminant levels (MCLs).	Frequencies vary
Use sanitary survey inspections to orient PWSs with delineation information, provide an opportunity for PWSs to update their potential contaminant inventory, disseminate relevant outreach/education materials, and solicit involvement in the state's drinking water protection certification program.	As needed
Monitoring	
Compile regional water quality data. With input from other agencies and the public, adjust boundaries of the Owyhee County Nitrate Priority Area (NPA) as appropriate.	2008; approximately every 5 years thereafter
Conduct coordinated ground water monitoring as deemed necessary to better characterize nitrate contamination, determine nitrate concentration trends, identify the vertical extent of contamination, and/or identify the presence of nitrate contamination within and outside of the NPA boundaries.	Regularly
Within a regional context, assess whether a ground water monitoring project is warranted and whether funding is available.	Second quarter of each year

Table 5. Southwest District Health Department: 2009 Implementation Tasks for Owyhee County Nitrate Priority Areas

Southwest District Health Department		
ACTION ITEM	Southwest District Health Department	TIME FRAME
Septic Systems		
Provide information about treatment system options and septic system maintenance at public locations in cities in or near nitrate priority areas and at the Owyhee County Courthouse.		Ongoing
Continue with the permitting of all new, expanded, and replacement septic systems.		As requested
Inspect existing septic systems when new homes or home extensions are added.		As needed
Private Water Supply Wells and Public Health		
Provide information regarding the responsibilities of being a private well owner/user at public locations in cities in or near nitrate priority areas and at Owyhee County offices. Include information and resources for understanding proper well location with respect to potential sources of contamination, installation procedures, and wellhead maintenance.		Ongoing
Provide information at public locations in cities in or near nitrate priority areas and at Owyhee County offices about the health effects of nitrate.		Ongoing
Promote regular testing of private wells.		Ongoing
Provide sample bottles and information about analytical laboratories.		As requested

Table 6. Idaho Association of Soil Conservation Districts and Idaho Soil Conservation Commission (Bruneau River Soil Conservation District/Owyhee Conservation District): 2009 Implementation Tasks for Owyhee County Nitrate Priority Areas

Idaho Association of Soil Conservation Districts and Idaho Soil Conservation Commission (Bruneau River Soil Conservation District/Owyhee Conservation District)	
ACTION ITEM	TIME FRAME
Public Awareness, Education, and Outreach	
Prepare an information and education plan that includes timelines, public service announcements, brochures, mailings, demos, tours, etc.	2009
Contact producers to inform them of the following: <ul style="list-style-type: none"> • water quality goals and objectives of projects implemented • potential agricultural impacts of nitrate contamination to ground water quality • nutrient management benefits • irrigation water management (IWM) benefits • details of incentive programs • information and education programs 	Ongoing
Conduct IWM outreach: <ul style="list-style-type: none"> • conduct irrigation workshops • make soil moisture monitoring equipment available to producers interested in optimizing irrigation applications • encourage sprinkler irrigators to take advantage of the Idaho Power Energy Efficiency in Irrigation Program 	Ongoing
Identify additional high priority landowners, then educate them about the benefits of implementing nutrient management planning (NMP)/IWM, using data and outputs compiled over the course of the project.	Ongoing
Work with communities to promote proper fertilizer application in parks, cemeteries, schools, and golf courses.	Ongoing
Work with county commissioners and other local officials to evaluate adequacy of local zoning and land use planning initiatives.	As requested
Provide information/training to private landowners who accept manure or compost from animal feeding operations for use as fertilizer. This task will include the following subtasks: <ul style="list-style-type: none"> • identify target audience • create informational brochures/flyers or pamphlets as guidance for proper storage and application methods • in coordination with the University of Idaho Extension and other interested groups, develop seminar/presentation materials for workshops • disseminate information to the target audience through mailings, workshops, or other means, as appropriate 	Ongoing

**Idaho Association of Soil Conservation Districts and Idaho Soil Conservation Commission
(Bruneau River Soil Conservation District/Owyhee Conservation District)**

ACTION ITEM	TIME FRAME
Best Management Practices - Program Planning	
Submit a §319 Clean Water Act grant application to fund implementation of best management practices (BMPs).	First quarter of 2009
Establish a steering committee of Bruneau River Soil Conservation District members and staff from IASCD, ISCC, DEQ, ISDA, and NRCS to develop a project plan that will include the following: <ul style="list-style-type: none"> • criteria for prioritizing activities in the NPA for NMP, IWM, and total maximum daily loads (TMDLs) • contracting procedures for NMP • estimating incentives to be offered and methods of distribution • monitoring and evaluation of BMP effectiveness • information and education outreach options and methods to be utilized 	May 2009
Prepare a work plan to accomplish the following: <ul style="list-style-type: none"> • Development of a producer contact list for project information and education. • Preparation of a written conservation plan and contract for NMP development and implementation (NMP services to include soil sampling, analysis, and planning for crops with cost share). • IWM through the education of landowners and installation and monitoring of water sensors. • Track load reductions. • Biannual delivery of Project Findings Reports to DEQ. • An educational campaign to major producers and other landowners. • Evaluation of unregulated manure storage sites to identify risk to ground water supplies, Develop remediation plans and implement BMPs. This project component includes evaluation of agronomic application rates. 	2009-2012.
NMP, IWM, and BMP Implementation and Evaluation	
Implement NMPs: <ul style="list-style-type: none"> • Identify high priority or critical areas to focus on • Review water quality monitoring reports and data from other agencies • Contact critical landowners • Develop and conduct NMPs • Follow-up with producers to review and evaluate NMPs • Compile general (non-producer-specific) information in report to DEQ 	

**Idaho Association of Soil Conservation Districts and Idaho Soil Conservation Commission
(Bruneau River Soil Conservation District/Owyhee Conservation District)**

ACTION ITEM	TIME FRAME
<p>IWM evaluations:</p> <ul style="list-style-type: none"> • Identify fields to evaluate • Install soil moisture equipment • Analyze data • Report findings to producers • Compile general (non-producer-specific) information in report to DEQ 	
<p>Implement BMP Effectiveness Evaluation Program:</p> <ul style="list-style-type: none"> • Analyze soil sampling data/fertilizer receipts to determine whether NMPs have been properly followed • Analyze soil moisture sensor data to evaluate irrigation management recommendations • Review ground water quality results for samples collected within all NPAs found in Owyhee County 	<p>Fourth quarter of each year.</p>
Perform Biannual Reviews and Prepare §319 Grant Report for DEQ	
<p>Conduct status review with each participant</p>	<p>Annually</p>
<p>Prepare report with general information about activities and results conducted and submit to DEQ in a time frame to coincide with the invoice period (as required by DEQ).</p>	<p>As required</p>
<p>Prepare a work plan to accomplish the following:</p> <ul style="list-style-type: none"> • Development of a producer contact list for project information and education. • Preparation of a written conservation plan and contract for NMP development and implementation (NMP services to include soil sampling, analysis, and planning for managing the amount, source, placement, form, and timing of the land application of nutrients and soil amendments for plant production.) 	<p>Implementation schedule to be set after funding is obtained. Funding expires 2012.</p>

Table 7. Natural Resources Conservation Service: 2009 Implementation Tasks for Owyhee County Nitrate Priority Areas

USDA – Natural Resources Conservation Service	
ACTION ITEM	TIME FRAME
Public Awareness, Education, and Outreach	
Coordinate with and support the Soil Conservation District information and education plan	Ongoing
Provide timely announcements of all Farm Bill sign-ups and other funding opportunities for implementation of best management practices (BMPs) to address resource concerns	Ongoing
Work with producers involved in NRCS programs to inform them of: <ul style="list-style-type: none"> • water quality resource concerns on their lands • potential impacts of nitrate contamination to ground water quality • proper nutrient management • irrigation water management (IWM) and the benefits of high-level IWM implementation • use of conservation crop rotation and other practices to mitigate ground water quality impacts 	Ongoing
Participate in community activities and meetings to provide technical assistance and information on BMPs to address ground and surface water quality concerns	Ongoing
Coordination with Conservation Partners	
Inform all conservation partners of the availability of special Environmental Quality Incentive Program (EQIP) funding (AWEP, CCPI, etc.) to target specific resource concerns/areas of concern	Ongoing
Work with the NRCS State Technical Committee and the Soil Conservation Districts to use ranking and other processes to help target special resource concerns (e.g., nitrate priority areas)	Ongoing
Participate in and coordinate with any special projects (e.g., §319 Clean Water Act projects) that are active in the county to help implement BMPs. Assist ISCC and SCD, when requested, in evaluating program success through water quality modeling of estimated load reductions.	Dependent on active project(s)
Participate as a member of the ISDA Agricultural Ground Water Committee and the IDEQ Ground Water Quality Technical Committee to stay abreast of current issues and inform partners of NRCS activities	Ongoing
Implementation of Conservation Practices	
Utilize the existing field office work plan to accomplish the following: <ul style="list-style-type: none"> • Provide information to producers on incentive programs, such as EQIP, to implement best management practices • Develop contracts with producers and assist with the implementation of needed conservation practices that address resource concerns 	Ongoing

USDA – Natural Resources Conservation Service

ACTION ITEM	TIME FRAME
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- Utilize NRCS tools to track progress and results

Contract with interested producers and provide technical assistance to implement the following conservation practices that address ground and surface water quality protection and/or mitigation:

Ongoing

- Management practices, to include:
 - Irrigation water management
 - Nutrient management
 - Pest management
 - Conservation crop rotation
 - Residue management
 - Prescribed grazing
- Structural practices and improved technologies, to include:
 - Upgrade of irrigation systems and technologies to improve efficiency
 - Filter strips and riparian buffers
 - Sediment basins and pumpback systems
 - Waste management systems and manure management on animal feeding operations

Table 8. Idaho State Department of Agriculture: 2009 Implementation Tasks for Owyhee County Nitrate Priority Areas

Idaho State Department of Agriculture	
ACTION ITEM	TIME FRAME
Education and Outreach	
Through the Agriculture Ground Water Coordination Committee, complete the following: <ul style="list-style-type: none"> • request that University of Idaho fertilizer application guides be reviewed and updated as needed • promote education/outreach regarding potential sources • voluntary implementation of best management practices (BMPs) 	Ongoing
Work with communities to promote proper fertilizer application in parks, cemeteries, schools, and golf courses.	Ongoing
Work with county commissioners and other local officials to evaluate adequacy of local zoning and land use planning initiatives.	As requested
Water Supply Wells	
Promote use of Home*A*Syst as a tool to assess and change homeowner and farmstead activities that have the potential to contaminate drinking water wells.	Ongoing
Livestock Facility Waste Management	
Continue to require nutrient management plans (NMPs) at every licensed dairy and beef cattle animal feeding operation that is designated as a confined animal feeding operation (CAFO) to help control runoff and infiltration of animal waste.	Ongoing
Identify all animal beef cattle feeding operations that could be considered significant contributors of contaminants to waters of the state and work with the operators to properly manage waste and develop NMPs for their facilities.	Ongoing
Manure Storage and Application	
Continue to aid owners/operators in developing the required manure storage and application procedures in beef and dairy facility NMPs.	Ongoing
Provide information/training to private landowners who accept manure or compost from animal feeding operations for use as fertilizer. This task will include the following subtasks: <ul style="list-style-type: none"> • identify target audience • create informational brochures/flyers or pamphlets as guidance for proper storage and application methods • in coordination with the University of Idaho Extension and other interested groups, develop seminar/presentation materials for workshops • disseminate information to the target audience through mailings, workshops, or other means, as appropriate 	Ongoing

Idaho State Department of Agriculture

ACTION ITEM	TIME FRAME
Monitoring	
<ul style="list-style-type: none">• Monitor licensed dairy annually for coliform bacteria and nitrate• Every 5 years, monitor dairy wells that have nitrate levels greater than 5 parts per million for nitrogen isotopes.• Conduct ground water monitoring for pesticides for Idaho Pesticide Management Plan and Federal Insecticide, Fungicide and Rodenticide Act grant while coordinating with DEQ and IDWR.	Ongoing

Table 9. Idaho Department of Water Resources: 2009 Implementation Tasks for Owyhee County Nitrate Priority Areas

Idaho Department of Water Resources	
ACTION ITEM	TIME FRAME
Information and Education	
Using the well permitting process, distribute information to homeowners through well drillers about the potential presence of nitrate contamination in drinking water supplies.	Ongoing
Work with county commissioners and other local officials to evaluate adequacy of local zoning and land use planning initiatives if requested.	As requested
Monitoring	
Through the Statewide Ambient Ground Water Quality Monitoring Program, conduct ground water monitoring to better characterize nitrate contamination, determine nitrate concentration trends, and identify the presence of nitrate contamination inside and outside the nitrate priority area boundaries.	Ongoing

Table 10. Confined Animal Feeding Operation Siting Team: 2009 Implementation Tasks for Owyhee County Nitrate Priority Areas

Confined Animal Feeding Operation (CAFO) Siting Team	
ACTION ITEM	TIME FRAME
The ISDA (as team lead of Idaho’s CAFO Site Advisory Team), DEQ, and IDWR will continue to review sites proposed for CAFOs, determine environmental risks, and submit site suitability determinations to counties.	As needed

Table 11. University of Idaho Cooperative Extension Service: 2009 Implementation Tasks for Owyhee County Nitrate Priority Areas

University of Idaho Cooperative Extension Service	
ACTION ITEM	TIME FRAME
Information and Education	
Provide education to all fertilizer users through Extension Service agents, workshops, a Web site, and materials such as newsletters and fact sheets. Information should address proper irrigation water application and fertilizer application procedures, rates (based on University of Idaho guidance), and timing, with consideration for crop up-take, migration of excess nitrates, and impacts to ground water.	Ongoing
Encourage ongoing outreach and provision of information by Cooperative Extension Service to small acreage operations and part time agricultural operations (hobby farms).	Ongoing
Distribute University of Idaho publications to homeowners in priority areas through mass mailings or through distribution by local retailers, and develop new publications, as needed. Educational materials should address fertilizer/pesticide application rates and impacts to ground water.	Ongoing
Promote demonstration projects and disseminate results.	Ongoing

Table 12. Owyhee County and Municipalities: 2009 Implementation Tasks for Owyhee County Nitrate Priority Areas

Owyhee County and Municipalities	
ACTION ITEM	TIME FRAME
Ground Water Quality Protection	
Idaho Code Title 39, Chapter 1 (Environmental Quality – Health) states, “Cities, counties and other political subdivisions of the state shall incorporate the ground water quality protection plan in their programs and are also authorized and encouraged to implement ground water quality protection policies within their respective jurisdictions...” (§39-126, available on the Internet at http://www3.state.id.us/cgi-bin/newidst?sctid=390010026.K).	As appropriate
Education and Outreach	
Work with residents, landscape contractors, cemeteries, and schools within jurisdiction to promote proper fertilizer application.	Ongoing
Work with DEQ, ISDA, IDWR, ISDA, IASCD/ISCC, other agencies, and local governments to gather their input on local zoning, plans, and ordinances.	As needed
Comprehensive Planning	
Idaho Code Title 67, Chapter 65 (Local Land Use Planning) states that when considering amending, repealing, or adopting a comprehensive plan, the local governing board shall consider the effect the proposed amendment, repeal, or adoption of the comprehensive plan would have on the source, quantity and quality of ground water in the area (§67-6537, available on the Internet at http://www3.state.id.us/cgi-bin/newidst?sctid=670650037.K).	As appropriate
Identify and map watersheds, aquifer recharge areas, ground water basins, and unique water resource conditions in order to provide a framework for understanding the potential impacts of development on water quality and water resources in areas of interest.	
Identify existing and potential water pollution sources (landfills; chemical storage sites; abandoned commercial, industrial, and mine properties; and agricultural nonpoint sources) when considering land use changes.	
Identify appropriate land uses in areas of sensitive water resources.	
Ordinance Development	
Develop ordinances that support the comprehensive plan and ground water / drinking water resource protection.	As appropriate
Consider a requirement for additional studies to assess impacts to ground water quantity and/or quality due to development activities and changes in land use.	

Owyhee County and Municipalities

ACTION ITEM	TIME FRAME
Planning and Zoning Decisions	
<ul style="list-style-type: none"> • Consider potential impacts to water quality when evaluating land use changes. • Utilize the Confined Animal Feeding Operation (CAFO) Siting Team to review sites proposed for CAFOs and determine environmental risks. • Consider any sensitive areas or zones such as the following where land use changes may have an increased harmful impact on ground water resources: <ul style="list-style-type: none"> ○ Fertilizer manufacturing and/or distribution centers ○ Commercial endeavors that utilize large volumes of liquids in above-ground and below-ground tanks ○ placement and/or expansion of CAFOs or animal feeding operations ○ Subdivision development; specifically residential densities utilizing individual wells and septic systems 	As appropriate
<p>Work with the Association of Idaho Cities and Idaho Association of Counties as necessary and appropriate.</p>	Ongoing and as appropriate

8. NITRATE

Why is Nitrate a Concern?

Ground water supplies 95% of the water used in Idaho households and provides drinking water to more than 200 Idaho cities and towns. High levels of nitrate in drinking water are associated with adverse health effects. Therefore, strategies that eliminate or minimize nitrate contamination in the environment are critical.

Nitrate is a form of nitrogen, and nitrate levels in ground water serve as an indicator of the vulnerability of the ground water. Nitrogen is an essential nutrient for plant growth; its compounds are vital components of foods and fertilizers. Nitrate comes from a variety of sources, such as precipitation, septic sewer systems, plants, waste from animals, nitrogen-based fertilizers, and other organic matter that returns nitrate to the soil as it decomposes.

Ground water quality monitoring by DEQ, the Idaho Department of Water Resources, the Idaho State Department of Agriculture, and the United States Geological Survey has indicated that nitrate concentrations above or near the 'maximum contaminant level (MCL) established by the U.S. Environmental Protection Agency (EPA) exist in some areas of Idaho.

Nitrate contamination, which is related to land use activities, is both widespread and preventable. In fact, it is “the most widespread contaminant found in Idaho ground water and the most common contaminant identified in public water drinking systems” (DEQ, 2001).

In areas with vulnerable aquifers, nitrate from sources such as fertilizer, livestock manure, or septic waste can contaminate ground water and reach a water supply. While many other contaminants have been identified in Idaho ground water, nitrate's abundance, chemical mobility, and clear association with widespread land uses establishes it as a priority contaminant for Idaho ground water. However, where such waters are susceptible to nitrate contamination, other contaminants may also be present or pose a threat.

Drinking Water Maximum Contaminant Level

EPA has established federal drinking water standards, called MCLs, for many contaminants; the MCL for nitrate is 10 milligrams per liter (mg/L). The Idaho ground water quality standard for nitrate in drinking water is also 10 mg/L. Nitrate concentrations of 2 mg/L or greater generally indicate an anthropogenic (human-caused) impact to ground water.

People who rely on private wells for their drinking water supply are particularly at risk of exposure to high levels of nitrate and other contaminants. Private well owners are not required to test their water and may not be aware that a problem exists. **See TAB 15: *Public Information and Outreach Materials* for private well owner information and analytical laboratory contacts.** Public water systems, however, are subject by law to regular testing, and nitrate levels must be below the MCL of 10 mg/L.

Health Effects

Elevated nitrate levels can pose a health problem for both humans and animals and can be an indicator of other water quality problems. The MCL of 10 mg/L is based on studies assessing the risk of developing methemoglobinemia (also known as blue baby syndrome) in infants as a result of exposure to nitrates. Methemoglobinemia is the inability to absorb oxygen in the blood system. Nitrate levels above the regulatory level have been associated with methemoglobinemia. The condition is usually associated with newborns and infants up to 6 months of age and occurs when nitrate is converted to nitrite in a child's body. Nitrite reduces oxygen in the child's blood, causing shortness of breath and blueness of skin. This condition can be serious, causing the child's health to deteriorate rapidly over a period of days.

Other populations potentially vulnerable to methemoglobinemia include pregnant women, adults with reduced stomach acidity, adults who lack a hereditary enzyme needed to combat effects of nitrate in their body, and dialysis patients (Cohen and Wiles, 1996).

High-nitrate water is generally a health hazard to animals only when used with high-nitrate feed. Short-term use of water with nitrate levels up to 40 mg/L is generally considered acceptable for animals. Water with nitrate levels greater than 100 mg/L is not recommended for livestock (Mahler, 2007).

For more information about how water quality can affect animals, visit Washington State University's College of Veterinary Medicine Web site at www.vetmed.wsu.edu/rdvm/links.aspx or the University of Idaho's College of Agricultural and Life Sciences Web site at www.avs.uidaho.edu/

Nitrate in Ground Water

Nitrate is soluble in water and can easily pass through soil to the ground water. Ground water is the major source of drinking water in the northern Owyhee County area, so ground water with high nitrate levels can potentially impact drinking water supplies. Nitrate can persist in ground water for decades and accumulate at high levels as more nitrogen is added to the soil every year and leaches into the ground water. High levels of nitrate in soil, ground water, and drinking water can originate from the application of nitrogen in the form of commercial fertilizer and animal waste, legume crop plow-down, and septic tank failures. Shallow wells, wells in sandy soil, or wells that are improperly constructed or maintained are more likely to have nitrate contamination than deeper wells with protective casing and an effective well seal.

Nitrate is often an indicator of aquifer vulnerability, with the presence of higher concentrations of nitrate in ground water associated with certain land use activities. Whenever nitrogen-containing compounds come into contact with soil, a potential for nitrate leaching into ground water exists. Nitrate is highly soluble and will stay in solution in percolation water after leaving the root zone, until it reaches ground water.

9. POTENTIAL SOURCES OF NITRATE

"It's not a matter of who is most responsible.

What's important is that you do what you can in the hope that...

What you do matters." --unknown

Sources of nitrate include both point and non-point sources. A point source is a source of contamination that is distinct and map able. A nonpoint pollutant source is a source of contamination with no visible or obvious point from which the contamination originates. Identified below are land use practices that can act as both point- and nonpoint sources associated with nitrate contamination. When these land use practices are managed appropriately, they do not result in water quality degradation. However, land use practices such as these can lead to decreased water quality when poorly managed or inadequately controlled.

Residential Land Uses

Fertilizer Application / Irrigation Practices / Other Residential Activities. The following are types of activities associated with residential development that are possible contributors to nitrate problems in residential areas:

- excessive fertilization related to landscaping, lawns, and gardens
- over-watering related to landscaping, lawns, and gardens
- well construction (some well drilling practices such as open bore holes and perforated casings provide for mixing of aquifers), well abandonment, wellhead management, and well location
- animal pastures and/or ranchettes (small residential acreages)

The combination of these activities with septic system discharge makes residential developments a potential source of nitrate contamination in ground water.

Contaminated water moving down a well casing from the land surface to ground water or moving between aquifers via well bores can contribute to the nitrate contamination problem. Improperly sealed wells can facilitate water movement, possibly carrying contaminants from the land surface to the ground water or between aquifer units.

Locating a septic system or other contamination source too close to or upgradient from a poorly-sealed well may cause the well to capture contaminated water and allow contaminated water to move further into the aquifer or between aquifers. Improperly abandoned wells provide a direct connection between the surface and the aquifer, which could allow surface contamination a direct path to ground water.

Pasturing animals on small acreages can also degrade ground water if not managed properly. According to Scott Jensen with the Canyon County Cooperative Extension Service (2002), "pasture management involves more than just grass care. It involves managing the interrelationships among animals, plants, and soil."

Information for rural residential homeowners is currently available from the Cooperative Extension Service and through the Home*A*Syst Project (H*A*S). The H*A*S is designed to help homeowners become aware of conditions or practices on their properties that increase the risk of drinking water contamination. The H*A*S materials allow homeowners, farmers, or ranchers to assess practices and activities for their potential to contaminate ground water. Fact sheets available at <http://homeasyst.idahoag.us/> provide information about practices and structures that can help reduce the risk of ground water contamination. The Idaho Association of Soil Conservation Districts coordinates this project.

Septic Systems. Domestic septic systems may contribute to elevated concentrations of nitrate in ground water.

The standard household septic system is not designed to effectively treat wastewater for nitrates. Properly operating systems deliver a certain amount of nitrate to the ground water (an average of about 45 mg/L nitrate [U.S. EPA 1978]). Generally, this source of nitrate is not a concern when the volume of wastewater is relatively small compared to the volume of ground water. Ground water problems can occur in areas where high septic densities exist. Areas of high septic density occur primarily within the urban growth boundaries of cities or in isolated subdivisions. In low-density settings, the impact to ground water is low because the ground water dilutes the wastewater and, generally, a small volume of wastewater discharge is spread over a large area. However, as densities increase, the discharge volume increases and may overcome the ground water's ability to dilute the wastes, thereby increasing the potential for contamination. Idaho's septic system regulations under IDAPA 58.01.03, Individual/Subsurface Sewage Disposal Rules, and IDAPA 58.01.15, Rules Governing the Cleaning of Septic Tanks, are implemented through Idaho's public health districts, with technical assistance from DEQ. In cases where the concentration of nitrate entering the groundwater may be a problem, additional treatment systems can be placed on the septic tanks such that the effluent nitrate concentration is reduced to 27 mg/L or 16 mg/L.

In Nitrate Priority Areas, the health districts require a ground water impact analysis be conducted for all proposed subdivisions to assess the number of septic tanks that can be placed on a subdivision site and not adversely impact ground water quality. (These analyses are referred to as Nutrient Pathogen (NP) Studies). DEQ reviews the NP Studies on behalf of the health districts.

The health districts also implement the day-to-day activities in regulating septic systems by conducting site evaluations, issuing system permits, issuing septic tank pumper licenses, and conducting inspections. Health district programs include establishing design standards and accepted waste management practices for private septic systems, establishing the criteria under which sanitary permits are issued to build private septic systems that discharge pollutants to waters of the state, and establishing site soil evaluation standards for placement of septic systems.

Other DEQ responsibilities in septic system regulation include conducting plan and specification reviews for large soil absorption systems (LSASs, which are drainfields with greater than 2500 gallons per day effluent), reviewing Nutrient-Pathogen studies for LSASs, heading the technical guidance committee, reviewing new technologies, and providing training courses for installers and pumpers.

Agriculture

Sources of nitrate from agricultural activities come from all forms of fertilizers, legumes, and organic matter. Nitrogen not utilized by plant growth is stored in the soil and can be leached to ground water as nitrate if sufficient water is available to move it through the various layers of soil (known as the soil profile).

Factors that influence the degree of nitrogen leaching in agriculture areas are soil type, irrigation amounts and practices, nitrogen source and application rate, and the season of application. Over-application of nitrogen can occur in several ways:

- applying fertilizers at rates greater than what the crop needs or can utilize
- failing to account for residual and organic nitrogen sources already present in the soil profile, especially in the form of nitrogen-fixing crops
- inappropriately timing nutrient application with regard to crop needs
- failing to account for other nitrogen sources such as irrigation water
- failing to calibrate solid waste delivery systems to ensure uniform application over the land application area
- failure to conduct nutrient analysis of solid waste and wastewater prior to land application to know the appropriate amount to apply

Irrigated agriculture may include gravity, solid set, hand line, wheel line, drip, surge, and center pivot systems. All irrigation systems have the potential to increase nitrate levels in ground water. Gravity methods of irrigation are most highly disposed to the leaching of nitrate through the soil profile due to the volume of water applied.

A number of programs and activities address irrigation practices. The University of Idaho's Nutrient and Pest Management Program is an educational effort based on soil testing programs and soil fertility recommendations by soil type and crop. The Natural Resources Conservation Service, with the Idaho Soil Conservation Commission and local soil conservation districts, coordinates and implements a number of programs that use cost sharing of best management practices and educational outreach to reduce nutrient loads from agriculture and provide nutrient management planning and engineering technical support, including the Environmental Quality Incentives Program, the Soil and Water Conservation Assistance Program, and the State Water Quality Program for Agriculture.

Animal Feeding Operations and Dairies

Sources of nitrate from animal feeding operations include runoff, facility wastewater, and manure. An animal feeding operation is generally defined as the holding or confining of animals in buildings, pens, or lots. To protect ground water, regulations regarding solid and liquid effluents are in place for animal feeding operations.

The Idaho State Department of Agriculture (ISDA) has the authority to promulgate and enforce rules for dairy operations. Noncompliance with the rules or discharge violations may result in revocation of authority to sell milk for human consumption. ISDA also conducts dairy waste inspections to prevent waste discharges and evaluate waste collection, treatment, handling, disposal, and management procedures for compliance with the federal Clean Water Act and ISDA regulations.

ISDA also monitors ground water nitrate concentrations yearly at all dairies in Idaho. Every 5 years, ISDA will run nitrogen isotope tests on water samples from all dairies showing nitrate concentrations greater than 5 parts per million. Additionally, ISDA has authority to require further compliance and operation changes where there is evidence that a dairy is a source of nitrate and is contributing to aquifer degradation. To date, follow-up has been restricted due to limited staff resources.

Industrial/Municipal Wastewater Land Application Areas

Wastewater land application facilities generate nutrient-rich water called process water. Such facilities are among the few sources of nitrate that are regulated by DEQ. These facilities are required to obtain a wastewater reuse permit to apply wastewater to land. DEQ's regulatory waste discharge permit system requires land appliers to take the following steps:

- schedule process water applications to meet crop nutrient and water needs
- develop management plans for irrigation and nutrient use
- develop water and nutrient budgets
- sample wastewater, ground water, soil, and crops as required by permit
- prepare reports on how activities are functioning and whether the process is meeting established goals

Ground Water Recharge

Unmanaged ground water recharge occurs whenever standing water is allowed to seep into the soil. Depending on the specific conditions, unmanaged recharge with contaminated water may adversely affect the ground water quality.

Managed ground water recharge takes place when water is pumped, allowed to seep, or is injected into the ground to replenish the aquifer.

Ground Water/Surface Water Interaction

The mutual influence and interaction between ground water and surface water quality are important considerations in evaluating sources of nitrate contamination. In some areas, ground water and surface water are hydraulically connected and combine to form a single water source.

Storm Water Disposal

Land development increases the volumes of storm water runoff and concentrations of pollutants. Storm water runoff contains a variety of contaminants, including nutrients. However, because nitrate is found in relatively low concentrations in most storm water, it has a low to moderate potential for contaminating ground water, either through surface percolation (the downward movement of water through soil and rocks) or through subsurface infiltration/injection practices (Pitt et al., 1994).

The most common methods of storm water management include ponds (retention, detention, evaporation, and infiltration), seepage beds, swales, or some combination. Practices that infiltrate

storm water (in other words, allow storm water to enter the soil's surface) have the greatest potential to contribute nitrate to ground water.

Over the past thirty years, a number of local jurisdictions have implemented storm water management functions at various levels of authority. These entities may have requirements for the detention or retention of storm water runoff when development occurs. In practice, the jurisdictions that require on-site control of post-development flows expect storm water runoff to be retained on-site. This is because few developments have access to a drain, canal, or water body for off-site discharge of storm water runoff.

In addition, federal storm water regulations require some municipalities, construction sites greater than one acre, and certain types of industrial facilities to obtain permits from EPA to discharge storm water. In some urban areas, National Pollutant Discharge Elimination System (NPDES) permits are required for storm water runoff. For more information on NPDES permit requirements, see EPA's Web site at <http://yosemite.epa.gov/r10/water.nsf/Stormwater/stormwater+permits>.

Federal regulations require that municipalities implement programs to control runoff from new developments and redevelopment.

10. OWYHEE COUNTY PHYSICAL SETTING

This section discusses land use and the geologic setting and conditions in Owyhee County.

Land Use

Owyhee County is the second largest county in Idaho and covers 4,906,220 acres. Most of the land in the county is owned and managed by the federal government through the Bureau of Land Management (BLM). Private landowners comprise the next largest property ownership. Land ownership is depicted in Figure 7.

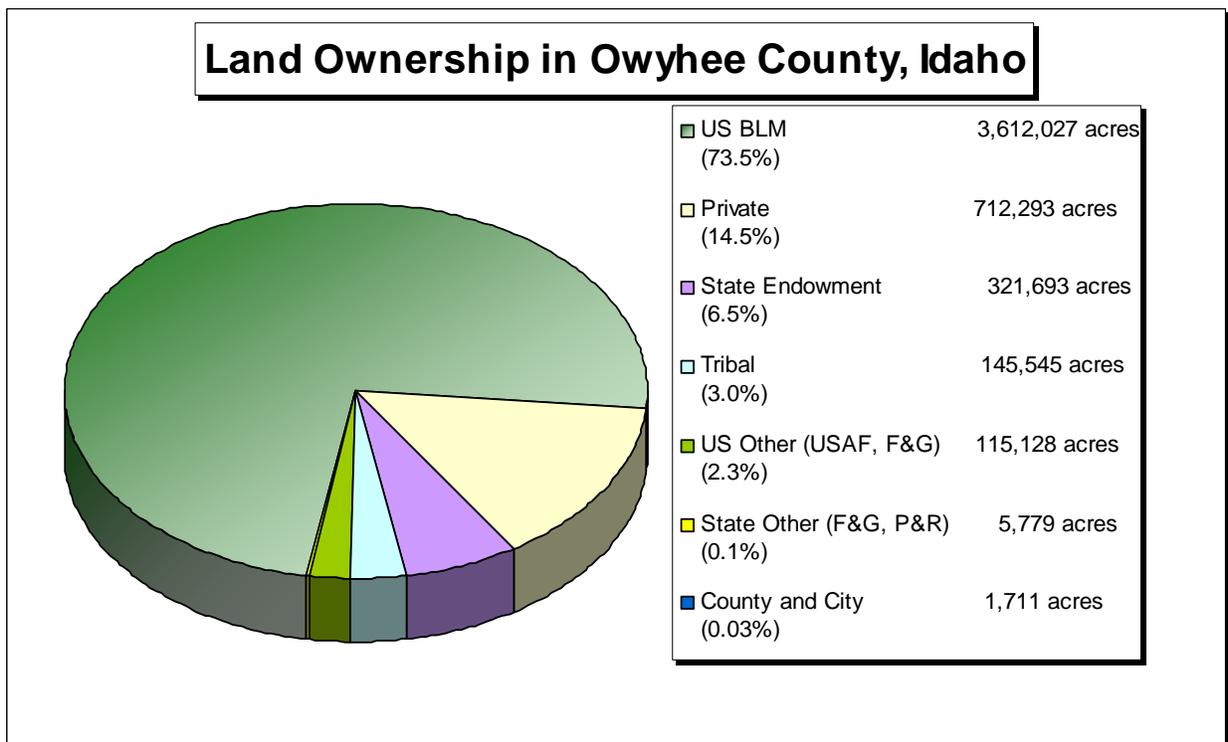


Figure 7. Land Ownership in Owyhee County, Idaho. (BLM = Bureau of Land Management; USAF = US Air Force; F&G= Fish and Game; P&R= Idaho Parks and Recreation.)

Land use in Owyhee County can be divided into five primary categories: open range (rangeland), barren land, agriculture, forest, and water bodies, as depicted in Figure 8.

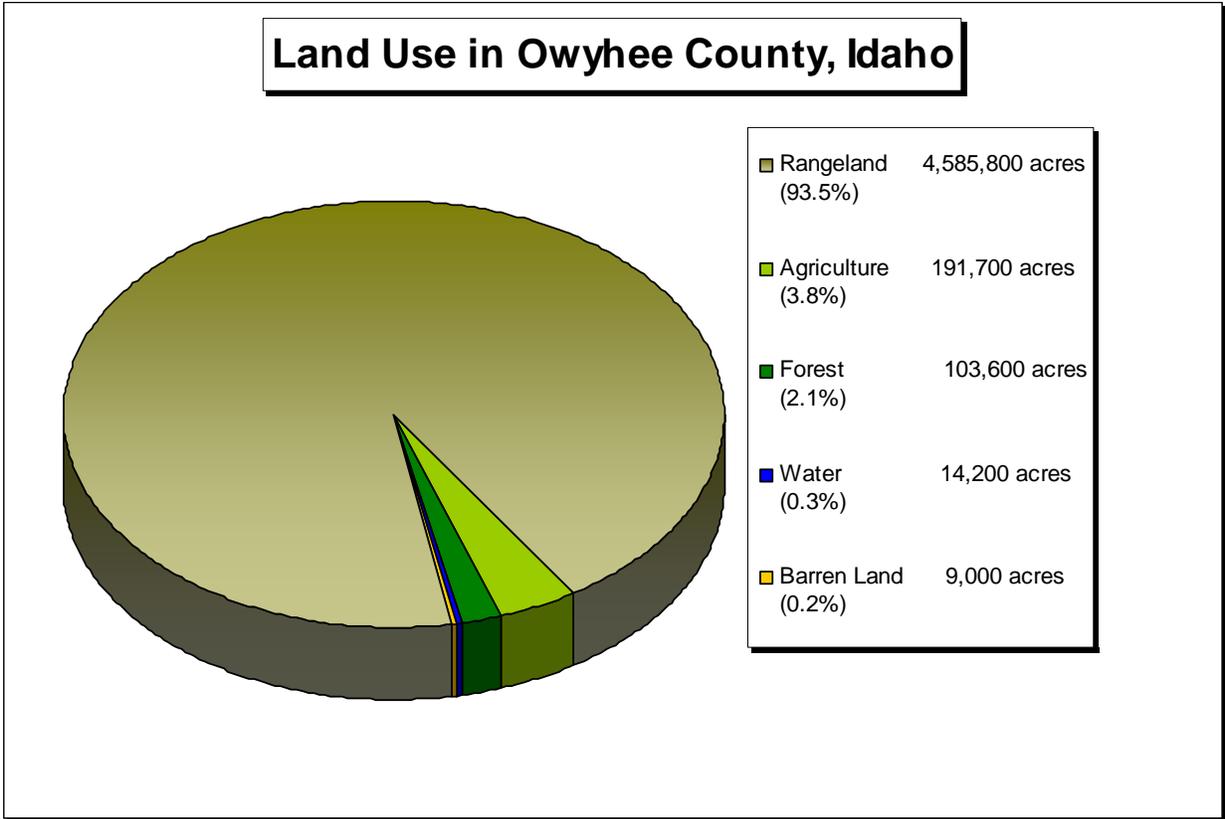


Figure 8. Land Use in Owyhee County, Idaho.

The majority of the irrigated agriculture, confined animal feeding operations (CAFOs), and dairies are located in the corridor between the Snake River and the foothills of the Owyhee Mountains to the southwest of the Owyhee River. Along this corridor, approximately 122,000 acres are under irrigation; the major crop is alfalfa. Other crops include corn and wheat, with minor acreage planted in sugar beets, potatoes, beans, barley, and oats. According to the Idaho State Department of Agriculture, there are 38 CAFOs and 16 licensed dairies in Owyhee County.

In 2005, the population of Owyhee County was estimated to be 11,073 of which, 8220 live in rural areas and the remaining 2853 residents live in urban centers. The urban communities of Homedale, Marsing, Bruneau, and Grand View utilize community water supplies and community wastewater treatment plants. The towns of Murphy and two subdivisions near Marsing also have community water supplies. However, most residents utilize individual wells and individual septic tanks.

Geologic Setting and Ground Water Conditions

Physical Setting

Owyhee County covers a very large area in the southwestern corner of the state that is bounded on the west by Oregon, on the south by Nevada, on the east by Twin Falls County, and on the north by the Snake River. The Owyhee Mountains (with a peak elevation of 8,403 feet) trend in a northwesterly direction across the north-central part of the county parallel to and south of the Snake River. The Snake River lies approximately 15 to 20 miles northeast of the mountain crest.

The Owyhee River crosses the southwestern corner of the county, approximately 40 miles south of the mountain crest. The upland area southwest of the Snake River (and Snake River Plain geomorphic province) is referred to as the Owyhee Plateau geomorphic province.

Drainage in the northern part of the county is northerly toward the Snake River; in the southern portion of the county, drainage is southerly toward the Owyhee River. Steep canyons have been carved through the bedrock uplands along Sheep Creek and the Bruneau and Jarbidge Rivers in the eastern portion of the county as the creek and two rivers make their way around the Owyhee Mountains to the Snake River.

Regional Geology

The northwestern and highest portion of the Owyhee Mountains (near Silver City) is underlain by Cretaceous granitic rocks (65.5 to 145.5 million years old) that have intruded into Paleozoic sedimentary rocks (more than 250 million years old). The granitic rocks are considered to be an outlier of the Idaho Batholith, which underlies most of the high mountains in the central portion of the state.

The bulk of the rest of the county is underlain by rhyolite (high silica) lava flows and ignimbrites that erupted approximately 16 million years ago from the “Bruneau-Jarbidge eruptive center”, located in the southern portion of the county. These high temperature, high volume rhyolite eruptions are very rare geologically. Younger (less than 2 million years old) basalt (low silica) flows cover much of the rhyolite in the eastern and southern portions of the plateau and are also exposed in the northwestern-most mountains.

Between the Owyhee Mountains and the Snake River are lake and fluvial sediments associated with Lake Idaho, a large lake that formed in the Treasure Valley area some 10 million years ago. Along the Snake River are recent fluvial sediments with local basalt flows.

Figure 9 is a generalized geologic map of Owyhee County that shows the rock types present at the earth’s surface. The granitic and volcanic rocks, which underlie most of the county, are shown in shades of orange and red. The pale pink, yellow, and tan colors indicate the clastic sediments of gravel, sand, silt, and clay.

Ground Water Conditions

The ground water system that underlies the agricultural area between the foothills and the Snake River occurs primarily within fractured basalt and sedimentary sequences of unconsolidated to consolidated gravel, sand, silt, and clay. Some water is obtained from fractured rhyolite at depth. Most domestic wells screen either sedimentary or basalt rocks. Static water levels in the drinking water wells generally range from 3 feet to over 400 feet, and yields to wells vary widely from 3 to 3500 gallons per minute.

Little is known about detailed ground water flow directions over most of the county. Shallow flow directions between the mountains and the Snake River are anticipated to be northerly toward the Snake River.

Maps from the IDWR publication “Groundwater Resources of Idaho” by W.G. Graham and L.J. Campbell (August 1981) are provided at the end of this section. Figure 10 shows the locations of the major ground water flow systems in the county (and the state as a whole). Figure 11 shows the lithologies encountered within each flow system, and Figure 12 shows the ground water

potentiometric contours (and flow directions) that are known for the ground water flow systems. Figure 10, the ground water flow map for the state, highlights how few flow directions have been documented in Owyhee County.

Regional ground water quality studies have indicated that arsenic, fluoride, and lead have been detected locally in ground water at concentrations that exceed their federal drinking water standards (0.01 milligrams per liter [mg/L] for arsenic, 4 mg/L for fluoride, and 0.015 mg/L for lead). Dissolved solids and concentrations of dissolved iron and manganese in the county have also been shown to occasionally exceed secondary standards (500 mg/L for dissolved solids, 0.03 mg/L for dissolved iron, and 0.05 mg/L for dissolved manganese).

A 2004 report from a ground water study on arsenic conducted by DEQ is available at www.deq.idaho.gov/water/data_reports/ground_water/arsenic_county_level.pdf.

Various pesticides have also been detected in ground water within northwest Owyhee County, including DCPA (Dacthal). ISDA is implementing IDAPA 02.03.01, Rules Governing Pesticide Management Plans for Ground Water Protection. These ISDA rules can be found at <http://adm.idaho.gov/adminrules/rules/idapa02/0301.pdf>.

Owyhee County

Owyhee County covers a huge area in southwest Idaho, south of the Snake River. It contains the wilderness of the Owyhee Plateau and the narrow canyons of the Bruneau and Jarbidge rivers. In the northwest it contains Cretaceous granodiorite near Silver City, an outlier of the Idaho batholith, that intrudes Paleozoic sedimentary rocks. Silver City was site of a mining boom in the middle 19th century.

The bulk of the county is underlain by voluminous rhyolite lava flows and ignimbrites erupted from the Bruneau-Jarbidge eruptive center around 16 million years ago. These high temperature, high volume rhyolite eruptions are unique in the world. They were produced by the Snake River Plain hotspot, as it sat under southwest Idaho in middle Miocene time. Pliocene basalt covers the rhyolite in much of the eastern and southern parts of the plateau.

The margins of the Owyhee Plateau expose Miocene lake and fluvial sediments, and basalt flows, deposited in Lake Idaho and its margins. Along the Snake River are Quaternary fluvial sediments and basalt lava flows.

The entire county is laced with northwest striking faults, mainly normal faults, dipping north, toward the western Snake River Plain graben.

P.K. Link, 10/02

Description of Geologic Units for Owyhee County, Idaho

- Qa** Quaternary alluvial deposits
- Qg** Quaternary gravels; forming terraces above modern stream levels, mainly mapped on western Snake River Plain. Unit generally represents detrital glacio-fluvial systems.
- Qs** Quaternary surficial cover, including colluvium, fluvial, alluvial fan, lake, and windblown deposits. Included fluvial cover on Snake River Plain, (Snake River Group).
- Qw** Quaternary windblown deposits; sand dunes and loess.
- Qbf** Bonneville Flood gravels, including boulder and gravel bars north and west of Red Rock Pass through Marsh Valley and along Snake River west of Pocatello to Hells Canyon. Town of Lewiston is underlain by Bonneville gravels.
- Qb** Pleistocene basalt lava, 2 million to 12,000 years old, flows have some vegetation and surface weathering.
- QTS** Pleistocene and Pliocene stream and lake deposits; sand, gravel and mud; Lake Idaho sediments; Glenns Ferry Formation; Idaho Group.
- Tps** Pliocene and Upper Miocene stream and lake deposits (Salt Lake Formation, Starlight Formation, Idaho Group).
- Tpf** Pliocene and Upper Miocene felsic volcanic rocks, rhyolite flows, tuffs, ignimbrites. (in Owyhee County and Mt. Bennett Hills, this should be Tmf).
- Tpb** Pliocene and Upper Miocene basalt (includes parts of Starlight Formation and Salt Lake Formation) (in Owyhee County and Mt. Bennett Hills, this should be Tmb).
- Tcv** Eocene Challis Volcanic Group, volcanics and volcaniclastics; Older andesitic lavas, intermediate age dacite lava and tuff and younger rhyolite flows and tuffs; 51 to 44 Ma. (Includes Potato Hill and Kamiah volcanics of northern Idaho).
- Tmb** Miocene basalt (basalt of Weiser and basalt of Cuddy Mtn.) (split with Tpb is at 5 Ma) (includes rocks shown as Tpb (Bond, 1978) in Owyhee County and Mt. Bennett Hills).
- Tcr** Miocene basalt (Columbia River Basalt Group); flood basalt, extensively exposed in western Idaho; fed by fissures, many of which are near the Idaho-Oregon border. Flowed eastward up valleys cut into the Idaho mountains.
- Tov** Oligocene volcanics; Potlatch volcanics, basalt and trachytic pyroclastic rocks [alkali-rich basalts] and Salmon Falls Creek volcanics [andesites].

- Tmf** Miocene felsic volcanic rocks, rhyolite lava, ignimbrite, fallout tuff (Idavada volcanics), includes rocks designated as Tmf (Bond, 1968) in Owyhee County and Mt. Bennett Hills.
- Kgd** Cretaceous granitic rocks of the 2 mica suite. Idaho batholith and related plutons; granite and granodiorite that contains both muscovite and biotite. Sodium (Na) rich. Intruded between 80 and 65 Ma.
- Pzu** Upper Paleozoic sedimentary rocks.

Symbols

 Geologic unit contacts with unit designation.  Normal fault: certain; dashed where approximately located; dotted where concealed.  Thrust fault: certain; dashed where approximately located; dotted where concealed.  Detachment fault: certain; dashed where approximately located; dotted where concealed.  Anticline: trace of axial plane: large arrow indicates direction of plunge.  Syncline: trace of axial plane: large arrow indicates direction of plunge.	 Overturned anticline: trace of axial plane.  Overturned syncline: trace of axial plane.  Location of ISU Rockwalk rock from each county.  Cities  Feature location <p>Roads</p>  Interstate Route  U.S. Route  State route
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Major Groundwater Flow Systems in Idaho

Modified from R. L. Whitehead, 1979

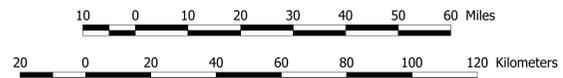


- | | |
|---|--|
| North Idaho | 35. Juniper Basin |
| 1. Kootenai Valley | 36. Duck Valley |
| 2. Priest River | South Central Idaho |
| 3. Pend Orielle River | 37. Camas Prairie |
| 4. Rathdrum Prairie | 38. Big Wood River - Silver Creek |
| 5. Coeur d'Alene River - Silver Valley | 39. Snake Plain |
| 6. Rock Creek | 40. Salmon Falls Creek - Rock Creek |
| 7. Hangman Creek | 41. Goose Creek - Golden Valley |
| 8. Palouse River | 42. Marsh Valley |
| 9. St. Maries - St. Joe River | 43. Raft River Valley |
| 10. Moscow Basin | Southeast Idaho |
| Central Idaho | 44. Black Pine - Curlew Valley |
| 11. Clearwater Uplands (Mussel Shell Basalt Subsection) | 45. Rockland Valley |
| 12. Clearwater Plateau | 46. Arbon Valley |
| 13. Joseph Plains | 47. Pocatello Valley |
| 14. Mill Creek | 48. Malad Valley |
| 15. Little Slate Creek | 49. Marsh Creek - Lower Portneuf River |
| 16. Elk City | 50. Cache Valley |
| 17. Red River | 51. Portneuf Valley - Gem Valley |
| Southwest Idaho | 52. Gem Valley - Gentile Valley |
| 18. Meadows Valley | 53. Soda Springs |
| 19. South Fork Salmon River | 54. Upper Blackfoot River |
| 20. Stibnite | 55. Bear River - Dingle Swamp |
| 21. Long Valley - Round Valley | 56. Blackfoot Reservoir |
| 22. Weiser River | 57. Willow Creek - Grays Lake |
| 23. Deadwood River | 58. South Fork Snake River |
| 24. Sawtooth Valley - Bear Valley | 59. Star Valley - Sage Valley |
| 25. Garden Valley | 60. Teton Basin |
| 26. Scott Creek - Mann Creek | 61. Island Park |
| 27. Payette Valley | East Central Idaho |
| 28. Grimes Creek | 62. Birch Creek Valley |
| 29. Mores Creek | 63. Lemhi Valley |
| 30. Boise Valley | 64. Little Lost River Valley |
| 31. Mountain Home Plateau | 65. Pahsimeroi Valley |
| 32. Homedale - Murphy | 66. Big Lost River Valley |
| 33. South Fork Boise River | 67. Copper Basin |
| 34. Bruneau - Grandview | 68. Round Valley |
| | 69. Upper Salmon River |
| | 70. North Fork Salmon River |

Flow System Boundary
Areas of Underflow to Adjacent Flow System

SCALE 1:1,000,000

1 inch represents 15.78 miles



Map Projection: Idaho Transverse Mercator



05/17/00 KK X:\Spatial\Hydrology\SurfaceandGround\Aquifers\flowsystems.apr

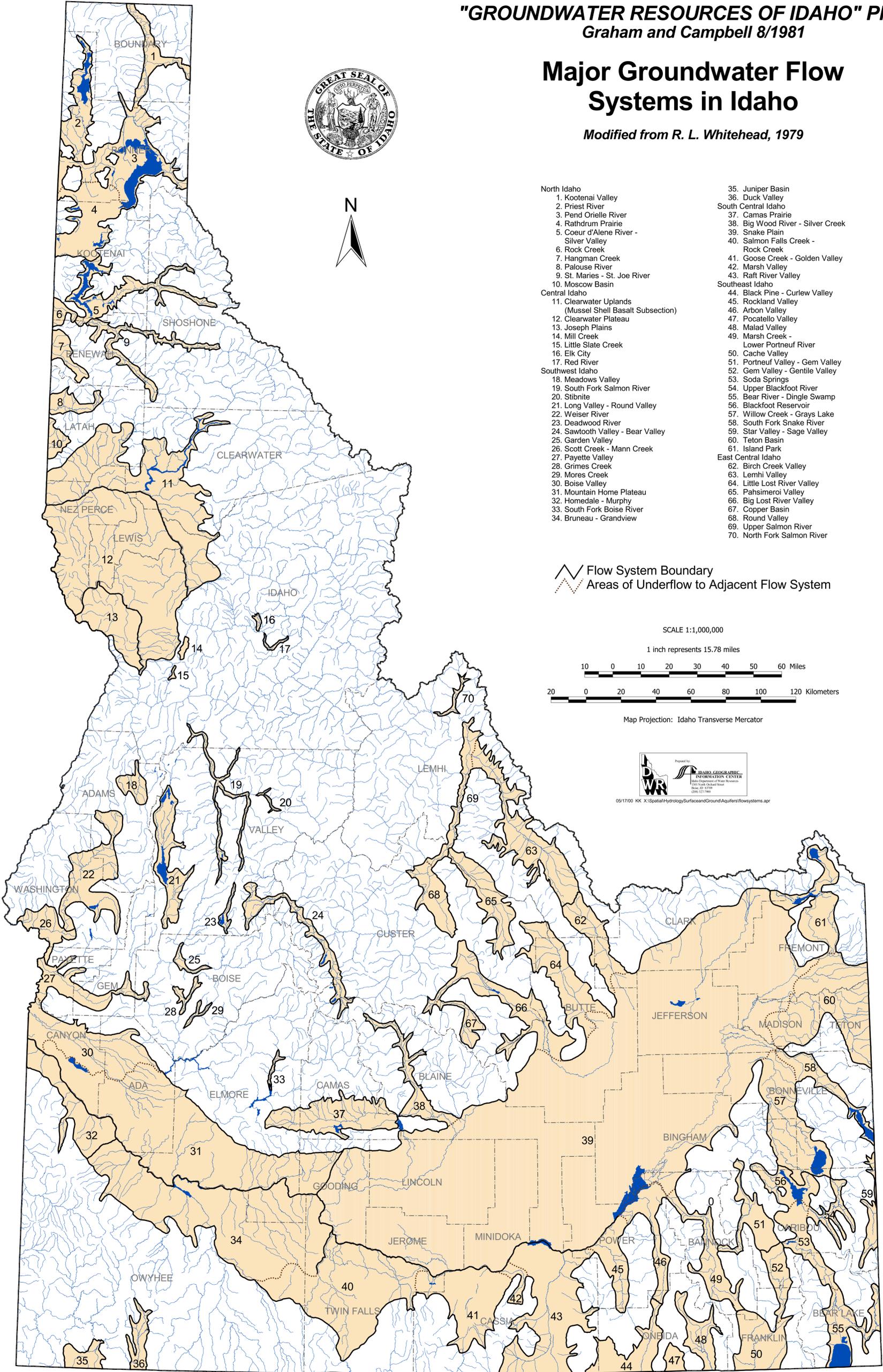


Figure 10. Major Ground Water Flow Systems in Idaho.

General Lithologies of the Major Ground Water Flow Systems in Idaho

Modified from R. L. Whitehead, 1979

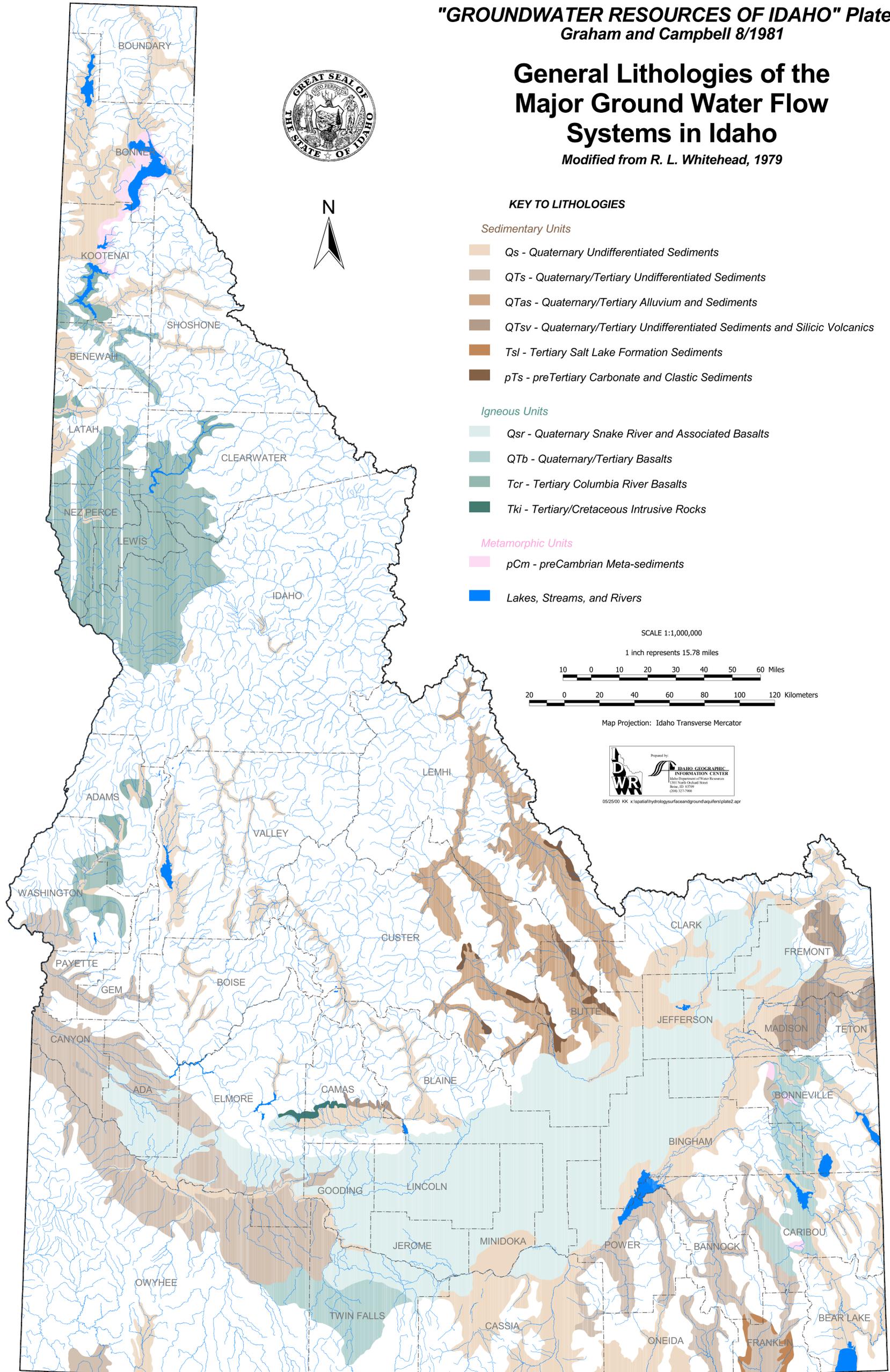


Figure 11. General Lithologies of the Major Ground Water Flow Systems in Idaho.

11. DRINKING WATER SOURCE PROTECTION

Protection of drinking water—most of which comes from ground water in Idaho—is done through voluntary action. Communities can develop programs that will help prevent drinking water supplies from becoming contaminated. The program may involve creating a drinking water protection plan and implementing regulatory and/or non-regulatory management practices.

Most human activities at the land surface cause some change in the quality of water in the aquifer beneath them. Where ground water is the primary source of drinking water, a community should protect the physical area around the wellhead and the areas above which the well pumps water for drinking.

The maps in this section (Figure 13 through Figure 22) show public water systems and their areas of influence (known as delineations), which are the portions of the watershed or subsurface area that contribute water to wells. The maps also show time-of-travel zones, which indicate the number of years needed for a particle of water to reach a particular well. The maps are provided as a reference for making land use decisions that could potentially affect ground water/drinking water quality in Owyhee County.

Preventing ground water contamination will require thoughtful management and cooperation on the part of citizens and the various levels of government. In many cases, land use planning is the best instrument available for protecting aquifers still containing good quality water. If potential contamination sources are prevented from locating over critical recharge areas, the risk of contamination can be greatly reduced.

DEQ sees great potential to protect public health and preserve and protect Idaho's drinking water resources by providing community leaders a county-wide mapping of drinking water capture zones/delineations that can be considered as land use decisions are being made.

An interactive map-based source of information on ground water quality areas where nitrate concentrations potentially degrade drinking water quality can be found at <http://global.deq.idaho.gov/npa/>. The main criteria for designation of an area as a nitrate priority area is that 25% of the ground water samples collected in a hydrogeologically similar area contain nitrate levels greater than or equal to 5 milligrams per liter (mg/L), which is one-half the federal drinking water standard for nitrate of 10 mg/L.

The maps in Figure 13 through Figure 16 show delineations of public water system sources in relation to the Marsing, Homedale, Grand View, and Bruneau Nitrate Priority Areas. Nitrate priority area boundaries are shown on each map, along with public water systems and their time-of-travel zones.

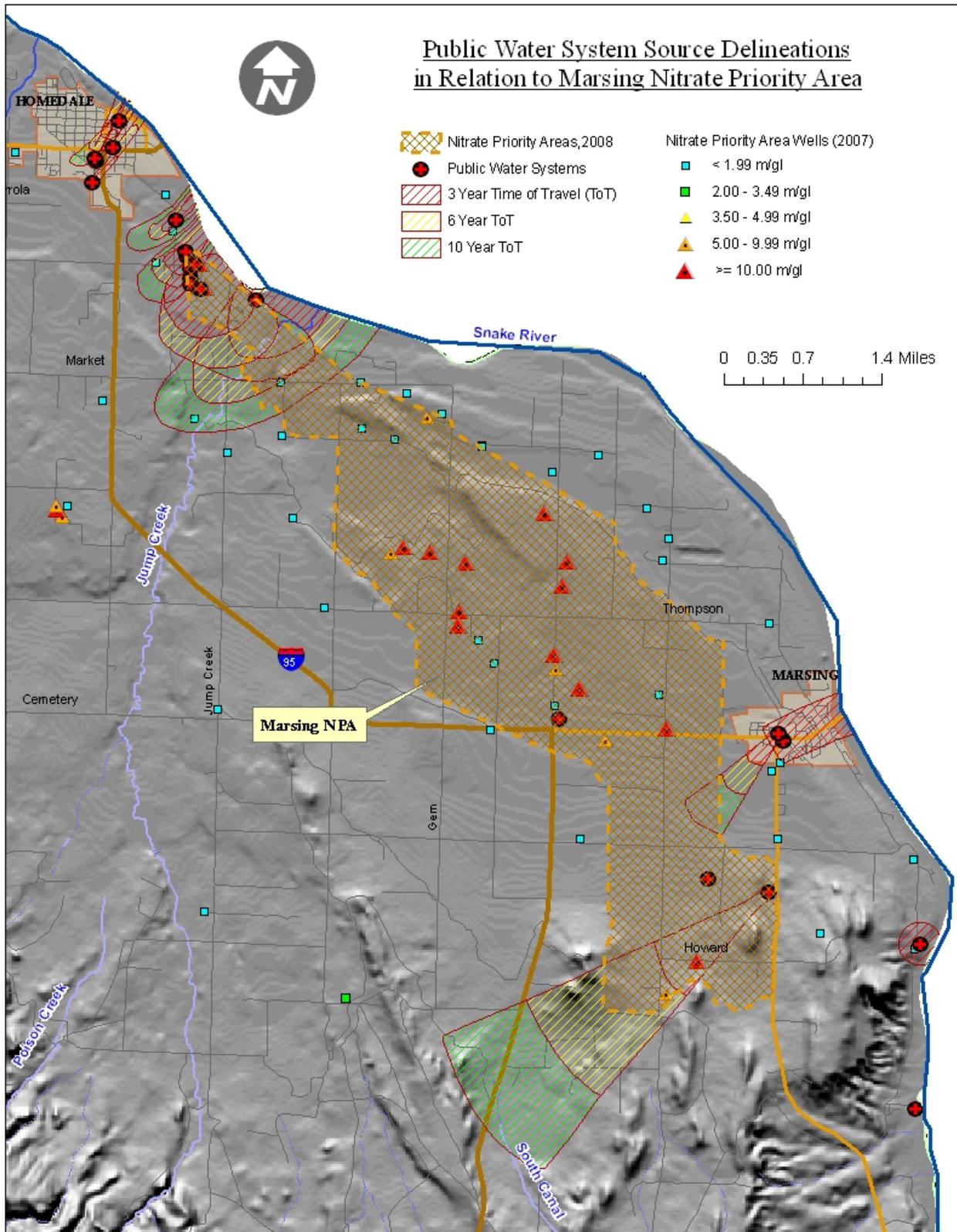


Figure 13. Delineations of Public Water System Sources in Relation to the Marsing Nitrate Priority Area.

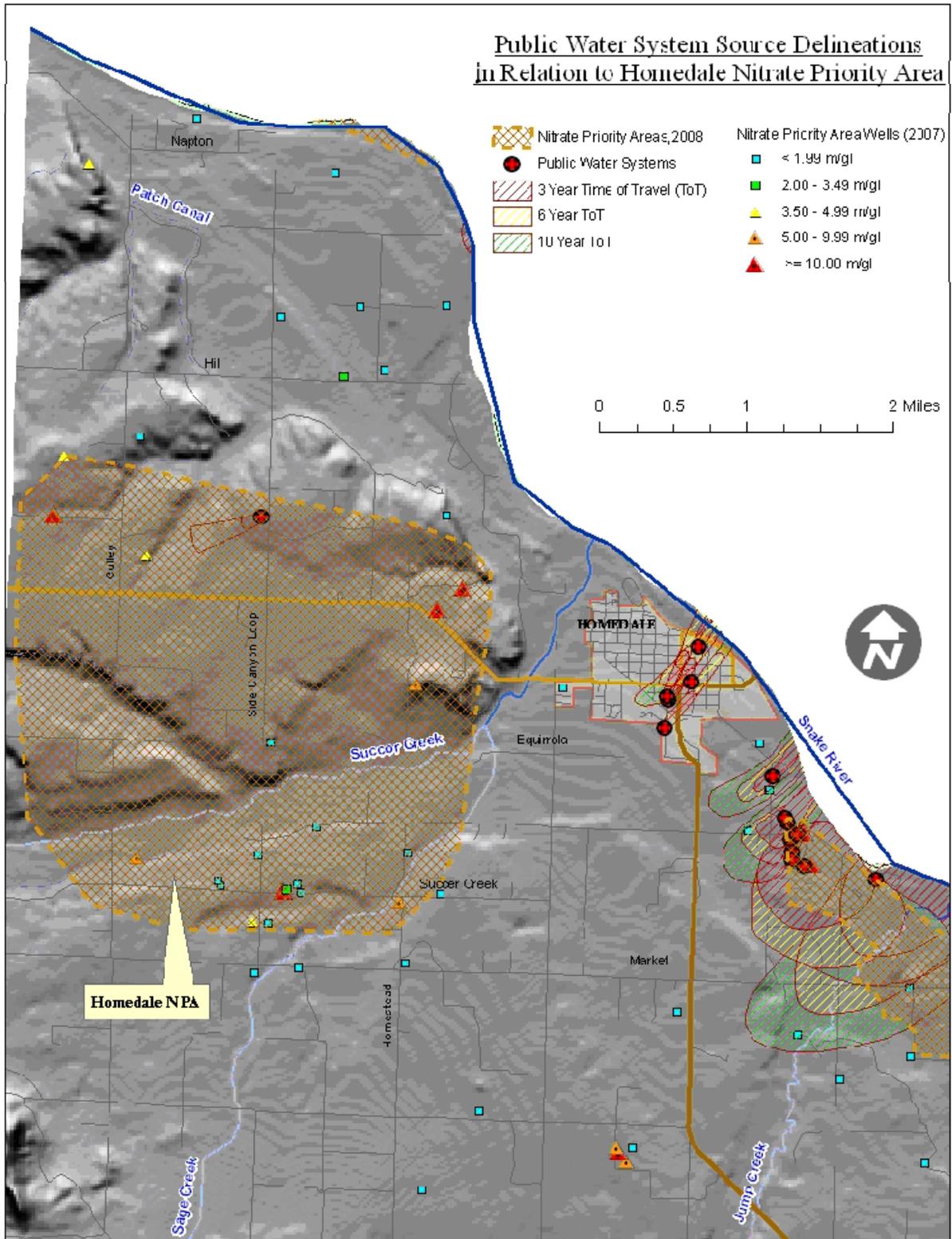


Figure 14. Delineations of Public Water System Sources in Relation to the Homedale Nitrate Priority Area.

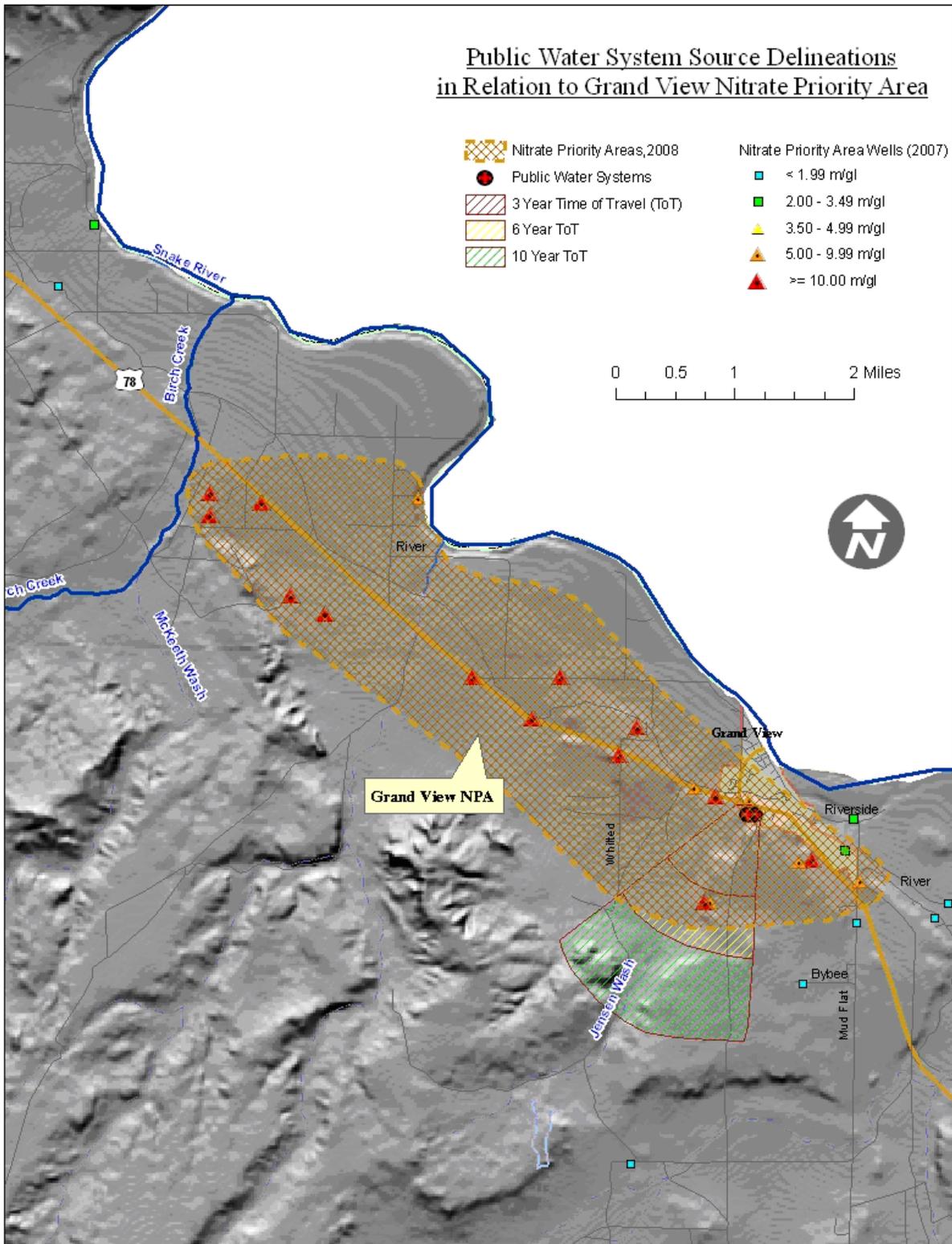


Figure 15. Delineations of Public Water System Sources in Relation to the Grand View Nitrate Priority Area.

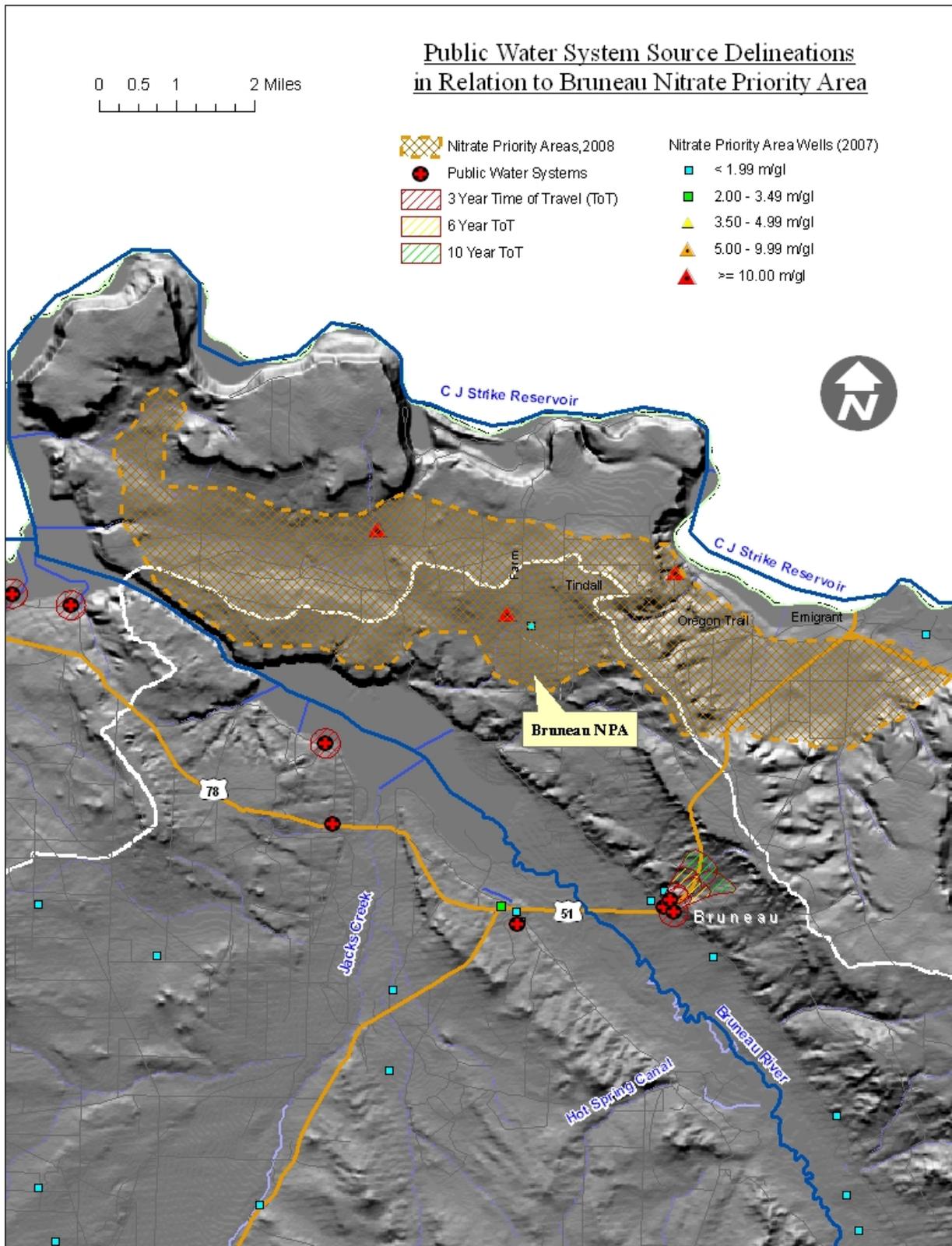
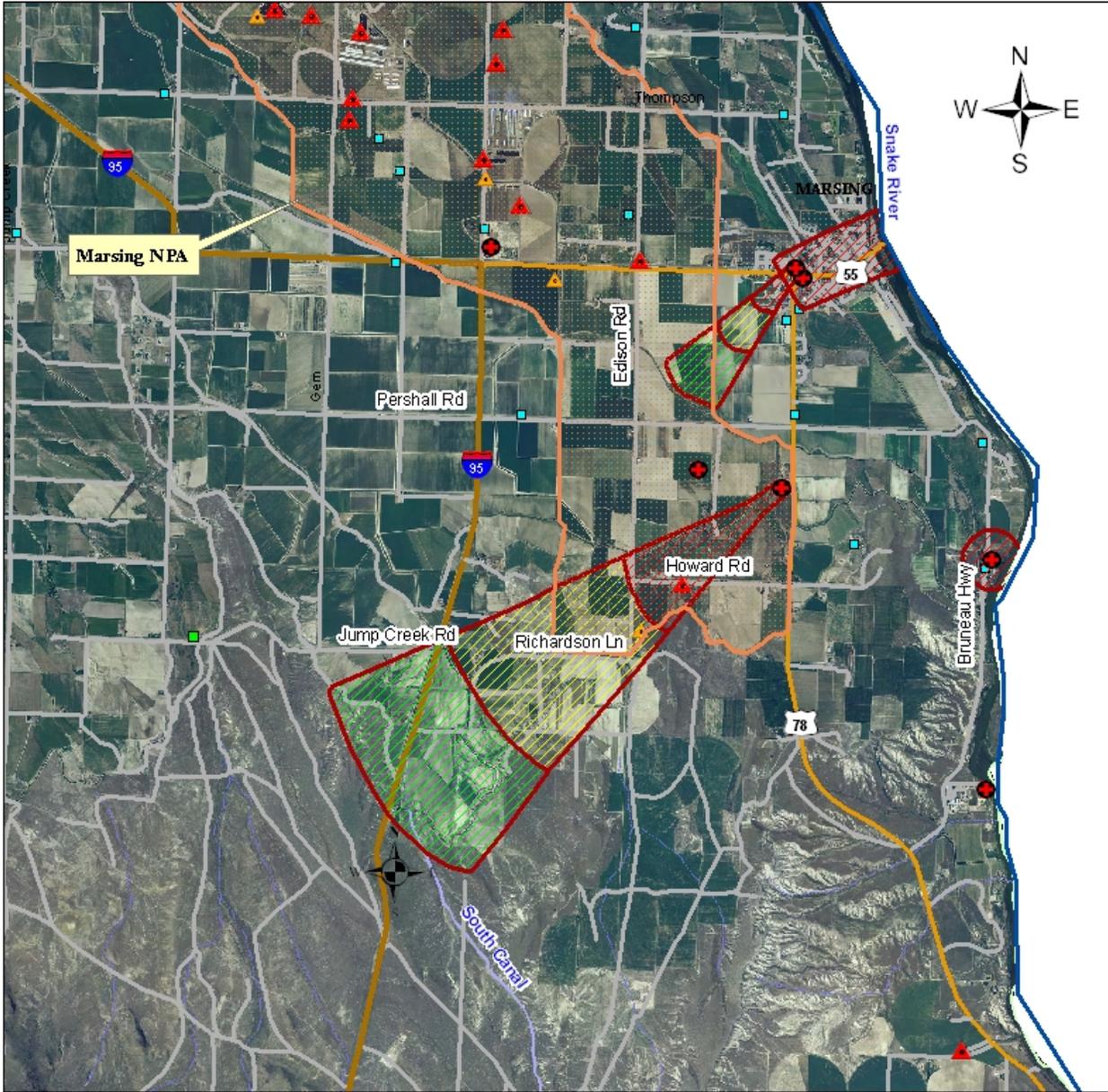


Figure 16. Delineations of Public Water System Sources in Relation to the Bruneau Nitrate Priority Area.

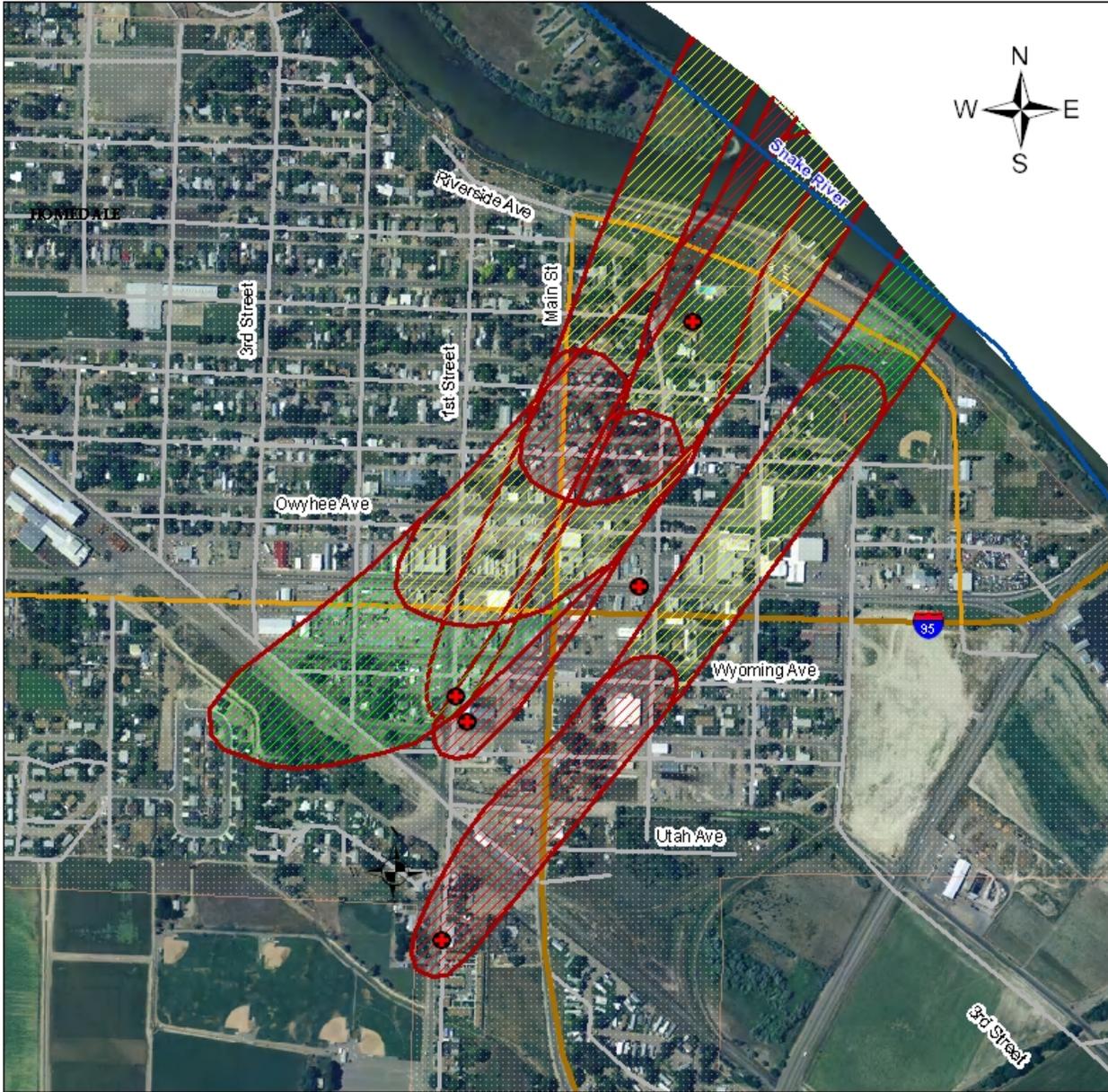
The maps in Figure 17 through Figure 22 show delineations and time-of-travel zones for public water system sources in Marsing, Homedale, Grand View, and Bruneau. The maps cover smaller areas and show a greater level of detail than Figure 13 through Figure 16.



Marsing Area
Public Water System Source Delineations



Figure 17. Delineations of Public Water System Sources in Marsing Area.



**Homedale Area North
Public Water System Source Delineations**

0 0.05 0.1 0.2 Miles

- | | | |
|------------------------|----------------------|--|
| Homedale City Boundary | Public Water Systems | Nitrate Priority Area Wells (2007) < 1.99 m/gl |
| 10 Year ToT | 6 Year ToT | 2.00 - 3.49 m/gl |
| | | 3.50 - 4.99 m/gl |
| | | 5.00 - 9.99 m/gl |
| | | ≥ 10.00 m/gl |

Figure 18. Delineations of Public Water System Sources in Homedale Area North.

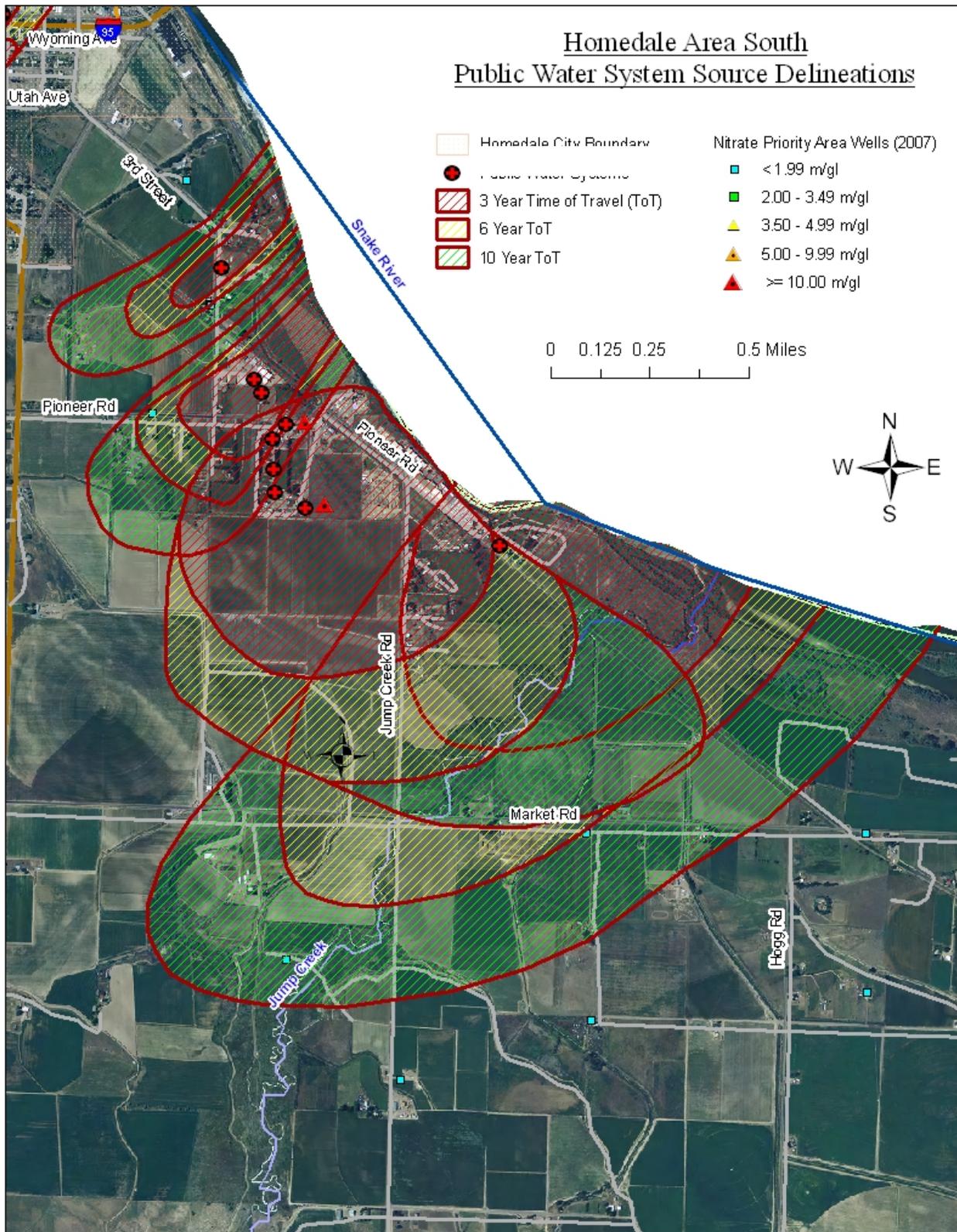
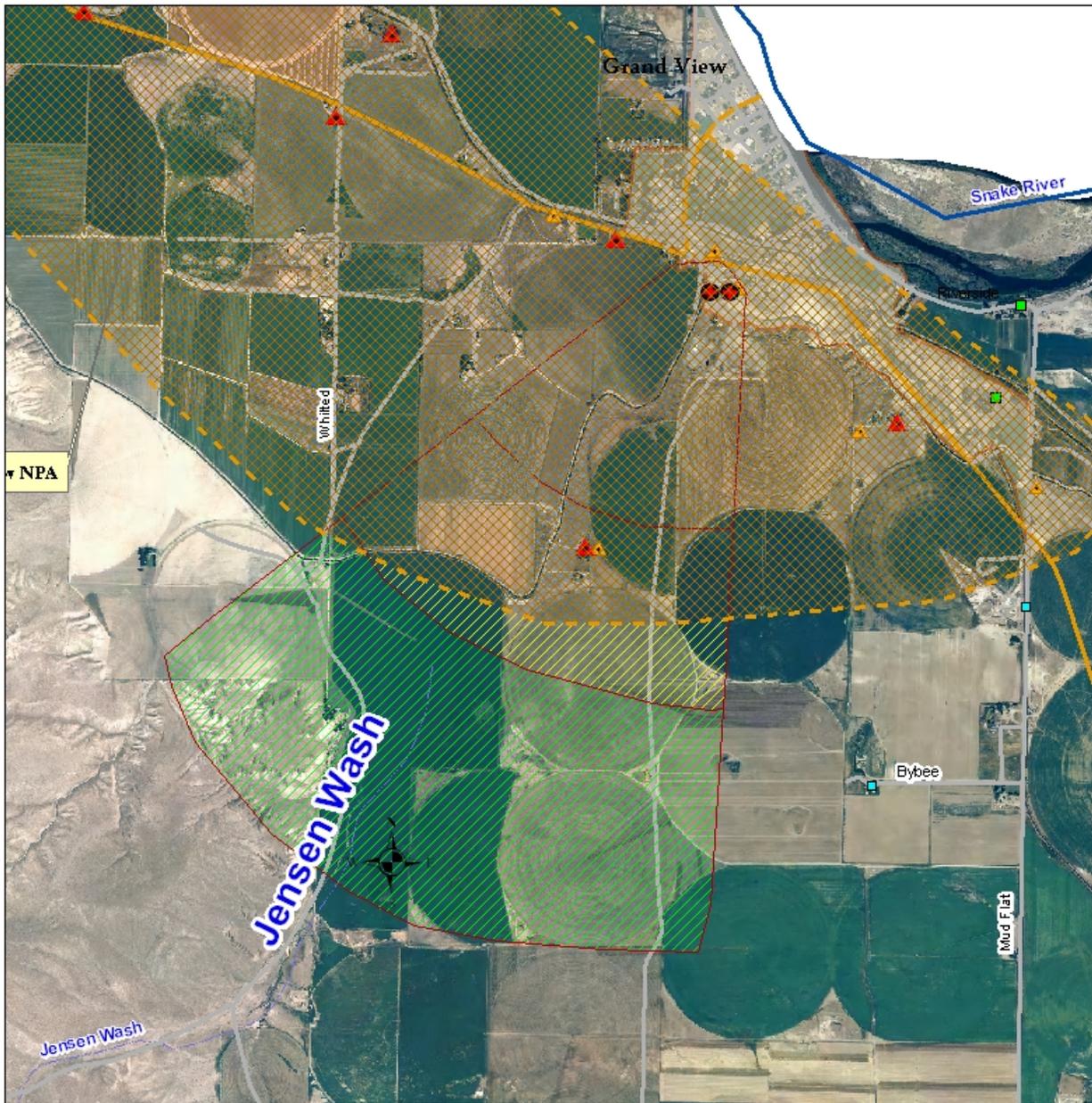


Figure 19. Delineations of Public Water System Sources in Homedale Area South.



**Grand View Area
Public Water System Source Delineations**

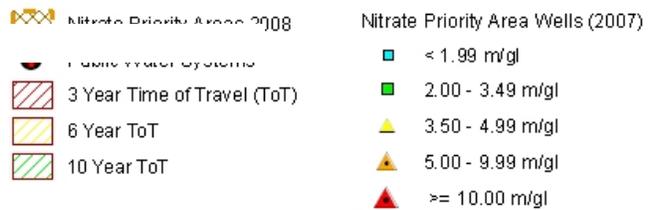
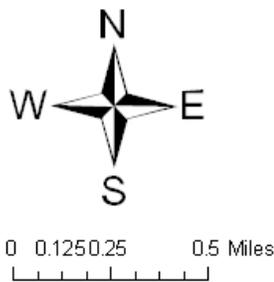
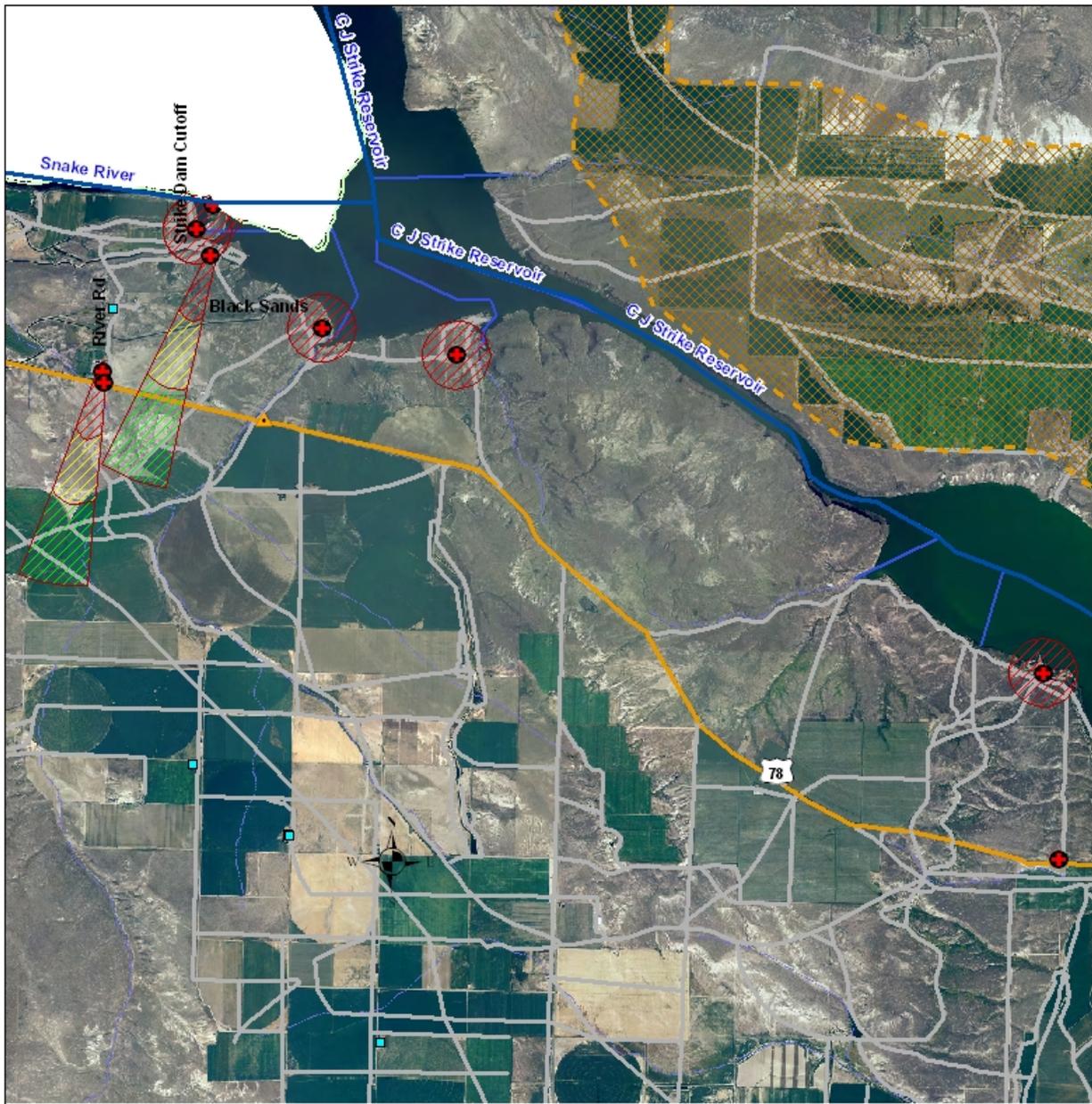
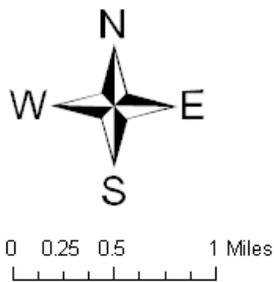


Figure 20. Delineations of Public Water System Sources in Grand View Area.

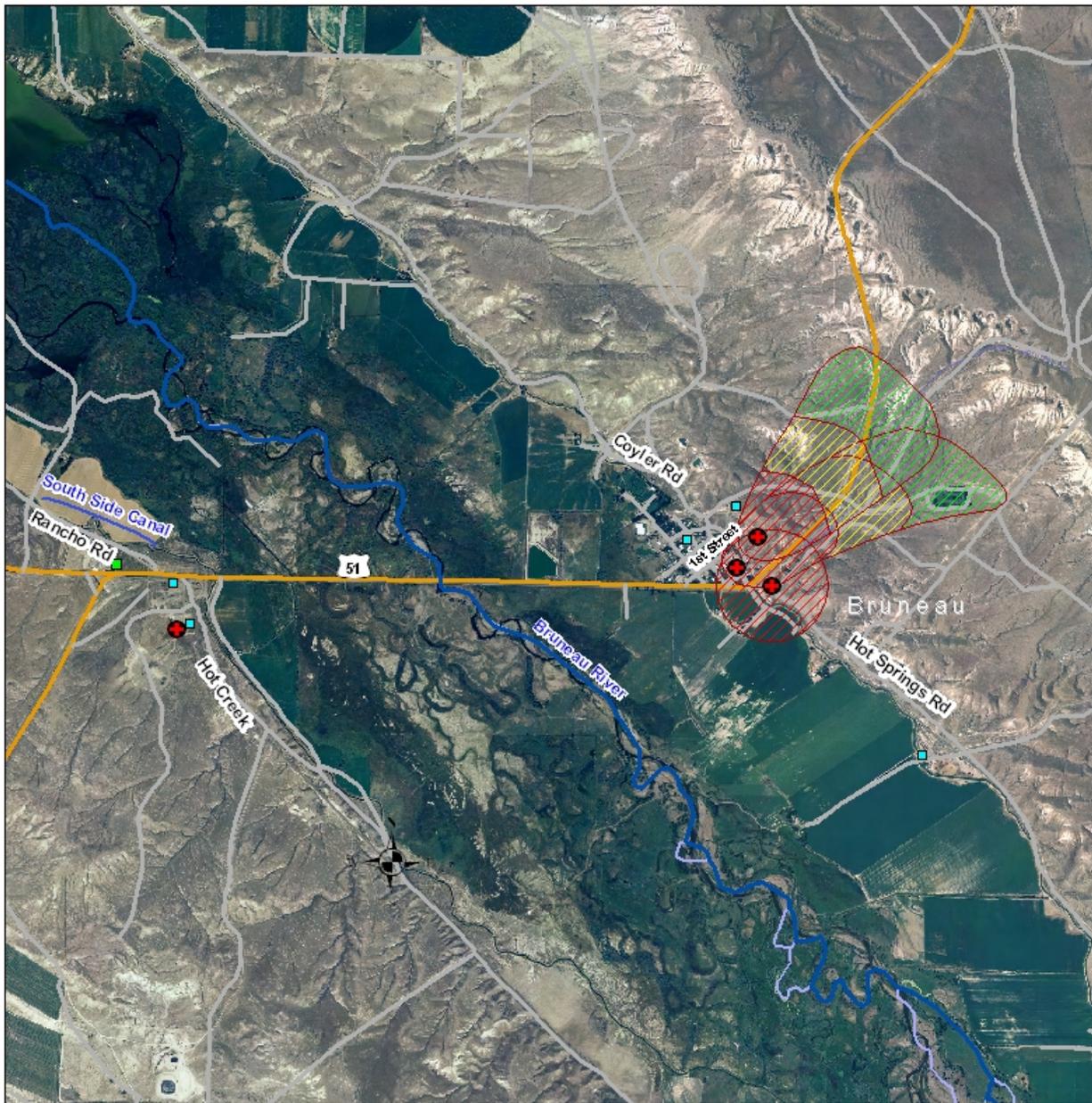


**Bruneau Area Northwest
Public Water System Source Delineations**

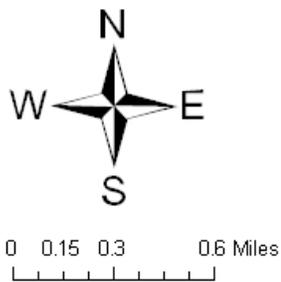


- | | | | |
|--|------------------------------|--|------------------------------------|
| | Nitrate Priority Areas, 2008 | | Nitrate Priority Area Wells (2007) |
| | Public Water Systems | | < 1.99 m/gl |
| | 3 Year Time of Travel (ToT) | | 2.00 - 3.49 m/gl |
| | 6 Year ToT | | 3.50 - 4.99 m/gl |
| | 10 Year ToT | | 5.00 - 9.99 m/gl |
| | | | ≥ 10.00 m/gl |

Figure 21. Delineations of Public Water System Sources in Bruneau Area Northwest.



Bruneau Area
Public Water System Source Delineations



- | | |
|--|--|
|  Nitrate Priority Areas, 2008 |  Nitrate Priority Area Wells (2007) |
|  Public Water Systems |  < 1.99 m/gl |
|  3 Year Time of Travel (ToT) |  2.00 - 3.49 m/gl |
|  6 Year ToT |  3.50 - 4.99 m/gl |
|  10 Year ToT |  5.00 - 9.99 m/gl |
| |  >= 10.00 m/gl |

Figure 22. Delineations of Public Water System Sources in Bruneau Area.

12. SURFACE WATER TOTAL MAXIMUM DAILY LOADS

This section is provided as a resource for making land use decisions and to support requests for funds regarding projects related to ground water and surface water quality.

Ground water and surface water are interrelated. (See Figure 23.) Ground water is surface water (lakes, rivers, streams, or overland flow) that has percolated into and through the ground to an aquifer. Ground water may move back into surface water bodies through seeps, springs, or base flow into a river or lake, depending on the geology of an area.

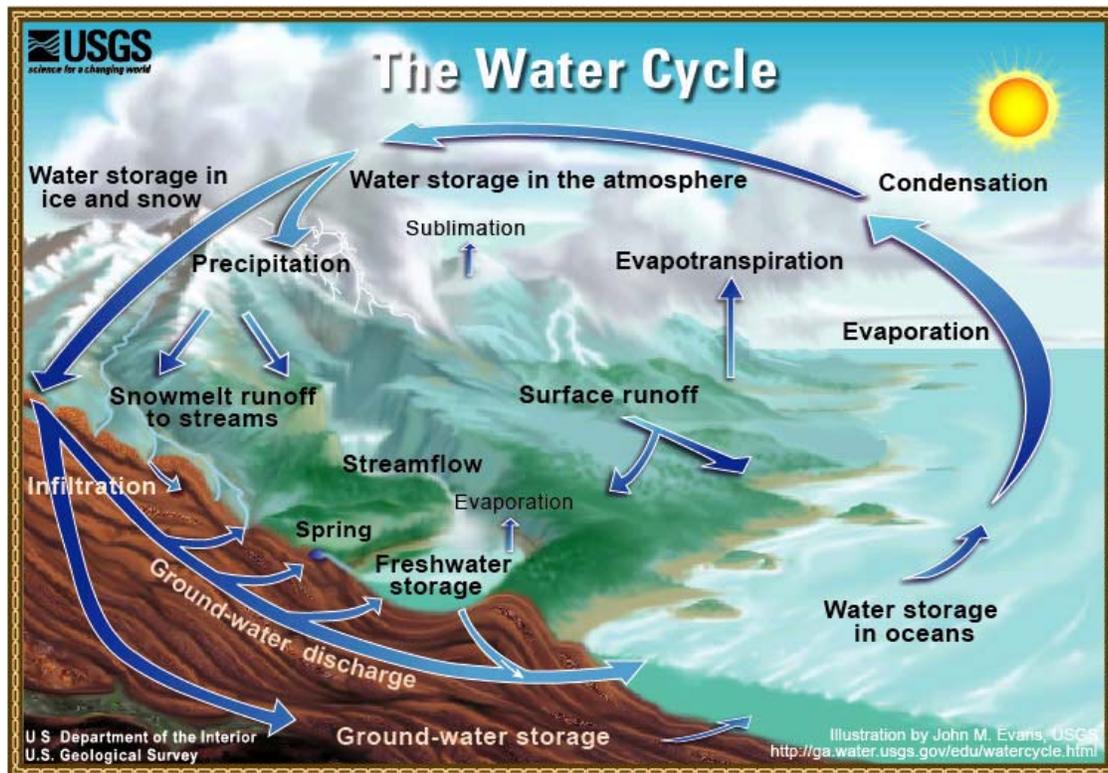


Figure 23. Interaction Between Ground Water and Surface Water.

Ground water and surface water protection efforts control nonpoint sources of pollution with many of the same management practices. (A nonpoint source of pollution is a source of contamination with no visible or obvious point from which the contamination originates.)

Idaho must develop a water quality plan, called a total maximum daily load (TMDL), for water bodies not found to be meeting water quality standards. TMDLs are pollution budgets written for point and nonpoint sources of pollution in surface water bodies. Point source effects can be directly traced to a particular source or facility.

Nonpoint source pollution, on the other hand, is more difficult to identify. Nonpoint source pollution is usually the result of general and regional land-use activities. Thus, modifying land-use activities can reduce or control nonpoint source pollution. Among other things, nonpoint source pollution includes the cumulative effects of fertilizers and pesticides that farmers and homeowners

may use; the oil poured down storm drains; and various land use practices, including urban development, agriculture, and forestry.

Due to its rural nature, most water pollution in Idaho is nonpoint source pollution.

Figure 24 is a map of the watersheds in Owyhee County. Each watershed shown in the map is affected by a TMDL. Descriptions of the following Owyhee County TMDLs, printed from DEQ's Web site, appear after Figure 24:

- King Hill-C.J. Strike Reservoir
- Bruneau River
- Mid Snake River/Succor Creek
- Snake River-Hells Canyon
- Upper Owyhee
- South Fork Owyhee
- North and Middle Fork Owyhee
- Jordan Creek

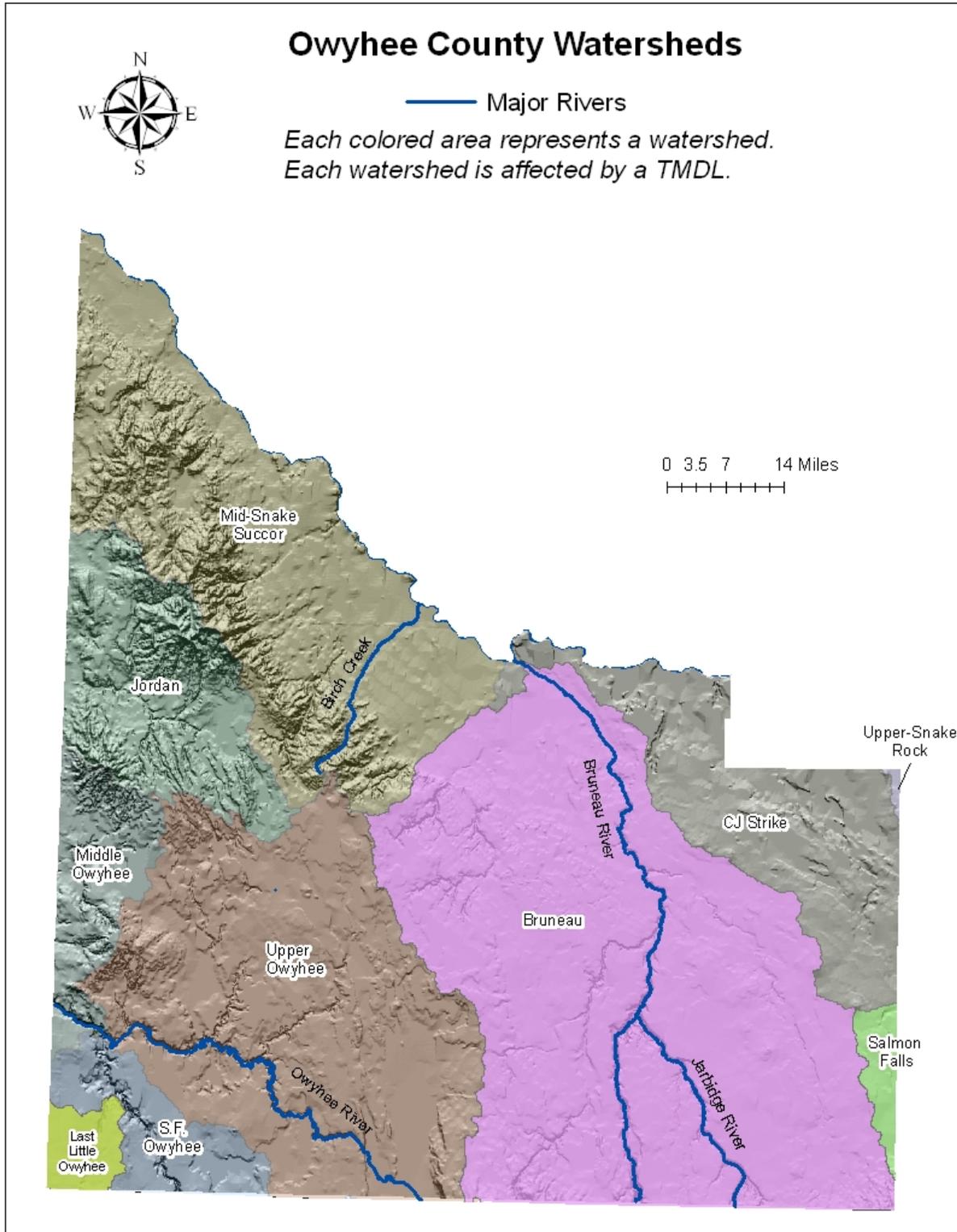


Figure 24. Owyhee County Watersheds. (To see the complete documents for each of the TMDLs listed on this map, visit the DEQ Web site at www.deq.idaho.gov/water/data_reports/surface_water/tmdls/sba_tmdl_master_list.cfm#region.)

King Hill-C.J. Strike Reservoir TMDL Information

Idaho Department of
Environmental Quality



- Public Info & Input
- Air
- Water
- Waste
- INL Oversight
- Maps & Data
- Rules & Regs

Return to

[List of Subbasin Assessments, TMDLs, and Implementation Plans in Idaho](#)

See Also

[Overview of the TMDL Process](#)

King Hill-C.J. Strike Reservoir TMDL Contact

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DEQ Boise Regional Office
1445 North Orchard
Boise, ID 83706
ph: (208) 373-0557
fx: (208) 373-0287
craig.shepard@deq.idaho.gov

Surface Water: King Hill - C.J. Strike Reservoir Subbasin Assessment and Total Maximum Daily Loads

> [Link to document](#)
> [Link to implementation plans](#)

The Subbasin at a Glance

Hydrologic Unit Code	17050101
Size	2,132.79 square miles
§303(d) Listed Stream Segments	Snake River, C.J. Strike Reservoir, Alkali Creek, Bennett Creek, Browns Creek, Cold Springs Creek, Deadman Creek, Little Canyon Creek, Ryegrass Creek, Sailor Creek
Beneficial Uses	Cold water, primary contact recreation, domestic water supply, special resource water
Pollutants of Concern	Sediment, nutrients, pesticides, flow alteration
Major Land Uses	Rangeland, agriculture
Date Approved by U.S. EPA	June 2006

Background

The federal Clean Water Act requires that states and tribes restore and maintain the chemical, physical, and biological integrity of the nation's waters. States and tribes must adopt water quality standards necessary to protect fish, shellfish, and wildlife while providing for recreation in and on the waters whenever possible.

Section 303(d) of the Clean Water Act establishes requirements for states and tribes to identify and prioritize water bodies that are water quality limited (i.e., water bodies that do not meet water quality standards). States and tribes must periodically publish a priority list of impaired waters, currently every two years. For waters identified on this list, states and tribes must develop water quality improvement plans known as total maximum daily loads (TMDLs) that establish allowable pollutant loads set at levels to achieve water quality standards.

Overview

The King Hill-C.J. Strike Reservoir Subbasin lies mainly in the plains and low hills of the western Snake River plain in southern Idaho. The Snake River is the primary drainage in the subbasin, but due to the arid climate, most tributaries to the river are intermittent or dry. C.J. Strike Reservoir provides hydroelectric power to the people of southern Idaho.

Nutrient loading to the Snake River comes primarily from the upstream segment of the Snake River. Other smaller sources include several tributaries and the Glenns Ferry Wastewater Treatment Plant. The primary nutrient impairing beneficial uses in the river is phosphorus. A total phosphorus target was established for the Snake River between King Hill and C.J. Strike Reservoir. A nutrient TMDL was developed based on meeting this target.

As with nutrients, sediment loading to the Snake River comes primarily from the upstream segment of the Snake River. However, the Snake River between King Hill and C.J. Strike Reservoir does not currently exceed surrogate water column targets. Even with the lack of exceedances, a sediment TMDL was established for the Snake River between King Hill and C.J. Strike Reservoir. The intent of the TMDL is to help address a sediment bedload problem in the river, which is contributing to excessive aquatic plant growth.

In-stream channel erosion is the primary source of sediment loading in Little Canyon Creek and Cold Springs Creek. Land management practices contribute to unstable banks in many areas, and the resulting instability has led to sediment delivery to the stream channel. TMDLs were developed based on achieving 80% bank stability.

The Snake River arm of C.J. Strike Reservoir currently experiences dissolved oxygen sags in the metalimnion—the middle layer of a thermally stratified water body. These sags occur due to excess total phosphorus in the water column and increasing sediment oxygen demand. Both nutrient and dissolved oxygen TMDLs were established for the reservoir.

In most water years, many of the §303(d) listed stream segments in the King Hill-C.J. Strike Reservoir Subbasin have extended periods of zero-flow following spring run-off. Pollutant standards only apply when flows exceed 1.0 cubic foot per second. Therefore, TMDLs were not be prepared for the intermittent segments of Bennett, Ryegrass, Cold Springs, Alkali, Little Canyon, Browns, Sailor, and Deadman Creeks.

Streams and Pollutants for Which TMDLs Were Developed

Snake River	Sediment, nutrients
C.J. Strike Reservoir	Nutrients, dissolved oxygen
Cold Springs Creek	Sediment
Little Canyon Creek	Sediment

Subbasin Assessment and TMDLs

View [entire document](#) (pdf 5.1 mb, 352 pages)

Because of the large size of this pdf document, we also have separated the document into smaller parts for quicker downloading as follows:

Prefatory	Acknowledgements; Table of Contents;	406 kb, 22
Materials:	Lists of Tables, Figures, and Appendices; Executive Summary	pages
Chapter 1:	Subbasin Assessment - Watershed Characterization	558 kb, 34 pages
Chapter 2:	Subbasin Assessment - Water Quality	2.2 mb, 118

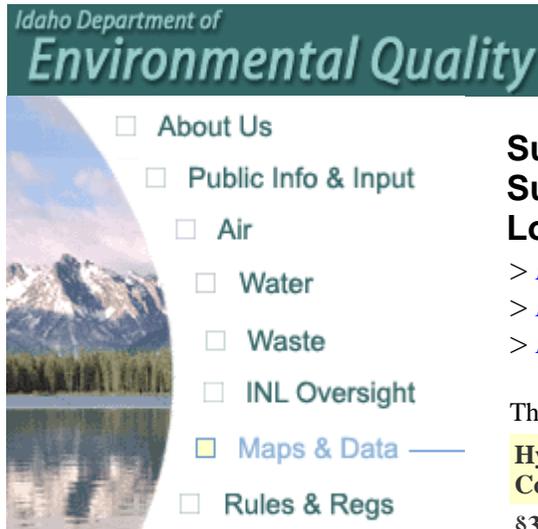
	<i>Concerns and Status (including figures)</i>	pages
	<i>Subbasin Assessment - Water Quality Concerns and Status (text only)</i>	587 kb, 97 pages
Chapter 3:	<i>Subbasin Assessment - Pollutant Source Inventory</i>	28 kb, 4 pages
Chapter 4:	<i>Subbasin Assessment - Summary of Past and Present Pollution Control Efforts</i>	29 kb, 4 pages
Chapter 5:	<i>Total Maximum Daily Loads</i>	225 kb, 24 pages
Supporting Documentation:	<i>References Cited, Glossary</i>	82 kb, 26 pages
Appendices:	<i>A through O</i>	2.0 mb, 120 pages
Addendum:	<i>Additional Information</i>	28 kb, 2 pages

Implementation Plans

<i>Implementation Plan for Agriculture: November 2007</i>	940 kb, 58 pages
<i>Implementation Plan for Dissolved Oxygen: November 2007, Revised December 2008</i>	1.0 mb, 76 pages

For the most current information on the King Hill – C.J. Strike Reservoir TMDL, see www.deq.idaho.gov/water/data_reports/surface_water/tmdls/snake_river_kinghill_cjstrike/snake_river_kinghill_cjstrike.cfm.

Bruneau River TMDL Information



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See Also

[Overview of the TMDL Process](#)

Bruneau River Subbasin TMDL and Jacks Creek Aquaculture Addendum TMDL Contact

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Surface Water: Bruneau River Subbasin Assessment and Total Maximum Daily Loads

> [Link to document](#)

> [Link to agriculture implementation plans](#)

> [Link to Jacks Creek Aquaculture Addendum TMDL](#)

The Subbasin at a Glance

Hydrologic Unit Code	17050102
§303(d) Listed Stream Segments	Jacks Creek, Sugar Creek, Wickahoney Creek, Cougar Creek, Poison Creek, Three Creek, Clover Creek, Hot Creek, Bruneau River, Sugar Valley Wash
Beneficial Uses	Cold water biota, warm water biota, salmonid spawning, primary and secondary contact recreation
Pollutants of Concern	Nutrients, dissolved oxygen, bacteria, sediment, flow alteration, pesticides, temperature
Major Land Uses	Rangeland, irrigated agriculture
Date Approved by U.S. EPA	March 2001

Background

The federal Clean Water Act requires that states and tribes restore and maintain the chemical, physical, and biological integrity of the nation's waters. States and tribes must adopt water quality standards necessary to protect fish, shellfish, and wildlife while providing for recreation in and on the waters whenever possible.

Section 303(d) of the Clean Water Act establishes requirements for states and tribes to identify and prioritize water bodies that are water quality limited (i.e., water bodies that do not meet water quality standards). States and tribes must periodically publish a priority list of impaired waters, currently every two years. For waters identified on this list, states and tribes must develop water quality improvement plans known as total maximum daily loads (TMDLs) that establish allowable pollutant loads set at levels to achieve water quality standards.

Overview

This document describes the nine water bodies and 19 pollutants listed on the 1998 §303(d) list. Two additional pollutant-water body combinations are also assessed. Sediment is the most common listed pollutant in the subbasin; it was a listed pollutant on all 1998 §303(d) listed water bodies

within the subbasin.

In general, the water quality of the Bruneau River is very good. Limited impacts have occurred in the upstream watersheds. Concentrations of suspended materials are very low throughout the subbasin. However, on a seasonal basis, the Bruneau River and other surface water bodies exceed state water quality standards for excessive nutrients, temperature, and/or other pollutants. The temperature exceedances may be due to the influence of the thermal spring waters. These waters form the principle habitat for the endangered Bruneau Hot Springsnail.

Nutrients are a listed pollutant in the Bruneau River and Jacks Creek segments of the Bruneau River Subbasin. In these reaches it was determined that total phosphorus can be a limiting nutrient and that all nutrients may be in excess of recommendations.

The other listed streams and pollutants in the subbasin, in general, were well below any standard or guideline established for the protection of beneficial uses or were dry for all, or a majority of, the year. It was determined that three of the listed water bodies should not have been considered water bodies which would have supported beneficial uses and were therefore listed in error.

Bruneau River, Jacks Creek, Wickahoney Creek, and Hot Creek are listed for flow alteration. The U.S. Environmental Protection Agency does not believe that flow alteration is a pollutant as defined by the Clean Water Act. Since TMDLs are not required for water bodies impaired by pollution but not pollutants, TMDLs were not developed for flow alteration.

Temperature is a minor problem in some segments of the Bruneau River Subbasin. However, this is generally considered by the residents of the Bruneau area to be a natural problem. Additionally, in other areas of the state bioassessment data conflict with temperature information and water quality standards. This is likely the result of the state's water quality standards being derived from an outdated understanding of cold water biota's temperature requirements. DEQ is participating in a regional review of temperature criteria. Following the conclusion of the temperature review, temperature exceedances in the Bruneau River Subbasin will be reassessed and, if needed, a temperature TMDL will be completed.

Streams and Pollutants for Which TMDLs Were Developed

Bruneau River	Nutrients
Jacks Creek	Nutrients, dissolved oxygen, bacteria, sediment
Three Creek	Sediment
Clover Creek	Bacteria
Sugar Valley Wash	Nutrients, dissolved oxygen, bacteria, sediment

Subbasin Assessment and TMDLs

View [entire document](#) (pdf 6.7 mb, 142 pages)

Because of the large size of this pdf document, we have also divided it into sections for quicker download.

Table of Contents, Executive Summary, Watershed Characterization (pages 10-12)	1.1 mb, 24 pages
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Watershed Characterization (pages (13-18))	1.5 mb, 6 pages
Watershed Characterization (pages 19-23)	1.5 mb, 5 pages
Watershed Characterization (pages (24-30))	1.0 mb, 7 pages
Water Quality Concerns and Status, Pollution Source Inventory, Summary of Past and Present Pollution Control Efforts, Total Maximum Daily Loads, References, Appendices	1.7 mb, 100 pages

Agriculture Implementation Plan

Bruneau River Watershed Agricultural Implementation Plan, June 2002	711 kb, 29 pages
Jacks Creek Watershed Agricultural Implementation Plan, June 2002	671 kb, 23 pages

Jacks Creek Aquaculture Addendum TMDL

Date approved by U.S. EPA: November 2007.

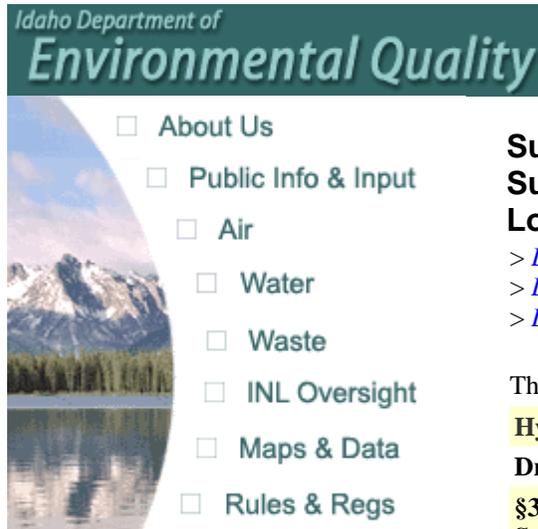
> View [approval letter](#).

> View [entire document](#) (pdf 2.5 mb, 58 pages)

For the most current information on the Bruneau River TMDL, see

www.deq.idaho.gov/water/data_reports/surface_water/tmdls/bruneau_river/bruneau_river.cfm.

Mid Snake River/Succor Creek TMDL Information



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See Also

[Overview of the TMDL Process](#)

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Surface Water: Mid Snake River/Succor Creek Subbasin Assessment and Total Maximum Daily Loads

- > [Link to document](#)
- > [Link to Implementation Plan](#)
- > [Link to Revised Addendum](#)

The Subbasin at a Glance

Hydrologic Unit Code	17050103
Drainage Area	2,002 square miles
§303(d) Listed Stream Segments	Snake River (3 segments), Birch Creek, Brown Creek, Castle Creek, Corder Creek, Cottonwood Creek, Hardtrigger Creek, Jump Creek, McBride Creek, North Fork Castle Creek, Pickett Creek (2 segments), Poison Creek, Rabbit Creek, Reynolds Creek, Sinker Creek, South Fork Castle Creek, Squaw Creek, Squaw Creek Unnamed Tributary, Succor Creek (2 segments)
Beneficial Uses	Cold water aquatic life, salmonid spawning, primary contact recreation, drinking water supply, special resource water
Pollutants of Concern	Bacteria, dissolved oxygen, flow alteration, nutrients, pH, sediment, temperature
Major Land Uses	Rangeland, irrigated agriculture
Date Approved by U.S. EPA	January 2004
Revised Addendum Approved by U.S.EPA	December 2007 > View Approval Letter

Background

The federal Clean Water Act requires that states and tribes restore and maintain the chemical, physical, and biological integrity of the nation's waters. States and tribes must adopt water quality standards necessary to protect fish, shellfish, and wildlife while providing for recreation in and on the waters whenever possible.

Section 303(d) of the Clean Water Act establishes requirements for states and tribes to identify and prioritize water bodies that are water quality limited (i.e., water bodies that do not meet water quality standards). States and tribes must periodically publish a priority list of impaired

waters, currently every two years. For waters identified on this list, states and tribes must develop water quality improvement plans known as total maximum daily loads (TMDLs) that establish allowable pollutant loads set at levels to achieve water quality standards.

Overview

This document addresses the water bodies in the Mid Snake River/Succor Creek Subbasin that have been placed on the §303(d) list of impaired water bodies. Within the Mid Snake River/Succor Creek Subbasin, 23 segments were identified on the §303(d) list and were assessed to determine if TMDLs were warranted. TMDLs were established for six of these segments.

The Mid Snake River/Succor Creek watershed is an arid watershed characterized by hot summer temperatures. The tributaries to the Snake River are generally low volume streams that have a combination of high ambient temperatures, poor shading, low flow volume, flow alteration, and naturally warm springs, which often leads to exceedances of the temperature standard. Even with maximum potential shade, some of the streams in the watershed cannot meet the cold water temperature standard. These streams were evaluated to determine the best achievable temperature based on the maximum potential shade.

Nutrient loading to the Snake River comes from the upstream segment of the Snake River, drains, tributaries, and point sources. The primary nutrient impairing beneficial uses is phosphorus. A total phosphorus target of 0.07 milligrams per liter has been set for the Mid Snake River, based upon the work done in the draft Snake River-Hells Canyon TMDL.

In-stream channel erosion is the primary source of sediment loading in Castle Creek, Sinker Creek, and Succor Creek. Land management practices contribute to unstable banks and this resultant instability leads to sediment delivery to the stream channel. Eighty-percent bank stability was selected as a surrogate target to achieve 28% depth fines in the creek.

Streams and Pollutants for Which TMDLs Were Developed

Snake River (Swan Falls to Oregon Line)	Nutrients, dissolved oxygen
Castle Creek	Sediment
Jump Creek (Mule Creek to Snake River)	Sediment
Sinker Creek	Sediment, temperature
Succor Creek (Headwaters to Oregon Line)	Sediment, temperature
Succor Creek (Oregon Line to Snake River)	Sediment, bacteria

Subbasin Assessment and TMDLs

View [entire document \(including appendices\)](#) (pdf 6.6 mb, 422 pages)

View [executive summary](#) (pdf 435 kb, 9 pages)

Because of the large size of this pdf document, we also have separated it into smaller sections for quicker downloading as follows:

Prefatory Materials:	<i>Table of Contents (including lists of tables, figures and appendices); Abbreviations, Acronyms, and Symbols; and Executive Summary</i>	509 kb, 26 pages
Section 1:	<i>Subbasin Assessment - Watershed Characterization</i>	2.4 mb, 40 pages
Section 2:	<i>Subbasin Assessment - Water Quality Concerns and Status</i>	1.8 mb, 100 pages
Section 3:	<i>Subbasin Assessment - Pollutant Source Inventory</i>	138 kb, 4 pages
Section 4:	<i>Subbasin Assessment - Summary of Past and Present Pollution Control Efforts</i>	136 kb, 4 pages
Section 5:	<i>Total Maximum Daily Loads</i>	274 kb, 33 pages
Supporting Documents:	<i>References, Glossary, Appendices</i>	2.2 mb, 215 pages

Implementation Plan

View [entire document \(including appendices\)](#) (pdf 2.1 mb, 96 pages)

Because of the large size of this pdf document, we also have separated it into two parts for quicker downloading as follows:

[Part 1](#) (pdf 830 kb, 35 pages)

[Part 2](#) (pdf 1.3 mb, 61 pages)

Revised Addendum: Succor Creek and Castle Creek Temperature TMDLs and South Fork Castle Creek Analysis

The addendum addresses water quality in Succor, Castle, and North and South Fork Castle Creeks:

- South Fork Castle Creek appears on the §303(d) list of impaired water bodies for **bacteria**. However, bacteria levels have been found to be well below the standard, so DEQ is proposing to remove South Fork Castle Creek from the state's §303(d) list for bacteria and a TMDL for bacteria in South Fork Castle Creek was not developed.
- Succor Creek, Castle Creek, and North Fork Castle Creek were placed on the 303(d) list by EPA for *temperature*. Data collected in 2002-2004 on these creeks verify temperature exceedences of the cold water aquatic life and rainbow trout salmonid spawning criteria. As a result, TMDLs to improve temperature by reaching potential natural vegetation conditions have been developed for these water bodies and several of their tributaries.

Streams and Pollutants for Which TMDLs were Developed (Revised Addendum)

Succor Creek & Tributaries	Temperature
Castle Creek, NF Castle Creek & Alder Creek, SF Castle Creek, Juniper Creek, Clover Creek	Temperature

> View [revised addendum \(including appendices\)](#) (pdf 1.9 mb, 77 pages)

For the most current information on the Mid Snake River/Succor Creek TMDL, see www.deq.idaho.gov/water/data_reports/surface_water/tmdls/snake_river_succor_creek/snake_river_succor_creek.cfm.

Snake River – Hells Canyon TMDL Information



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See Also

[Overview of the TMDL Process](#)

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Surface Water: Snake River - Hells Canyon Subbasin Assessment and Total Maximum Daily Loads

- > [Link to document](#)
- > [Link to implementation plans \(section 6 of document\)](#)

The Subbasin at a Glance

Hydrologic Unit Codes	17060101, 17050103, 17050115, 17050201
Size	2,500 square miles
§303(d) Listed Stream Segments^a	Six segments of the Snake River, encompassing river miles 409 to 272.5 and 247 to 188 (Oregon/Idaho border to Boise River inflow, Boise River inflow to Weiser River inflow, Weiser River inflow to Scott Creek inflow, Scott Creek to Brownlee Dam, Oxbow Reservoir, Hells Canyon Dam to Salmon River inflow)
Beneficial Uses^b	Cold water aquatic life, primary contact recreation, domestic water supply, special resource water, salmonid spawning
Pollutants of Concern	Idaho's §303(d) list: Bacteria, dissolved oxygen, nutrients, pH, sediment, mercury, pesticides, temperature Oregon's §303(d) list: Mercury, temperature
Major Land Uses	Nez Perce Tribal use, agriculture, grazing, mining, recreation, urban
Date Approved by U.S.EPA	September 2004

^a The segments listed here are as listed on the Idaho §303(d) list. The Oregon §303(d) list divides the segments differently; however, the same total area (river mile 409 through 188) is covered by both lists. The Oregon §303(d) list includes the Hells Canyon Reservoir segment of the river (river mile 272.5 to 247).

^b The uses listed here are only those as defined in Idaho's rules.

Background

The federal Clean Water Act requires that states and tribes restore and maintain the chemical, physical, and biological integrity of the nation's waters. States and tribes must adopt water quality standards necessary to protect fish, shellfish, and wildlife while providing for recreation in and on the waters whenever possible.

Section 303(d) of the Clean Water Act establishes requirements for states and tribes to identify and prioritize water bodies that are water quality limited (i.e., water bodies that do not meet water quality standards). States and tribes must periodically publish a priority list of impaired waters, currently every two years. For waters identified on this list, states and tribes must develop water quality improvement plans known as total maximum daily loads (TMDLs) that establish allowable pollutant loads set at levels to achieve water quality standards.

The Hells Canyon section of the Snake River serves as the Idaho/Oregon border. Therefore, the Snake River–Hells Canyon TMDL was developed jointly by Idaho DEQ and Oregon DEQ.

Overview

The scope of the this TMDL extends from where the Snake River intersects the Oregon/Idaho border near Adrian, Oregon, to immediately upstream of the inflow of the Salmon River. This includes the Hells Canyon Complex reservoirs: Brownlee, Oxbow, and Hells Canyon. The overall reach has been divided into five segments based on similar hydrology, pollutant delivery, and processing mechanisms; and operational, management, and implementation strategies. The five segments are:

- Upstream Snake River (river mile 409 to 335, 74 miles total)
- Brownlee Reservoir (river mile 335 to 285, 50 miles total)
- Oxbow Reservoir (river mile 285 to 272.5, 12.5 miles total)
- Hells Canyon Reservoir (river mile 272.5 to 247, 25.5 miles total)
- Downstream Snake River (river mile 247 to 188, 59 miles total)

Within these segments, all designated beneficial uses and the following listed pollutants have been addressed by the TMDL: bacteria, nutrients, nuisance algae, dissolved oxygen, pesticides, pH, sediment, temperature, and total dissolved gas. The document recommends that the segment addressed by this TMDL be delisted for bacteria and pH. The mercury TMDL has been postponed to 2006 due to a lack of water column data.

Recognizing the complexity of the Snake River–Hells Canyon system, the TMDL adopts a phased approach to implementation that will identify interim milestones to determine the effectiveness of management measures or other action controls being implemented. It also includes a process for reviewing and revising management approaches.

The TMDL document includes two separate, state-specific implementation plans. Together, these documents represent the water quality management plan for the Snake River–Hells Canyon TMDL.

Streams and Pollutants for Which TMDLs Were Developed

Snake River (river mile 401 - 188)	Nutrients/dissolved oxygen, pesticides, sediment, temperature, total dissolved gas
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Subbasin Assessment, TMDLs, and Implementation Plans

View [document \(excluding appendices\)](#) (pdf 12.0 mb, 710 pages)

View [appendices](#) (pdf 5.1 mb, 370 pages)

View [comment and response matrices](#) (691 kb, 135 pages)

Because of the large size of this pdf document, we also have separated it into smaller sections for quicker downloading as follows:

<i>Prefatory Materials:</i>	
<i>Abstract; Table of Contents; Lists of Tables, Figures, and Photos; Executive Summary</i>	875 kb, 72 pages
<i>Section 1: General Information</i>	
<i>Laws, Enforcement Authorities, Public Involvement, Goals and Objectives, Management, Pollutant Trading</i>	218 kb, 28 pages
<i>Section 2: Subbasin Assessment</i>	
<i>Introduction, Characterization of the Watershed</i>	1.7 mb, 28 pages
<i>Water Quality</i>	459 kb, 38 pages
<i>Overview of Segments within the SR-HC TMDL Reach</i>	313 kb, 4 pages
<i>Upstream Snake River Segment</i>	967 kb, 38 pages
<i>Brownlee Reservoir Segment</i>	1.0 mb, 34 pages
<i>Oxbow Reservoir Segment</i>	1.0 mb, 18 pages
<i>Hells Canyon Reservoir Segment</i>	231 kb, 8 pages
<i>Downstream Snake River Segment</i>	700 kb, 12 pages
<i>Data Gaps, Pollutant Sources, Summary of Past and Present Pollution Control Efforts</i>	196 kb, 22 pages
<i>Section 3: Loading Analyses</i>	
<i>General Information, Mercury, Nutrient, Pesticide, Bacteria and pH, Sediment</i>	1.4 mb, 122 pages
<i>Temperature, Total Dissolved Gas</i>	2.2 mb, 84 pages
<i>Section 4: Load Allocations</i>	
<i>Load Allocations, Reasonable Assurance</i>	475 kb, 44 pages
<i>Section 5: Conclusions</i>	
<i>Conclusions</i>	28 kb, 2 pages
<i>Section 6: General Water Quality Management and Implementation Plans</i>	
<i>Snake River-Hells Canyon, State of Oregon, State of Idaho</i>	806 kb, 108 pages
<i>Section 7: Cited References</i>	
<i>References, Glossary, Acronyms, Other TMDLs in the Region</i>	543 kb, 48 pages

For the most current information on the Snake River – Hells Canyon TMDL, see www.deq.idaho.gov/water/data_reports/surface_water/tmdls/snake_river_hells_canyon/snake_river_hells_canyon.cfm.

Upper Owyhee TMDL Information



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See Also

[Overview of the TMDL Process](#)

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Surface Water: Upper Owyhee Watershed Subbasin Assessment and Total Maximum Daily Loads

- > [Link to document](#)
- > [Link to implementation plan](#)
- > [Link to five year review](#)

The Subbasin at a Glance

Hydrologic Unit Code	17050104
Size	1,384,288 acres (total) 1,012,411 acres (in Idaho)
§303(d) Listed Stream Segments	Deep, Pole, Castle, Battle, Shoo Fly, Red Canyon, and Nickel Creeks; Blue Creek and Juniper Basin Reservoirs
Beneficial Uses Affected	Cold water aquatic life, salmonid spawning, primary and secondary contact recreation
Pollutants of Concern	Sediment, bacteria, flow alteration, temperature
Major Land Uses	Rangeland, riparian, forestry, irrigated agriculture
Date Approved by U.S.EPA	March 2003

Background

The federal Clean Water Act requires that states and tribes restore and maintain the chemical, physical, and biological integrity of the nation's waters. States and tribes must adopt water quality standards necessary to protect fish, shellfish, and wildlife while providing for recreation in and on the waters whenever possible.

Section 303(d) of the Clean Water Act establishes requirements for states and tribes to identify and prioritize water bodies that are water quality limited (i.e., water bodies that do not meet water quality standards). States and tribes must periodically publish a priority list of impaired waters, currently every two years. For waters identified on this list, states and tribes must develop water quality improvement plans known as total maximum daily loads (TMDLs) that establish allowable pollutant loads set at levels to achieve water quality standards.

Overview

The Upper Owyhee Subbasin encompasses a large area in southwest Idaho. The headwaters for the Owyhee River (East Fork) originate in northeast Nevada in the Independence Mountains.

Through the Upper Owyhee Watershed subbasin assessment process it was determined that most streams on the Idaho 1998 §303(d) list in the Upper Owyhee Watershed have cold water aquatic life and salmonid spawning as existing uses. In some cases, data show these uses are not supported due to exceedances of the state of Idaho water quality standards temperature criteria. In other cases, biological information showed impairment to cold water aquatic life and salmonid spawning.

Two streams were listed as not supporting primary and secondary contact recreation due to the presence of bacteria. However, monitoring has indicated those streams are in full support of the recreation beneficial uses.

A TMDL has been developed for each stream determined to be not fully supporting beneficial uses in accordance with state of Idaho water quality standards. The TMDLs address temperature reductions required to meet state of Idaho water quality standard criteria and/or in-stream sediment goals to maintain or restore cold water aquatic life and salmonid spawning. The TMDLs use management objectives dealing with riparian conditions to obtain these goals.

Streams and Pollutants for Which TMDLs Were Developed

Deep Creek	Sediment, temperature
Pole Creek	Temperature
Castle Creek	Sediment, temperature
Red Canyon Creek	Temperature
Nickel Creek	Sediment
Blue Creek Reservoir	Sediment
Juniper Basin Reservoir	Sediment

Subbasin Assessment and TMDLs

View [entire document, including Appendices](#) (pdf 5.9 mb, 345 pages)

View [entire document, excluding Appendices](#) (pdf 2.1 mb, 151 pages)

Because of the large size of this pdf document, we also have separated the document into smaller parts for quicker downloading as follows:

Part 1:	Table of Contents; Lists of Figures and Tables; Executive Summary; Subbasin Assessment: Watershed Characterization and Water Quality Concerns and Status	1.0 mb, 102 pages
Part 2:	Subbasin Assessment: Pollutant Source Inventory and Pollutant Control Strategy; Total Maximum Daily Load	1.1 mb, 49 pages
All Appendices	Technical Appendices A - G	3.8 mb, 194 pages
Appendices A and B:	Unit Conversion Chart and 5th Field Statistics	606 kb, 62 pages
Appendices C and D:	Data Sources and Stream Segment Temperature and Hydrology Models	2.2 mb, 62 pages
Appendices E, F, and G:	Photos, Distribution List, Public Comments	1.1 mb, 70 pages

Implementation Plan

[Implementation Plan for Agriculture: October 2004](#) 1.7 mb, pages

Five Year Review

View [entire document](#) (June 2009: pdf 1.2 mb, 37 pages).

For the most current information on the Upper Owyhee TMDL, see www.deq.idaho.gov/water/data_reports/surface_water/tmdls/owyhee_watershed_upper/owyhee_watershed_upper.cfm.

South Fork Owyhee River TMDL Information



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Surface Water: South Fork Owyhee River Subbasin Assessment and Total Maximum Daily Load

> [Link to document](#)

The Subbasin at a Glance

Hydrologic Unit Code	17050105
Size	Total: 1,183,923 acres (1,850 square miles) In Idaho: 154,810 acres (242 square miles)
§303(d) Listed Stream Segment	South Fork Owyhee River
Beneficial Uses Affected	Primary contact recreation, secondary contact recreation, cold water biota, salmonid spawning, special resource waters, domestic water supply, agricultural water supply
Pollutants of Concern	Sediment and temperature
Major Land Use	Livestock grazing
Date Approved by U.S.EPA	March 2000

Background

The federal Clean Water Act requires that states and tribes restore and maintain the chemical, physical, and biological integrity of the nation's waters. States and tribes must adopt water quality standards necessary to protect fish, shellfish, and wildlife while providing for recreation in and on the waters whenever possible.

Section 303(d) of the Clean Water Act establishes requirements for states and tribes to identify and prioritize water bodies that are water quality limited (i.e., water bodies that do not meet water quality standards). States and tribes must periodically publish a priority list of impaired waters, currently every two years. For waters identified on this list, states and tribes must develop water quality improvement plans known as total maximum daily loads (TMDLs) that establish allowable pollutant loads set at levels to achieve water quality standards.

Overview

The South Fork Owyhee River is located in the far southwestern portion of Idaho and originates in the north central portion of Nevada. The area is predominately open desert and deep canyons.

The hydrology of the South Fork Owyhee River is the river itself. There are no perennial streams that feed the river within Idaho. The South Fork

Owyhee River is subject to “flashy” flow conditions with peak flows occurring anytime from January to June. There are no major impoundments in either Nevada or Idaho.

With the exception of temperature, water column chemistry meets the Idaho Water Quality Standards and Wastewater Treatment Requirements. Water temperatures often exceed water quality standards for the protection of both cold water biota and salmonid spawning. Warm water temperatures may be the most important factor limiting the presence of trout species. There is no indication that sediments are impairing beneficial uses.

A TMDL for temperature is an appropriate vehicle for addressing temperature concerns in the South Fork Owyhee River. A load capacity is assigned in this document, which includes a load allocation for the water as it enters the state of Idaho.

If the South Fork Owyhee River is able to meet Idaho temperature criteria at the Idaho/Nevada border, the argument could be made that the additional increase in Idaho is natural, and site-specific criteria could be developed. Alternatively, if the South Fork Owyhee River cannot meet Idaho temperature criteria at the border, then Idaho and Nevada will need to work together to develop appropriate site-specific criteria.

Stream and Pollutant for Which a TMDL Was Developed

South Fork Owyhee River Temperature

Subbasin Assessment and TMDL

View [entire document](#) (pdf 5.2 mb, 203 pages)

Because of the large size of this pdf document, we also have separated the document into smaller parts for quicker downloading as follows:

Body of document only (no appendices)	<i>Prefatory Materials, Executive Summary, Subbasin Assessment, Total Maximum Daily Loads, Reference Materials</i>	1.1 mb, 50 pages
Appendix A:	<i>Water Quality and Water Temperature Information</i>	2.2 mb, 42 pages
Appendices B, C, and D:	<i>Macroinvertebrate Information, Periphyton Analysis, Idaho River Ecological Assessment</i>	1.4 mb, 55 pages
Appendices E and F:	<i>Photos, Public Comments and Responses</i>	1.1 mb, 59 pages

For the most current information on the South Fork Owyhee River TMDL, see www.deq.idaho.gov/water/data_reports/surface_water/tmdls/owyhee_river_sf/owyhee_river_sf.cfm.

North and Middle Fork Owyhee River TMDL Information



Surface Water: North and Middle Fork Owyhee River Subbasin Assessment and Total Maximum Daily Loads

- > [Link to document](#)
- > [Link to implementation plan](#)
- > [Link to five year review](#)

The Subbasin at a Glance

Hydrologic Unit Code	17050107
§303(d) Listed Water Bodies	North and Middle Fork Owyhee River, Juniper Creek, Noon Creek, Pleasant Valley Creek, Squaw Creek
Beneficial Uses Affected	Salmonid spawning, salmonid rearing, cold water biota
Pollutants of Concern	Temperature
Major Land Uses	Grazing, agriculture
Date Approved by U.S.EPA	February 2000

Return to

[List of Subbasin Assessments, TMDLs, and Implementation Plans in Idaho](#)

See Also

[Overview of the TMDL Process](#)

North and Middle Fork Owyhee River Subbasin TMDL Contact

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Background

The federal Clean Water Act requires that states and tribes restore and maintain the chemical, physical, and biological integrity of the nation's waters. States and tribes must adopt water quality standards necessary to protect fish, shellfish, and wildlife while providing for recreation in and on the waters whenever possible.

Section 303(d) of the Clean Water Act establishes requirements for states and tribes to identify and prioritize water bodies that are water quality limited (i.e., water bodies that do not meet water quality standards). States and tribes must periodically publish a priority list of impaired waters, currently every two years. For waters identified on this list, states and tribes must develop water quality improvement plans known as total maximum daily loads (TMDLs) that establish allowable pollutant loads set at levels to achieve water quality standards.

Overview

The North and Middle Fork Owyhee River drainages are located within one fourth- order hydrologic unit in southwest Idaho. They generally drain west from Idaho into Oregon. The existing uses of tributaries of the North and Middle Forks Owyhee River include cold water biota, salmonid spawning, rearing of redband trout, secondary contact recreation, and agricultural water supply. Existing uses of the North and Middle Forks

Owyhee River include those uses as well as primary contact recreation, domestic water supply, and special resource waters. Of these uses, only cold water biota, salmonid spawning, and salmonid rearing were affected by pollutants.

Stream temperature data from water bodies within the North and Middle Fork Owyhee hydrologic unit show many of the streams' temperatures exceed the Idaho and Oregon water quality temperature standards.

Some stream segments were also listed for sediment, bacteria, and/or flow alteration. A review of the biological and chemical sediment data available showed no violations of applicable water quality standards for sediment and no impairment to the biological community from sediment. Therefore, TMDLs for sediment were not written; however, there can be no increase to the current sediment loads.

Bacteria was listed as a pollutant of concern for the North Fork Owyhee River, but sampling indicated bacteria levels did not violate current Idaho or Oregon standards, so a TMDL for bacteria was not written for the North Fork Owyhee River. Flow alteration was listed as a concern for several water bodies, but TMDLs were not prepared for flow alteration. Flow alteration is considered "pollution," but not a "pollutant," and TMDLs are not required for water bodies impaired by pollution, but not by specific pollutants. A TMDL is only required when a pollutant can be identified and in some way quantified.

Streams and Pollutant for Which TMDLs Were Developed

Middle Fork Owyhee River	Temperature
North Fork Owyhee River	Temperature
Big Spring Creek	Temperature
Cabin Creek	Temperature
Corral Creek	Temperature
Juniper Creek (two segments)	Temperature
Noon Creek	Temperature
Pleasant Valley Creek	Temperature
Squaw Creek (two segments)	Temperature

Subbasin Assessment and TMDLs

This subbasin assessment and TMDL document is not available electronically. To view a hard copy, contact DEQ's [North and Middle Fork Owyhee River TMDL contact](#).

Implementation Plan

[Implementation plan: February 2002](#) 915 kb, 52 pages

Five Year Review

View [entire document](#) (June 2009: pdf 1.3 mb, 31 pages).

For the most current information on the North and Middle Fork Owyhee River TMDL, see www.deq.idaho.gov/water/data_reports/surface_water/tmdls/owyhee_river_nf_mf/owyhee_river_nf_mf.cfm.

Jordan Creek TMDL Information



Return to

[List of Subbasin Assessments, TMDLs, and Implementation Plans in Idaho](#)

See Also

[Overview of the TMDL Process](#)

Jordan Creek Subbasin TMDL Contact

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Surface Water: Jordan Creek Subbasin Assessment and Total Maximum Daily Load

> [Link to document](#)

The Subbasin at a Glance

Hydrologic Unit Code	17050108
Size	Approximately 385,000 acres in Idaho (approximately 740,000 acres total)
§303(d) Listed Stream Segments	Jordan Creek (2 Segments), Cow Creek, Soda Creek, Rock Creek, Spring Creek, Louisa Creek, Louse Creek
Beneficial Uses Affected	Cold water aquatic life, primary contact recreation, salmonid spawning, special resource water
Pollutants of Concern	Sediment, bacteria, flow alteration, oil and grease, pesticides, metals, pH, mercury, temperature
Major Land Uses	Irrigated agriculture, rangeland, forest, mining, riparian
Public Comment Period	April 30 - July 6, 2007

Background

The federal Clean Water Act requires that states and tribes restore and maintain the chemical, physical, and biological integrity of the nation's waters. States and tribes must adopt water quality standards necessary to protect fish, shellfish, and wildlife while providing for recreation in and on the waters whenever possible.

Section 303(d) of the Clean Water Act establishes requirements for states and tribes to identify and prioritize water bodies that are water quality limited (i.e., water bodies that do not meet water quality standards). States and tribes must periodically publish a priority list of impaired waters, currently every two years. For waters identified on this list, states and tribes must develop water quality improvement plans known as total maximum daily loads (TMDLs) that establish allowable pollutant loads set at levels to achieve water quality standards.

Overview

The Jordan Creek watershed encompasses a large area in southwest Idaho and southeast Oregon. The headwaters of Jordan Creek originate in the western section of the Owyhee Mountains, in southwest Idaho, flowing

mostly west into Oregon, entering near the community of Jordan Valley.

A majority of the population in the watershed is associated with small homesteads, ranches, and farms scattered throughout the watershed. Jordan Valley, Oregon, is the only identifiable municipality with permanent year-round residents. The historic town of Silver City, Idaho, is also located within the watershed, but is composed mostly of part-time or weekend residents.

This document addresses only those water bodies in the watershed in Idaho. There was no assessment or interpretation of the status of beneficial uses for water bodies within Oregon.

Overall there are seven segments within the Jordan Creek watershed that were placed on the Idaho 2002 §303(d) list, including two segments of Jordan Creek. The remaining water bodies are tributaries to Jordan Creek.

Total maximum daily loads were developed to address elevated methyl mercury levels in fish tissue on the upper and lower segments of Jordan Creek, and a sediment TMDL was developed for Soda Creek. A temperature TMDL was completed in the watershed to address temperature.

While flow alteration was listed as a pollutant for Jordan Creek, some conditions, such as flow alteration, that impair water quality do not receive TMDLs. While the U.S. Environmental Protection Agency considers certain unnatural conditions, such as flow alteration, that are not the result of the discharge of a specific pollutants as "pollution," TMDLs are not required for water bodies impaired by pollution, but not by specific pollutants. A TMDL is only required when a pollutant can be identified and in some way quantified.

Several other pollutants, such as oil and grease, pesticides, and bacteria, were not found to be exceeding water quality standards or impairing beneficial uses; therefore, TMDLs were not developed for these pollutants and it was recommended they be removed from the §303(d) list.

Streams and Pollutants for Which a TMDL Was Developed

Cow Creek	Temperature
Jordan Creek	Temperature, mercury
Louisa Creek	Temperature
Louse Creek	Temperature
Meadow Creek	Temperature
Rock Creek	Temperature
Soda Creek	Temperature, sediment
Spring Creek	Temperature

Subbasin Assessment and TMDL

View [entire document](#) (pdf 9.0 mb, 333 pages)

Because of the large size of this pdf document, we also have separated the document into smaller parts for quicker downloading as follows:

Prefatory	Cover, Acknowledgments; Table of Contents	431 kb, 32 pages
Material:	Contents (including Lists of Tables and	

	<i>Figures); Abbreviations, Acronyms, and Symbols; Executive Summary</i>	
Chapter 1:	<i>Subbasin Assessment - Watershed Characterization</i>	1.5 mb, 36 pages
Chapter 2:	<i>Water Quality Limited and Supporting Information</i>	2.0 mb, 82 pages
Chapter 3:	<i>Subbasin Assessment - Pollutant Source Inventory</i>	161 kb, 12 pages
Chapter 4:	<i>Subbasin Assessment - Summary of Past and Present Pollution Control Efforts</i>	16 kb, 2 pages
Chapter 5:	<i>Total Maximum Daily Load(s)</i>	2.2 mb, 44 pages
Supporting Documentation:	<i>References, Glossary</i>	117 kb, 40 pages
Appendices:	<i>Appendices A through H</i>	2.9 mb, 85 pages

For the most current information on the Jordan Creek TMDL, see www.deq.idaho.gov/water/data_reports/surface_water/tmdls/jordan_creek/jordan_creek.cfm

13. REGULATORY DIRECTORY AND WEB SITE RESOURCES

The following is not intended as a source of regulatory guidance but is provided to direct readers to the proper agency.

Idaho Department of Environmental Quality

DEQ is responsible for protecting the quality of ground water in Idaho and relies on a combination of programs to protect ground water from pollution, clean up degraded ground water, and monitor and assess ground water quality. DEQ's ground water policy is to maintain and protect the existing high quality of Idaho's ground water and restore degraded ground water where feasible to support ground water beneficial uses. DEQ Ground Water Program staff in the State Office can be contacted at (208) 373-0502. Ground Water Program staff in DEQ's Boise Regional Office can be contacted at (208) 373-0550.

See the DEQ Web pages listed below for more information:

- Ground water information specific to nitrate contamination:
www.deq.idaho.gov/water/prog_issues/ground_water/nitrate.cfm
- Information on private, domestic drinking water:
www.deq.idaho.gov/water/prog_issues/ground_water/wells/overview.cfm
- Drinking water protection information:
www.deq.idaho.gov/water/prog_issues/source_water/protection.cfm
- Information regarding source water assessments of public drinking water systems:
www.deq.idaho.gov/water/prog_issues/source_water/assessment.cfm
- Information on source water protection grants: www.deq.idaho.gov/Applications/gwgamg/
- Information regarding the operation of swine and poultry facilities:
www.deq.idaho.gov/water/prog_issues/agriculture/swine_poultry.cfm
- Information on nutrient pathogen studies for septic tank effluent evaluations
www.deq.idaho.gov/water/assist_business/septic/nutrient_pathogen_eval_guide.pdf
- Information on design of septic systems
www.deq.idaho.gov/water/assist_business/septic/tech_manual_updates.cfm

Idaho State Department of Agriculture

The Idaho State Department of Agriculture (ISDA) serves the agriculture industry and the consumer through regulatory and service activities. ISDA safeguards the public, plants, animals, and environment through promotion, education, and regulation. ISDA staff can be contacted at (208) 332-8500.

ISDA programs affecting ground water quality are described below:

- The ISDA Division of Animal Industries can be reached at (208) 332-8540. Additional Confined Animal Feeding Operation (CAFO) information can be found at www.idahoag.us/Categories/Animals/cattleFeedlots/indexcattlefeedlots.php.

- The Nutrient Management Program is designed to minimize adverse impacts on surface or ground water. Managing nutrients is a priority to protect agriculture's economic viability and the environment. For more information visit:
www.idahoag.us/Categories/Environment/nmp/indexnmp.php.
- The ISDA Dairy Bureau can be reached at (208) 332-8550. Additional dairy information can be found at www.idahoag.us/Categories/Animals/Dairy/indexdairyMain.php.
- The Agricultural Water Quality Program implements agricultural monitoring and protection programs with public and private partners to protect ground and surface water quality. Projects are related to pesticides.

The ISDA Water Quality Program staff can be reached at (208) 332-8605. For more information, visit www.idahoag.us/Categories/Environment/water/indexwater.php.

- Authority to regulate siting of CAFOs in Idaho rests with the counties. County ordinances can regulate CAFO zoning and contain environmental-protection clauses and rules about waste removal as well.

The CAFO Siting Team will conduct an environmental risk assessment at the request of the county. ISDA's Division of Animal Industries can be reached at (208) 332-8540. CAFO Site Team information is provided at www.idahoag.us/Categories/Environment/cafoSiting/indexsitingTeam.php.

- The Division of Agricultural Resources works to promote, direct, and ensure safe agricultural and environmental practices. Through education and enforcement, the division ensures compliance with federal and state rules and laws governing pesticide use in Idaho.

The ISDA Agricultural Resources Program can be reached at (208) 332-8605. For more information, visit www.idahoag.us/Categories/Pesticides/indexPesticides.php.

Idaho Soil Conservation Commission

The Commission's purpose is to provide support and service to Idaho's 51 soil conservation districts for the wise use and enhancement of soil, water, and related resources. Responsibilities of the commission include the following:

- Administer general funds appropriated by the Idaho Legislature to soil conservation districts so they can install resource conservation practices
- Provide technical assistance personnel to soil conservation districts to administer water quality projects and conduct soil surveys
- Participate in the National Cooperative Soil Survey Program, a comprehensive effort to provide modern soil survey information on all non-federal lands.
- Administer the Conservation Improvement Grants program.

Idaho Soil Conservation Commission staff can be contacted at (208) 332-8650. For more information, visit www.scc.idaho.gov.

Soil Conservation Districts

Soil conservation districts provide action at the local level to promote wise and beneficial conservation of natural resources with emphasis on soil and water. Idaho's Soil Conservation Districts, the Idaho Soil Conservation Commission, and the federal Natural Resources Conservation Service have forged a unique local, state, and federal partnership to promote soil conservation. Water quality projects are administered locally by soil and water conservation districts. These projects address nonpoint source water quality problems coming from agricultural activities by encouraging voluntary use of best management practices.

Soil conservation district offices and contact information can be found at www.scc.state.id.us/scd.htm. Total maximum daily load field staff and field office locations can be found at www.iascd.state.id.us/Staff.htm.

Soil conservation district programs relating to ground water quality are described below:

- The Idaho Homestead Assessment System (Home*A*Syst) provides information on protecting drinking water. It is a cooperative project developed, coordinated, and supported by several state and federal agencies and organizations. The ISDA contact for Home*A*Syst can be reached at (208) 332-8603. Additional information about Home*A*Syst can be found at <http://homeasyst.idahoag.us/Water/indexHomeASyst.php>.
- Idaho OnePlan provides data and tools to help growers develop a single conservation farm plan that can be pre-endorsed by various agencies, streamlining and simplifying the regulatory process that farmers face. Idaho OnePlan is a multi-agency project to combine government regulations and current best management practices for agriculture into a single plan. OnePlan integrates federal, state, and local regulations for nutrient, pest and waste management; water quality and wetlands; air quality; financial assistance; endangered species; and petroleum storage tanks. The contact for Idaho OnePlan at the Idaho Association of Soil Conservation Districts can be reached at (208) 338-4321. Additional information about Idaho OnePlan can be found at www.oneplan.org.

Southwest District Health

The mission of Idaho's seven public health districts is to prevent disease, disability, and premature death; promote healthy lifestyles; and protect the health and quality of the environment. Southwest District Health (SWDH) is responsible for Adams, Canyon, Gem, Owyhee, Payette, and Washington Counties. Some of SWDH's responsibilities are described below.

- SWDH Environmental Health Services regulates subsurface sewage disposal systems in cooperation with DEQ. Developers/homeowners should contact SWDH to discuss applications and permitting requirements for subsurface sewage disposal system. Note that a subsurface sewage permit is usually a prerequisite to obtaining a building permit from the county. SWDH Environmental Health Services can be contacted at 455-5400. Additional septic tank information can be found at www.publichealthidaho.com/septic-systems.asp.
- SWDH Environmental Health Services is responsible for maintaining and releasing sanitary restrictions in force on all platted subdivisions (see Idaho Code, Title 50, Chapter 13 at <http://www3.state.id.us/idstat/TOC/50FTOC.html>). SWDH may require a nutrient pathogen study, depending on the location of the subdivision, size of the lots, and density of

dwellings. SWDH Environmental Health Services can be contacted at (208) 455-5400. Additional land development information can be found at www.publichealthidaho.com/land-development.asp.

- Owners of private water supplies have the sole responsibility to maintain them and ensure safe potable water. The Private Water Program that SWDH administers provides education, technical assistance, and water sampling, for a nominal fee. Private residents can choose to collect their own water samples as well. SWDH can provide guidance on what tests would be beneficial and what the results mean to public health. For more information, please contact the SWDH Public Drinking Water Coordinator at (208) 455-5400 or visit www.publichealthidaho.com/private-public-water.asp.
- SWDH has developed the following brochures related to ground water issues:
 - Nitrate-Nitrite in Drinking Water, available at www.publichealthidaho.com/pdf/Nitrate-Nitrite-in-Drinking-Water.pdf
 - Idaho Private Well Owner, available at www.publichealthidaho.com/pdf/Idaho-Private-Well-Owner-Brochure.pdf
 - Disinfecting Domestic Wells, available at www.publichealthidaho.com/PDF/Disinfecting-Domestic-Wells.pdf
 - Hydrogen Sulfide in Drinking Water, available at www.publichealthidaho.com/PDF/Hydrogen-Sulfide-in-Drinking-Water.pdf
 - Septic Systems, available at www.publichealthidaho.com/PDF/Septic-Systems.pdf
 - Arsenic in Drinking Water, available at www.publichealthidaho.com/pdf/Arsenic-in-Drinking-Water.pdf
 - Subdivision Approval Requirements, available at www.publichealthidaho.com/PDF/Subdivision-Approval-Requirements.pdf
 - Proper Sewage Clean Up Procedures, available at www.publichealthidaho.com/PDF/Proper-Sewage-Clean-Up-Procedures.pdf

Idaho Department of Water Resources

The Idaho Department of Water Resources (IDWR) serves the people of Idaho and protects their welfare by making sure that water is conserved and available to sustain Idaho's economy, ecosystem, and the resulting quality of life. IDWR provides a variety of services for the public, such as water rights research, historical record reproduction of water rights, driller's reports, and dam safety inspections. The IDWR State Office can be contacted at (208) 287-4800. The IDWR Boise Regional Office can be contacted at (208) 334-2190. More information is available on the Web pages listed below.

- Most private water supplies consist of a single well that serves a single residence. IDWR regulates and permits all wells in the state of Idaho. Well construction standards and permit applications are located at www.idwr.idaho.gov/watermanagement/wellinformation/default.htm.
- Water resource information can be found at www.idwr.idaho.gov.
- IDWR maintains an interactive mapping web site at www.idwr.idaho.gov/geographicinfo/mapserver/mapserver.htm.

- IDWR injection well information and requirements are at www.idwr.idaho.gov/watermanagement/wellinformation/injection/injection.htm.

Natural Resources Conservation Service

The Natural Resources Conservation Service (NRCS) provides technical assistance to farmers, ranchers, and other private landowners who would like to implement conservation practices on their land. This includes information on soils, forestry management, pasture and hayland management, erosion control, and water quality. The NRCS State Office can be contacted at (208) 378-5700. NRCS field offices by county and conservation district are available at www.id.nrcs.usda.gov/contact/field_contacts.html.

NRCS programs can be generally divided between financial assistance and technical assistance. Information about NRCS programs can be accessed at www.id.nrcs.usda.gov/programs/. More information on specific programs is given below.

- The Environmental Quality Incentives Program is a voluntary conservation program that allows some farmers to receive financial and technical assistance for conservation practices on agricultural land. For more information, visit www.id.nrcs.usda.gov/programs/eqip/2008/index.html.
- The Conservation Innovation Grant program is a voluntary program intended to stimulate the development and adoption of innovative conservation approaches and technologies while leveraging federal investment in environmental enhancement and protection, in conjunction with agricultural production. For more information, visit www.id.nrcs.usda.gov/programs/cig/index.html.
- The Cooperative Conservation Partnership Initiative provides financial and technical assistance for conservation practices on agricultural land. For more information, visit www.id.nrcs.usda.gov/programs/ccpi/index.html.
- The Conservation Reserve Program provides financial and technical assistance to eligible farmers and ranchers to address soil, water, and natural resource concerns. For more information, visit www.id.nrcs.usda.gov/programs/crp/index.html.
- The Conservation Technical Assistance Program provides technical assistance supported by science-based technology and tools to help people conserve, maintain, and improve their natural resources. For more information, visit www.nrcs.usda.gov/programs/cta/.
- Ecological Sciences/Technical Resources for water quality include the following:
 - Idaho Nutrient Transport Risk Assessment, a water quality risk assessment tool for conservation planning (August 2006), available at http://www.id.nrcs.usda.gov/technical/water_quality.html
 - Nitrogen Transport Risk Assessment (August 2005), available at http://www.id.nrcs.usda.gov/technical/water_quality.html
- Ecological Sciences/Technical Resources for nutrient management can be found at www.id.nrcs.usda.gov/technical/nutrient_management.html.
- Ecological Sciences/Technical Resources for agronomy can be found at www.id.nrcs.usda.gov/technical/agronomy.html.

- Idaho soils program technical resources can be found at www.id.nrcs.usda.gov/technical/soils/index.html.

University of Idaho Extension Service

The professionals within this network work with the people of Idaho to address agricultural, natural resource, youth, family, community, and environmental issues. Collaborative relationships with countless agencies, groups, and individuals make possible a vast array of innovative educational programs. Extension faculty are joined by several thousand volunteers and by dozens of cooperating agencies, organizations, and businesses, both public and private, on the local, state, and national levels.

District II of the University of Idaho Extension encompasses the 10 counties of southwestern Idaho, a region that stretches from the Nevada border north to the Little Salmon River. Agricultural enterprises include farming, ranching, and dairying. Tree fruit, seed, row crops, and forages are the main crops that span the Boise, Payette, and Weiser River valleys. Cow-calf operations center in the rangeland areas of Owyhee, Washington, and Adams counties. Dairies are located primarily in Ada and Canyon counties. Extension education covers production, management, and marketing of these agricultural commodities, as well as natural resource conservation and development. The District II Office can be contacted at (208) 454-7674. A list of extension offices by county is available at <http://extension.ag.uidaho.edu/district2/counties.htm>.

Dairy and beef producers can draw on UI Extension expertise to protect herds and operate more efficiently. UI Extension provides research-based, local information to help producers protect the environment and manage their animals. More information can be found at www.extension.uidaho.edu/animals.asp.

UI Extension provides timely and local research-based information to help growers control pests, market products, and find new varieties. More information can be obtained at www.extension.uidaho.edu/crops.asp.

General State of Idaho Contacts

For information about other state resources not found in this section, see the state of Idaho's official Web site at www.accessidaho.org.

14. FUNDING SOURCES

§104(b)(3) Tribal and State Wetland Protection Grant, U.S. Environmental Protection Agency

This program, created by the U.S. Environmental Protection Agency (EPA) in 1990 under the Clean Water Act Section 104(b)(3), provides financial assistance to state, tribal, and local government agencies to develop new wetland protection programs or refine and improve existing programs. All projects must clearly demonstrate a direct link to improving an applicant's ability to protect, restore or manage its wetland resources.

§319 (h)...Nonpoint Source Grants, EPA/Idaho Department of Environmental Quality

This program provides financial assistance for the implementation of best management practices to abate nonpoint source pollution. The Idaho Department of Environmental Quality (DEQ) manages the nonpoint source (NPS) program. All projects must demonstrate the applicant's ability to abate NPS pollution through the implementation of best management practices (BMPs).

Aquatic Ecosystem Restoration, U.S. Army Corps of Engineers

Section 206 of the federal Water Resources Development Act of 1996 provides financial assistance for aquatic and associated riparian and wetland ecosystem restoration and protection projects that will improve the quality of the environment. There is no requirement for an aquatic ecosystem project to be linked to a Corp of Engineers project. The program does require that a non-federal interest provide 35% of construction costs, including all lands, easements, right-of-ways, and necessary relocations. The program also requires that 100% of the operation, maintenance, replacement, and rehabilitation be borne by the non-federal interest. The program limits the amount of federal assistance to \$5 million for any single project.

Aquifer Protection District, Local Initiative

Idaho Code Title 39 Chapter 5 provides a mechanism for counties overlying sensitive resource aquifers to form an aquifer Protection District. The purpose of such a district is to protect existing and potential ground water supplies and recharge areas, particularly those areas that contribute to public water supplies. An aquifer protection district is created through an election. Once established, the district can raise revenue through fees charged to land owners benefitted by the availability of water from the aquifer protected by the district. This revenue ensures that an area can pay for ongoing programs and services necessary to protect the aquifer. The revenue can be used as matching funds to receive additional resources. Unfortunately, this legislation would need to be amended to include general resource aquifers before Owyhee County could pursue this option.

In 2006, Kootenai County voters approved the formation of the state's first aquifer protection district established to ensure that the county can continue to pay for the services and programs

necessary to prevent contamination of drinking water. Those services include protecting source water, preventing spills by secondary containment and proper handling of hazardous materials, minimizing septic discharges, managing storm water, monitoring ground water quality, and conducting education and outreach activities. More information on the Kootenai County Aquifer Protection District is available at www.phd1.idaho.gov/environmental/rathdrum/protectionprogram.cfm.

Conservation Operations Program (CO-01), Natural Resources Conservation Service

The CO-01 program provides technical assistance to individuals and groups of landowners for the purpose of establishing a link between water quality and the implementation of conservation practices. The Natural Resources Conservation Service (NRCS) technical assistance program provides farmers and ranchers with information and detailed plans necessary to conserve their natural resources and improve water quality.

Conservation Reserve Program, Farm Service Agency

The Conservation Reserve Program provides a financial incentive to landowners for the protection of highly erodible and environmentally sensitive lands with grass, trees, and other long-term cover. This program is designed to remove those lands from agricultural tillage and return them to a more stable cover.

Conservation Technical Assistance, NRCS

The NRCS provides conservation technical assistance to private landowners, conservation districts, tribes and other organizations. Preparation of conservation plans and implementation of best management practices is the main form of technical assistance. Assistance can also include the interpretation of soil, plant, water, and other physical conditions needed to determine the proper BMPs. The CTA program also provides financial assistance in implementing BMPs described in the conservation plan.

Direct Loan Program, Farm Service Agency

This program provides loans to farmers and ranchers who are unable to obtain financing from commercial credit sources. Loans from this program can be used to purchase or improve pollution abatement structures.

Embrace-A-Stream Program, Trout Unlimited

Trout Unlimited provides funding to landowners for small-scale stream restoration projects. These projects have significant involvement from Trout Unlimited volunteers. For more information, see www.tu.org.

Environmental Quality Incentives Program, NRCS

This program offers technical assistance and cost share monies to landowners for the establishment of a five- to ten-year conservation agreement for activities such as manure

management, pest management, and erosion control. The program gives special consideration to contracts in those areas where agricultural improvements will help meet water quality objectives.

Fish America Foundation

The Fish America Foundation provides matching funds for restoration projects that entail the improvement of sport fisheries. For more information, see www.fishamerica.org.

Hydrologic Unit Areas (HUAs), NRCS

The NRCS is responsible for HUA water quality projects. The purpose of these projects is to accelerate technical and cost-share assistance to farmers and ranchers in addressing agricultural nonpoint source pollution.

Idaho Water Resources Board Financial Programs, Idaho Department of Water Resources

The Idaho Water Resources Board Financial Program assists local governments, water and homeowner associations, nonprofit water companies, and canal and irrigation companies with funding for water system infrastructure projects. The various types of projects that can be funded include public drinking water systems; irrigation systems; drainage or flood control; ground water recharge; and water project engineering, planning, and design. Funds are made available through loans, grants, bonds, and a revolving development account.

National Conservation Buffer Initiative, NRCS

The National Conservation Buffer Initiative provides cost-share funds in an effort to use grasses and trees as conservation buffers to protect and enhance riparian resources on farms.

Partners for Wildlife (Partners), U.S. Fish and Wildlife Service

The Partners for Wildlife program is implemented by the U.S. Fish and Wildlife Service and designed to restore and enhance fish and wildlife habitat on private lands through public/private partnerships. Emphasis is on restoration of riparian areas, wetlands, and native plant communities.

Pheasants Forever

Pheasants Forever can provide up to 100% cost-share for projects that establish, maintain, or enhance wildlife habitat for pheasant and other upland game. For more information, see www.pheasantsforever.org.

Planning Assistance, U.S. Army Corps of Engineer

Section 22 of the federal Water Resources Development Act of 1974 authorizes the U.S. Army Corps of Engineers to assist local governments and agencies, including Indian Tribes, in preparing comprehensive plans to develop, utilize, and conserve water and related resources. Total costs for projects cannot exceed \$1 million in a single year and are cost-shared at a 50% federal and 50% non-federal rate.

Resource Conservation and Development, NRCS

This program assists communities with economic opportunities through the wise use and development of natural resources by providing technical and financial assistance. Program assistance is available to address issues including water quality degradation through the control of nonpoint source pollution and water management for conservation, use, and quality.

Resource Conservation and Rangeland Development Program, Idaho Soil Conservation Commission

This program provides grants for the improvement of rangeland and riparian areas, and loans for the development and implementation of conservation improvements.

Source Water Protection Grant, DEQ

DEQ's Source Water Protection Grants provide funding for projects to protect sources of public drinking water. Projects can take either a local or regional approach. Local projects will concentrate on protection of a specific community public water supply system, while regional protection activities will cover multiple systems and communities. Water treatment and operations and maintenance of water systems are not eligible activities.

Small Watersheds (PL-566), NRCS

The Small Watersheds program authorizes the NRCS to cooperate in planning and implementing efforts to improve soil and water conservation. The program provides for technical and financial assistance for water quality improvement projects, upstream flood control projects, and water conservation projects.

Wetlands Reserve Program, NRCS

The Wetlands Reserve Program was established to help landowners work toward the goal of "no net loss" of wetlands. This program provides landowners the opportunity to establish 30-year or permanent conservation easements, and provides cost-share agreements for landowners willing to provide wetlands restoration.

Wildlife Habitat Incentive Program, NRCS

This program was established to help landowners improve habitat on private lands by providing cost-share monies for upland wildlife, wetland wildlife, endangered species, fisheries, and other wildlife. Cost-share agreements developed under this program generally last from one year after the last conservation practice is implemented but no longer than 10 years from the date the agreement is signed.

15. PUBLIC INFORMATION AND OUTREACH MATERIALS

The brochures listed below involve ground water quality and are designed for the general public. The agency that developed each brochure is listed below, along with Web address of the brochure, if available; the brochures are also included in the following pages.

- **Arsenic in Drinking Water** (Southwest District Health): www.swdh.org/pdf/Arsenic-in-Drinking-Water.pdf
- Assistance Adopting or Updating Zoning or Subdivision Ordinances (Association of Idaho Cities): www.idahocities.org/
- **Basic Information: Fluoride in Drinking Water** (Idaho Department of Environmental Quality): www.deq.idaho.gov/water/assist_citizen_comm/fluoride_brochure.pdf
- **Fertilizer and Pesticide Use at Home** (Idaho Department of Environmental Quality): www.deq.idaho.gov/water/assist_citizen_comm/fertilizer_pesticide_brochure.pdf
- **Idaho Private Well Owner Brochure** (Idaho Department of Health and Welfare): www.swdh.org/pdf/Idaho-Private-Well-Owner-Brochure.pdf
- **It Will Never Be This Obvious: Four Steps to Well Water Safety** (Idaho Department of Health and Welfare): www.healthandwelfare.idaho.gov/LinkClick.aspx?fileticket=VSJEz0yl5ck%3D&tabid=95&mid=948
- **Labs Certified for Drinking Water Analyses** (Idaho Department of Environmental Quality): www.deq.state.id.us/water/assist_business/pws/labs_certified.xls
- **Maintaining Your Septic System: The Do's and Don'ts** (Southwest District Health): www.swdh.org/PDF/Maintaining-Your-Septic-System-The-Dos-Donts.pdf
- **Nitrate in Drinking Water** (Southwest District Health): www.swdh.org/pdf/Nitrate-Nitrite-in-Drinking-Water.pdf
- **OnePlan: For Your Place, on Your Time** (Idaho Association of Soil Conservation Districts).
- **Subsurface Sewage Disposal System Application and Permitting Process** (Southwest District Health): www.swdh.org/PDF/Septic-Systems.pdf
- **Water Quality Publications: Brochures, Fact Sheets and More for Citizens and Communities.** This DEQ Web page lists various brochures, fact sheets, and newsletters dealing with water quality: www.deq.idaho.gov/water/assist_citizen_comm/publications.cfm

Many citizens don't know what the words "public health" really mean. Most people think public health is only for the poor. While we do attend to the health needs of low-income families, we also provide many other services to citizens living in our six-county area. Below are a few of the programs offered at Southwest District Health:

Public Water Supply: Monitor and provide guidance to small public drinking water systems to maintain safe drinking water for their customers. Contact: 455-5400

Private Drinking Water Supply: Provides guidance and technical assistance to private well owners. Contact: 455-5400

Vector and Rodent Control: Provide guidance in controlling vectors (mosquitoes, ticks) and rodent infestations that could prevent the spread of disease causing organisms. Contact: 455-5400

Recreational Premises: Inspect public swimming pools for safety and sanitation. Contact: 455-5400

Sewage Disposal: Ensures that septic tanks and other on-site sewage disposal systems are properly permitted, installed, and operated to prevent the spread of disease. Contact: 455-5400

Individual & Community Land Development: Monitors, evaluates, and enforces regulations on land being developed in Southwestern Idaho. Contact: 455-5400

For more information on arsenic in water systems please contact the

Public Water Coordinator at
Southwest District Health

(208) 455-5400



SOUTHWEST
DISTRICT HEALTH
920 MAIN STREET
CALDWELL, ID 83605

Southwest District Health serves the residents living in Adams, Canyon, Gem, Owyhee, Payette and Washington Counties.

Arsenic in Drinking Water

Arsenic is a metallic element that occurs naturally in its pure form. It can also combine with other elements to form various chemical compounds. It is present in trace amounts in water and many foods and, as a result, most people have minute quantities in their bodies. When arsenic combines with oxygen, chlorine, and sulfur, it is called *inorganic arsenic*. Arsenic in plants and animals combines with carbon and hydrogen and is called *organic arsenic*. Inorganic arsenic is generally the more harmful of the two and tends to be more predominant in drinking water. Arsenic compounds have no smell or taste.

What Are the Sources of Arsenic Contamination in Water

Contamination of a drinking water source by arsenic can result from either natural or human activities. Arsenic is an element that occurs naturally in rocks, soil, water, air, plants, and animals. Volcanic activity, erosion of rocks and minerals, and forest fires are natural sources that can release arsenic into the environment. About 90 percent of the arsenic used by industry in the United States is currently used for wood preservative purposes; arsenic is also used in paints, drugs, dyes, soaps, metals, and semi-conductors. Agricultural applications, mining, and smelting also contribute to arsenic releases.

How Can Arsenic Affect My Health

Arsenic poisoning is either acute (high level doses over a short period), or chronic (low doses with symptoms developing over time), and when confirmed by a simple urine analysis, is medically treatable. Chronic exposure is first noticeable as weakness, tiredness, scaly skin, changes in skin coloration, and swelling of the lining of the mouth. Nerve degeneration then sets in leading to a “tingling” and then numbness in the hands and feet. Acute arsenic poisoning from consumption of high levels of arsenic produces painful intestinal symptoms resulting in the sudden onset of nausea, vomiting, and diarrhea.

Arsenic and Private Wells

Ground water is well known for containing many minerals that give it a distinguishable taste. However, because there are minerals contained within ground water, there is also the possibility that you might have amounts of specific metal such as arsenic in your water. It is recommended that you test your water at least once a year. Southwest District Health will be able to refer you to a certified laboratory that can test your water for arsenic for a nominal fee. Southwest District Health also has information about the typical levels of arsenic in the groundwater in the area where you live.

How Much Arsenic Is Allowed In Public Drinking Water

The Environmental Protection Agency (EPA) sets public drinking water standards called “Maximum

Contaminant Levels” (MCL) to help reduce public health risk associated with drinking water. The EPA has set the arsenic MCL at 0.010 milligrams per liter (mg/L) or 10 parts per billion (ppb). This level was set in 2006 to provide additional protection against cardiovascular disease and cancer.

Can I Make My Water Safe for Consumption

If you have an arsenic problem, there are water treatment technologies available now that can reduce or even remove arsenic from your drinking water. The following water treatment technologies are effective in reducing arsenic from drinking water:

- Ion exchange
- Reverse osmosis
- Absorption

Pretreatment may be needed in some cases to ensure acceptable treatment by the primary unit. If a treatment system is to be used, one with National Sanitation Foundation Certification should be used.

How Likely is Arsenic to Cause Cancer

The Department of Health and Human Services (DHHS) has determined that arsenic is a known carcinogen. Breathing inorganic arsenic increases the risk of lung cancer. Ingesting inorganic arsenic increases the risk of skin cancer and tumors of the bladder, kidney, liver, and lung.



Considering Updating Your Zoning or Subdivision Ordinance?

Through the assistance of the Idaho Department of Commerce, model zoning and subdivision ordinances for Idaho cities are available for you – along with technical support to help with understanding the choices available.

AIC is pleased to offer technical support concerning ordinance adoption and updating from a community planner with extensive experience. Expenses of this assistance are provided by the Idaho Department of Commerce. Resources are limited.

If you would like to be considered to receive such assistance, please complete this form and turn it in at the registration desk. Someone will contact you to discuss this opportunity further.

PLEASE COMPLETE FORM BELOW:

Contact Name: _____

City of: _____

Telephone Number: _____

Email: _____

If you are interested in having AIC assistance in developing an ordinance etc, please fill out the form and send to:

Association of Idaho Cities
Attention: Mandy De Castro
3100 S. Vista Ave. Suite 310
Boise, ID 83705

What is fluoride?

Fluoride is a naturally occurring compound derived from fluorine, the 13th most abundant element on Earth. It is found in many rocks and minerals in the soil and enters drinking water as water passes through these soils.

Fluoride is present naturally in almost all foods and beverages including water, but levels can vary widely. As fluoride can prevent tooth decay, it is sometimes added to drinking water in a process known as fluoridation. However, in Idaho, fluoridation is not common.

This brochure provides answers to some commonly asked questions about fluoride. For more information about fluoride, visit DEQ's Web site and other Web resources listed inside this brochure.

For More Information

Idaho Department of Health and Welfare Bureau of Community and Environmental Health

450 West State Street
Boise, ID 83720
(208) 334-5927

Public Health Districts

Panhandle Health District

8500 N. Atlas Road
Hayden, ID 83835
(208) 415-5200

North Central District Health

215 10th Street
Lewiston, ID 83501
(208) 799-0353

Central District Health

707 North Armstrong Place
Boise, ID 83704
(208) 327-7499

Southwest District Health

920 Main Street
Caldwell, ID 83605
(208) 455-5403

South Central District Health

1020 Washington Street N.
Twin Falls, ID 83301
(208) 734-5900 ext. 217

Southeastern District Health

1901 Alvin Ricken Drive
Pocatello, ID 83201
(208) 233-9080 ext. 320

Eastern Idaho Public Health District

1250 Hollipark Drive
Idaho Falls, ID 83401
(208) 522-0310

Idaho Department of Environmental Quality Regional Offices

Boise Regional Office

1445 North Orchard
Boise, ID 83706
(208) 373-0550

Coeur d'Alene Regional Office

2110 Ironwood Parkway
Coeur d'Alene, ID 83814
(208) 769-1422

Lewiston Regional Office

1118 F. Street
Lewiston, ID 83501
(208) 799-4370

Twin Falls Regional Office

1363 Fillmore Street
Twin Falls, ID 83301
(208) 736-2190

Pocatello Regional Office

444 Hospital Way #300
Pocatello, ID 83201
(208) 236-6160

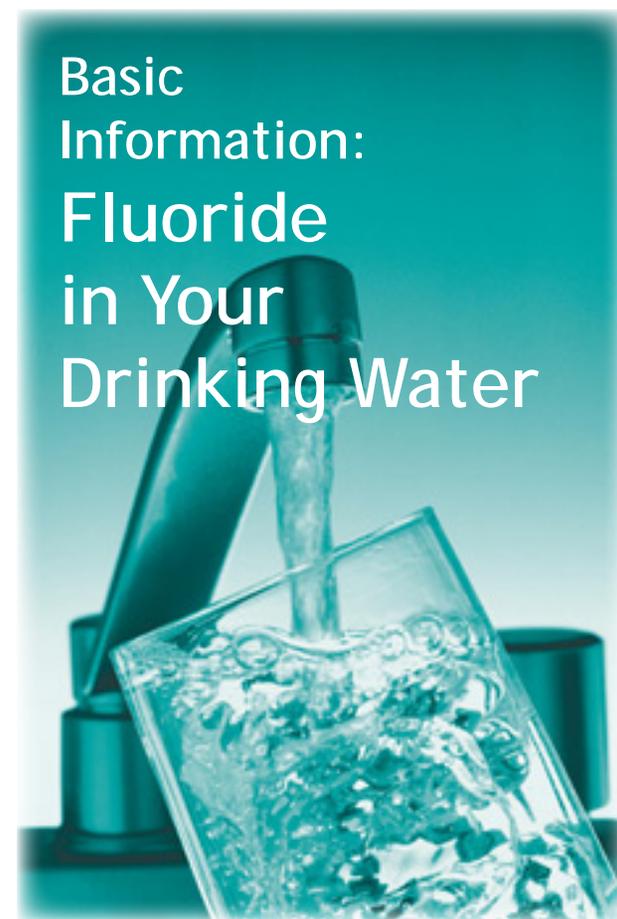
Idaho Falls Regional Office

900 Skyline, Suite B
Idaho Falls, ID 83402
(208) 528-2650



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Drinking Water in Idaho



Basic Information: Fluoride in Your Drinking Water



Idaho Department of
Environmental Quality
www.deq.idaho.gov

Why is fluoride in drinking water regulated?

Fluoride has been shown to prevent tooth decay, but too much fluoride at an early age, while the teeth are forming, can cause discoloration and pitting of the teeth. This condition is known as dental fluorosis. Overexposure to fluoride over a lifetime can lead to certain types of bone disease.

How do I know how much fluoride is in my water?

There are several ways to determine the general fluoride concentrations in your area. If your water comes from a public water system, ask your water provider. If you have a private well, you will need to have your water tested by a qualified lab to determine your fluoride concentrations.

Visit the *Frequently Asked Questions About Fluoride* page on DEQ's Web site (see Web Resources at right) to link to an online listing of the latest test results in your area.

What if I have too much fluoride in my drinking water?

If you have been advised by a professional that the concentration of fluoride in your drinking water is too high, it may be necessary to drink only bottled or properly treated water. (See DEQ's fluoride Web page for treatment options.)

Does bottled water contain fluoride?

Bottled water is regulated by the U.S. Food and Drug Administration and must meet federal drinking water standards for regulated contaminants.



Some bottled water contains natural levels of fluoride from the location where it was collected. Some companies add fluoride to their bottled water, and must say so on the label. Consumers who purchase bottled water should carefully read the label or contact the bottler to understand what they are buying, such as the source of water, the method of treatment and the fluoride level.

How do I test my drinking water?

Your local health department can assist you in testing your drinking water (see office locations on back). Generally, you will need to follow some simple instructions and take a sample of water to a qualified lab for testing. Discuss any concerns you have regarding the results with your dentist, physician, or health department.

For a list of certified labs in your area or to learn more about drinking water and well water, visit DEQ's Web site at www.deq.idaho.gov/water/prog_issues.cfm#drink.

Who can I contact for more information?

For questions about regulated contaminants in public water systems, contact DEQ (see office locations on back).

For oral health questions, your dentist or physician is an excellent place to start. These medical professionals can help you decide what your fluoride needs are. Children and adults have very different fluoride needs, so be sure to discuss the needs of all family members. Your local health department and the Idaho Department of Health and Welfare can also help you decide what steps, if any, you need to take.

Web Resources

Frequently Asked Questions About Fluoride

DEQ Web site: www.deq.idaho.gov/water/prog_issues/drinking_water/fluoride.cfm

Idaho Department of Health and Welfare Oral Health Program

www.healthandwelfare.idaho.gov/site/3494/DesktopDefault.aspx?tabid=3494

List of Idaho Health Districts and their Web sites

www.healthandwelfare.idaho.gov/site/3382/default.aspx

Center for Disease Control

www.cdc.gov/oralhealth/waterfluoridation/index.htm

American Dental Association Fluoride Information

www.ada.org/public/topics/fluoride/index.asp

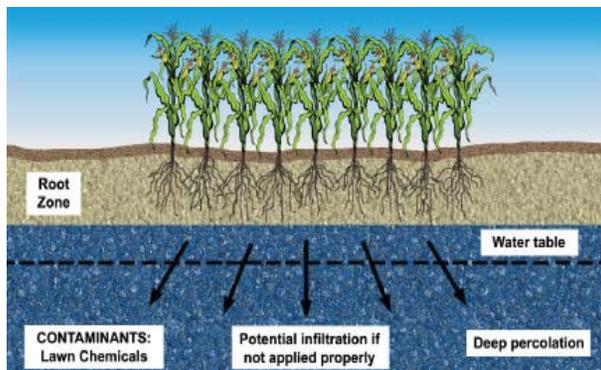
Oral Health Topics A-Z

www.ada.org/public/topics/bottled_water.asp

Why does it matter how much fertilizer and pesticide I add to my lawn? How much effect can one home have on the environment?

Your lawn probably covers a small piece of land. Combined with other homeowners, however, the environmental contamination can present a major problem.

Because the majority of Idaho's drinking water supply comes from ground water, over-application of fertilizers and pesticides can move hazardous chemicals through the soil and into drinking water, adversely affecting human health. Over-application of fertilizers and pesticides can also harm surface waters if chemicals run off into lakes and streams and can damage your lawn as well.



Properly using home lawn chemicals can make a difference and set an example for homeowners around you. This list of tips and facts will help you attain a beautiful *and* environmentally friendly lawn.

For More Information

Idaho Department of Environmental Quality
1410 N. Hilton
Boise, ID 83706
(208) 373-0502

Boise Regional Office
1445 North Orchard
Boise, ID 83706
(208) 373-0550
toll-free: (888) 800-3480

Coeur d'Alene Regional Office
2110 Ironwood Parkway
Coeur d'Alene, ID 83814
(208) 769-1422

Lewiston Regional Office
1118 F Street
Lewiston, ID 83501
(208) 799-4370
toll-free: (877) 541-3304

Twin Falls Regional Office
1363 Fillmore Street
Twin Falls, ID 83301
(208) 736-2190
toll-free: (800) 270-1663

Pocatello Regional Office
444 Hospital Way #300
Pocatello, ID 83201
(208) 236-6160
toll-free: (888) 655-6160

Idaho Falls Regional Office
900 N. Skyline, Suite B
Idaho Falls, ID 83402
(208) 528-2650
toll-free: (800) 232-4635

U.S. Environmental Protection Agency
www.epa.gov

University of Idaho Extension Service
www.ag.uidaho.edu/mg/

Gardening Best Management Practices
www.uidaho.edu/wq/wqbr/wqbr29.html

Idaho Association of Soil Conservation Districts
www.iascd.state.id.us/

Idaho Department of Environmental Quality
www.deq.idaho.gov/multimedia_assistance/citizens.cfm

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accordance with Section 60-202, Idaho Code.*

Water in Idaho

Fertilizer & Pesticide Use at Home

How to have a beautiful lawn *and* protect the environment



Idaho Department of
Environmental Quality
1410 N. Hilton
Boise, ID 83706
(208) 373-0502
www.deq.idaho.gov

Fertilizer Use

Fertilizer provides nutrients—usually nitrogen, phosphorus, and potassium—to lawns and gardens. In the proper quantity and proportion, these nutrients can help produce a healthy lawn and plants. If fertilizer is over-applied or the wrong combination of nutrients is added, plants may not fully absorb all of the nutrients. These excess nutrients can build up in the soil or filter into ground and surface waters, adversely impacting water quality.



Here's how you can help

- **Fertilize your lawn...not your driveway.** Apply fertilizer so that it lands on your lawn or garden, not on adjacent pavement. Fertilizer that lands on paved surfaces wastes money and can end up in Idaho's waterways. If fertilizer lands on the pavement, sweep it onto the lawn.
- **Pick a product with appropriate proportions of the nutrients** your lawn needs. Fertilizers are labeled according to the percentage of each nutrient.
- **Minimize nitrogen use.** Excess nitrogen can contaminate ground water and harm animals and humans, particularly small children.
- **Choose slow-release fertilizers** to minimize chemical loss through the soil and promote uptake by the plant.
- **Look on the back of the bag** for terms such as controlled-release, slow-release, slowly available, or water-insoluble nitrogen.
- **Ask about proper fertilizer application methods.** Make sure your investment is used efficiently. Don't over-apply so that your lawn is not harmed.

- **Plant native grasses and plants** that tend to be adapted to the local environment and may not need supplemental nutrients.
- **Test your lawn's soil.** By determining the characteristics of the soil, you can tell which nutrients are lacking and apply fertilizer more efficiently.

Remember, proper fertilization not only protects Idaho's water, but can reduce money spent on lawn care products and time devoted to lawn care.

A Healthy Lawn

Maintaining a healthy carpet of grass may involve use of fertilizers and pesticides. With proper care, you can maximize the benefits of these products while minimizing their adverse effects on the environment.

Disposal

Proper waste disposal is a critical final measure toward protecting Idaho's water from lawn care products. To minimize impact from extra product and waste containers:

- ✓ Buy **the least amount** of product needed.
- ✓ **Rinse containers** and use the rinsate as you would the product.
- ✓ **Properly dispose of the container.** Do not use it to store another liquid. Contact your local landfill, waste hauler, or public works department for disposal and recycling options in your area.



Pesticide Use

A pesticide is any substance or mixture of substances intended to prevent, repel, mitigate, or kill any pest. Pests can be insects, mice and other animals, unwanted plants (weeds), fungi, or microorganisms like bacteria and viruses.

Here's how to use pesticides wisely

- **Identify the problem.** Different pests require different controls. Using the wrong pesticide could damage the plant or surrounding garden without solving the problem.
- **Try non-toxic controls first.** Many common pests can be cured with non-toxic alternatives. Beer can be used to capture slugs, for example, and soapy water can eliminate many garden pests. Some pests can simply be removed by hand. Refer to an organic gardening book for suggestions.
- If pesticides must be used, **limit application** to the rates specified on the label to prevent over-application.
- Apply **only to the affected part** of the plant.
- **Apply when pests are most vulnerable.** Depending on the pest, applications at night, early morning, or after watering may be most effective.
- **Make a habit of inspecting your lawn for pests.** Catching a problem early reduces the amount of pesticide needed and prevents storage and disposal problems.
- If using a pest control service, ensure it follows **best management practices**.
- **Read product label and follow instructions.** The label tells you how to use the product safely and effectively. Use of any pesticide in any way that is not consistent with label directions and precautions is illegal. It can also be ineffective, harmful to the environment, and potentially dangerous.

For a copy of the Home*A*Syst packet, call the Idaho Association of Soil Conservation Districts at 208-338-5900 or download a packet at the following website:

<http://homeasyst.idahoag.us/>

Additional Resources

You can find additional information about private wells at the following links:

The EPA publication, *Drinking Water from Household Wells*, answers questions about drinking water from household wells, lists activities that may affect your water supply, describes problems to look for, and provides maintenance recommendations;
www.epa.gov/safewater/privatewells/pdfs/household_wells.pdf.

Wellowner.org provides consumer information about ground water and private wells at www.wellowner.org.

NSF International, a not-for-profit organization, develops standards, product testing procedures, and certification services for products including water treatment devices. Call 1-877-867-3435 or visit its web site at www.nsfconsumer.org.

Contact Information

Idaho District health offices

- District 1 Coeur d'Alene office, 208- 415-5100
www2.state.id.us/phd1/
(serving Benewah, Bonner, Boundary, Kootenai and Shoshone counties)
- District 2 Lewiston office, 208-799-3100
www2.state.id.us/phd2/
(serving Clearwater, Idaho, Latah, Lewis and Nez Perce counties)

- District 3 Caldwell office, 208- 455-5300,
www.publichealthidaho.com
(serving Adams, Canyon, Gem, Owyhee, Payette and Washington counties)
- District 4 Boise office, 208-375-5211
www.phd4.state.id.us/
(serving Ada, Boise, Elmore and Valley counties)
- District 5 Twin Falls office, 208-734-5900
www.state.id.us/phd5/
(serving Blaine, Camas, Cassia, Gooding, Jerome, Lincoln, Minidoka and Twin Falls counties)
- District 6 Pocatello office, 208-233-9080
www2.state.id.us/phd6/
(serving Bannock, Bear Lake, Bingham, Caribou, Franklin, Oneida and Power counties)
- District 7 Idaho Falls office, 208-522-0310
www2.state.id.us/phd7/
(serving Bonneville, Butte, Clark, Custer, Fremont, Jefferson, Lemhi, Madison and Teton counties)

Idaho Department of Environmental Quality offices

- State office, Boise, 208-373-0502, www.deq.idaho.gov/
- Coeur d'Alene regional office, 208-769-1422
(serving Benewah, Bonner, Boundary, Kootenai and Shoshone counties)
- Lewiston regional office, 208-799-4370 or toll free, 1-877-541-3304
(serving Clearwater, Idaho, Latah, Lewis and Nez Perce counties)
- Boise regional office, 208-373-0550
(serving Ada, Adams, Boise, Canyon, Elmore, Gem, Owyhee, Payette, Valley and Washington counties)
- Twin Falls regional office, 208-736-2190
(serving Blaine, Camas, Cassia, Gooding, Jerome, Lincoln, Minidoka and Twin Falls counties)
- Pocatello regional office, 208-236-6160
(serving Bannock, Bear Lake, Bingham, Caribou, Franklin, Oneida and Power counties)
- Idaho Falls regional office, 208-528-2650
(serving Bonneville, Butte, Clark, Custer, Fremont, Jefferson, Lemhi, Madison and Teton counties)

Idaho Department of Water Resources

- Ground water Protection Section, Boise office: 208-327-7900
www.idwr.idaho.gov/
- Northern Region, Coeur d'Alene office: 208-769-1450
Eastern Region, Idaho Falls office: 208-525-7161
Southern Region, Twin Falls office: 208-736-3033
Western Region, Boise office: 208-334-2190

Idaho State Department of Agriculture

- Water Program, Boise office: 208-332-8500
www.idahoag.us/

Idaho Department of Health and Welfare

- Bureau of Community and Environmental Health,
1-208-334-6584, Toll Free 1-866-240-3553



Environmental Health Education and Assessment Program

Bureau of Community and Environmental Health
Division of Health

Idaho Private Well Owner Brochure

What are the responsibilities of owning a private well?



Your drinking water is delivered to your faucet either through a public water system or from a private well or spring. Both public and private water systems tap into ground water and surface water sources through wells, springs, and intakes from streams or rivers.

In order to protect their consumers, public water suppliers are required by law to test their drinking water regularly and make these tests results available to the public. Unlike public water supplies, these drinking water regulations do not apply to private wells. As a private well owner, it is your responsibility alone to make sure that your water is safe to drink.

Private wells can provide a clean, safe source of drinking water if they are properly located, constructed and maintained. However, natural and man-made contaminants can get into ground water and into your drinking water. At high enough levels, these contaminants can put your family and animals' health at risk.

If you own your own well, you should periodically test your water, make sure your well system is in good working order, and know how to protect your wellhead. By following the advice in this brochure, you can help insure that your well remains a safe source of drinking water for you and your family.



This brochure contains information to help you find answers to questions about drinking water testing, well construction and maintenance, and basic wellhead protection.

What drinking water contaminants should I be concerned about?

If you find a contaminant in your drinking water, it does not always mean that your water is unhealthy to drink. Some contaminants can occur at low levels and not cause health problems. However, the higher the concentration of a contaminant in your water, the greater the chance it may make you sick.



The Environmental Protection Agency (EPA) has set drinking water regulations for public water supplies to protect public health. Although these regulations do not apply to private wells, they can be used as guides to help you determine if your water is safe to drink.

For a list of drinking water contaminants, potential health effects, and sources of drinking water contaminants contact the EPA safe drinking water hotline toll-free at 1-800-426-4791, or visit www.epa.gov/safewater/mcl.html#mcls.

What are some contaminants found in Idaho ground water?

Idaho ground water may contain infectious microorganisms (such as

harmful bacteria and viruses), nitrates, arsenic, lead, fluoride and organic compounds including oil products, solvents and pesticides. Depending on where your well is located, the depth and condition of your well, and possible contaminant sources, you may want to test for one, some or all of these contaminants.

It is important to realize that the shallower the well, the more vulnerable it may be to contaminants from septic systems, agriculture, industry and other human activities.

Before testing your drinking water, find out what types of contaminants are a concern in your area for your water system.

You can find out about arsenic and nitrates in Idaho ground water and view county ground water reports online at the Idaho Department of Environmental Quality (IDEQ) website, www.deq.idaho.gov/water/prog_issues.cfm#ground, or call your regional IDEQ office listed on the back page of this brochure.

If you have water quality questions regarding pesticides, fertilizers, animal waste and other potential agricultural contaminants, contact the Idaho State Department of Agriculture (ISDA) Water Quality Program at 208-332-8500 or visit their website at www.idahoag.us/Categories/Environment/water/indexwater.php.

When should I test my drinking water?

It is generally a good idea to test well water annually, before purchasing a home, or after installing a new well. You may also want to test if your water is cloudy, has a

strange color, odor, taste, or appearance, or if you have recently repaired or had a problem with your home's plumbing, connections, or treatment system.

The Idaho Department of Health and Welfare's Bureau of Community and Environmental Health (BCEH) also can provide you with a private well water testing schedule and a guide for

troubleshooting well water problems. Contact BCEH at 866-240-3553.

If your water has a funny taste, appearance or smell, you can identify the cause by using the interactive database, "Diagnose Your Drinking Water" at the Water Quality Association's website, www.wqa.org (click on "Diagnose Your Drinking Water" listed under "Consumer's Corner" on the site's front page).

This database will help you narrow down causes of drinking water problems by choosing from a list of water symptoms. Once narrowed down, you can also find potential treatments and solutions. To request more information, contact the association by phone, 630-505-0160, or by email, info@wqa.org.



How do I get my drinking water tested?

Once you have decided to test your drinking water, talk to an environmental health specialist at your local health district. These professionals can help you figure out what tests you may want to have done. They can also instruct you on how, when and where to collect your water sample and where to get the appropriate sample bottles.

You should have your water tested at a certified analytical lab. Lab staff can also answer questions about how to collect your water sample.

For a list of certified drinking water analyses labs in your area contact your regional IDEQ office. You can also find a list of labs at: www.deq.idaho.gov/water/assist_business/pws/labs_certified.xls.

What should I do if a test result comes back positive?

As mentioned before, the presence of a contaminant is not always a sign of a health hazard. However, if your well water tests positive for a contaminant, discuss your test results with an environmental

health specialist at your local health district. These professionals can help you determine if you and your family's health is at risk.

If your drinking water tests positive for a contaminant at levels that may harm your health, fix the problem as soon as possible. You may need to disinfect your well, repair your system, find an alternative drinking water source, or install a water treatment device to remove contaminants.

There are many different treatment devices available. Different types remove different contaminants. There is no one device that does it all. It is important to research possible treatment devices carefully to find the best solution for your problem. You must also maintain your water treatment device once it is installed so that it works properly to keep your drinking water safe.

For additional information about drinking water contaminants, testing, and treatment systems contact the National Sanitation Foundation (NSF) Consumer Affairs Office. Call NSF toll-free at 1-877-867-3435 or visit www.nsf.org/consumer/drinking_water/index.asp. You can also search treatment device product listings online at: www.nsf.org/certified/dwtu/.

The Water Systems Council provides information sheets on drinking water testing, treatment, and maintenance for private wells online at www.wellcarehotline.org/wellcare/infosheets.cfm, or you can speak with a technician by calling the well care hotline toll-free at 1-888-395-1033.



To request a free pamphlet about home water treatment units, contact the EPA safe drinking water hotline at 1-800-426-4791.

What do I need to know about well construction and maintenance?



Proper well design, construction and maintenance can reduce the chance that contaminants will get into your well water. To insure proper well construction when installing a well, current Idaho law requires all well drillers to be licensed. Some older wells drilled prior to this ruling may not be constructed to current standards and may need to be updated.

Annual well maintenance is also essential to keep your drinking water safe. Well owners are encouraged to perform an annual water test, periodically check to make sure their well is functioning properly, and repair their system as needed.

For information on well construction, to request a list of licensed well drillers, or to contact a well drilling specialist call the Idaho Department of Water Resources (IDWR) at 208-327-7900 or visit their website at www.idwr.idaho.gov/water/well/default.htm.

You can also search for information (including well location, ownership, construction details and underlying strata) about a preexisting well on the IDWR well information search page, www.idwr.idaho.gov/water/well/search.htm. Information on older wells may not be available online. However, many older reports are maintained in microfilm files. If you cannot find a well report online, contact your regional IDWR office listed on the back page of this brochure.

The Idaho Home*A*Syst project provides in-depth information on proper well location, construction, and maintenance and can help you identify homestead activities that may affect your drinking water.

HEALTH DEPARTMENT CONTACT INFORMATION

Coeur d'Alene 415-5200
www2.state.id.us/phd1
(serving Benewah, Bonner, Boundary, Kootenai and Shoshone counties)

Lewiston 799-3100
www.ncdhd.us/
(serving Clearwater, Idaho, Latah, Lewis, and Nez Perce counties)

Caldwell 459-0744
www.publichealthidaho.com/
(serving Adams, Canyon, Gem, Owyhee, Payette and Washington counties)

Boise 375-5211
www.cdhd.idaho.gov/
(serving Ada, Boise, Elmore and Valley counties)

Twin Falls 734-5900
www.phd5.idaho.gov/
(serving Blaine, Camas, Cassia, Gooding, Jerome, Lincoln, Minidoka, and Twin Falls counties)

Pocatello 233-9080
www.sdhdidaho.org/
(serving Bannock, Bear Lake, Bingham, Caribou, Franklin, Oneida, and Power counties)

Idaho Falls 522-0310
www.idaho.gov/phd7
(serving Bonneville, Butte, Clark, Custer, Fremont, Jefferson, Lemhi, Madison, and Teton counties)

IDAHO DEPARTMENT OF HEALTH AND WELFARE

Bureau of Community and Environmental Health
1-866-240-3553
bceh@dhw.idaho.gov



IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY OFFICES

State office, Boise, 373-0502, www.deq.idaho.gov/

Coeur d'Alene regional office, 769-1422
(serving Benewah, Bonner, Boundary, Kootenai, and Shoshone counties)

Lewiston regional office, 799-4370
(serving Clearwater, Idaho, Latah, Lewis, and Nez Perce counties)

Boise regional office, 373-0550
(serving Ada, Adams, Boise, Canyon, Elmore, Gem, Owyhee, Payette, Valley, and Washington counties)

Twin Falls regional office, 736-2190
(serving Blaine, Camas, Cassia, Gooding, Jerome, Lincoln, Minidoka, and Twin Falls counties)

Pocatello regional office, 236-6160
(serving Bannock, Bear Lake, Bingham, Caribou, Franklin, Oneida, and Power counties)

Idaho Falls regional office, 528-2650
(serving Bonneville, Butte, Clark, Custer, Fremont, Jefferson, Lemhi, Madison and Teton counties)

IDAHO DEPARTMENT OF WATER RESOURCES

Ground Water Protection Section, Boise: 287-4800
www.idwr.idaho.gov

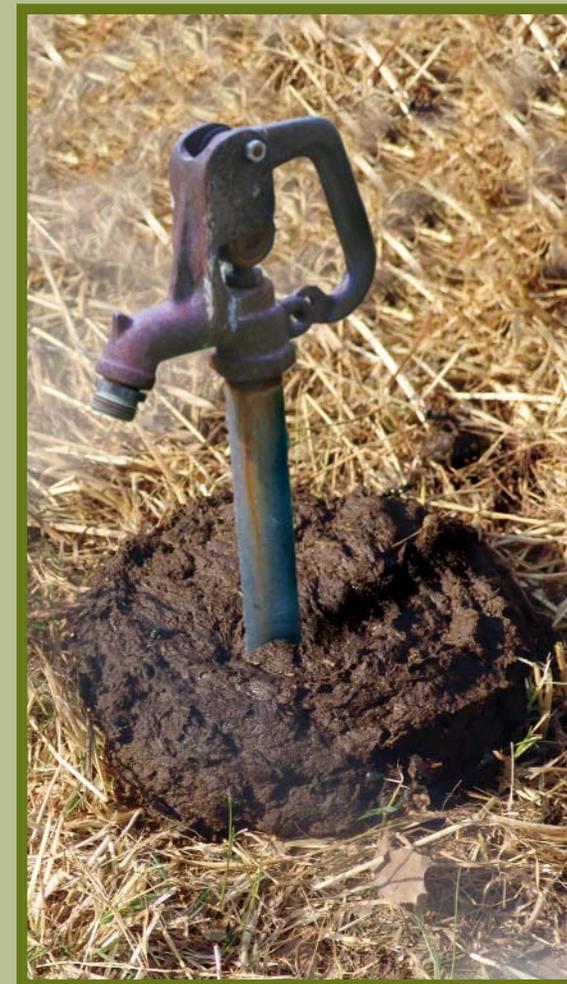
Northern Region, Coeur d'Alene: 769-1450
Eastern Region, Idaho Falls: 525-7161
Southern Region, Twin Falls: 736-3033
Western Region, Boise: 334-2190

IDAHO DEPARTMENT OF AGRICULTURE

Water Program
Boise Office 332-8597
www.agri.idaho.gov

Some text supplied by the U.S. Environmental Protection Agency Web site.

IT WILL NEVER BE THIS OBVIOUS



FOUR STEPS TO WELL WATER SAFETY

Private wells can provide a clean, safe source of water if they are properly located, built, and maintained. The location and installation of a well is crucial to protecting water from contamination. Because many factors determine the best place to locate a well, it is recommended that a certified well water driller perform the job.

To find certified local water-well contractors in your area, call the national Ground Water Association at 800-551-7379 or visit their website at www.ngwa.org.

1 HAVE YOUR WATER TESTED

As a private well owner, it is your responsibility to make sure that your water is safe to use. Pollution from sources such as septic systems, farm animals, farm chemicals and naturally occurring chemicals can contaminate your well. At high levels, pollution in your well water can put your family's and animals' health at risk. If you have any question about the safety of your well water, you should have your well water tested.

You can have your well water tested at a certified lab. Lab staff will tell you when and how to collect your water sample. For a list of labs, contact your regional Idaho Department of Environmental Quality office (numbers are on back of this brochure).

2 UNDERSTAND THE RESULTS OF THE TESTING

Once you have had your well water tested and received the results, you will need to understand the results. Many times the lab that does the testing will explain if your well water poses any health concerns. If you still have questions after speaking to the lab, you can contact your local health department who should be able to help you interpret well testing results and assist you with any additional questions you may have (local health department numbers are on back of this brochure).

3 FIX ANY PROBLEMS

If you learn your well water is polluted, fix the problem as soon as possible. You may need to disinfect your water, have a new well drilled, replumb or repair your system. Consult a certified well water driller for help. You might consider installing a water treatment device to remove pollutants. There are many home water treatment devices. Different types remove different pollutants. No one device does it all. Get a copy of the Environmental Protection Agency's "Home Water Treatment Units" pamphlet by calling (800) 426-4791.

4 MAINTAIN YOUR WELL

Annual well maintenance is essential to keep your water safe. Well owners are encouraged to perform an annual water test, periodically check to make sure their well is functioning properly, and repair their system as soon as a problem is discovered. Proper well maintenance should include checking the well covering, casing, and well cap for cracks and other entry points for potential pollutants. Every 10 years have the pump, storage tank, pipes and valves, and water flow inspected by a certified well water driller. When the well is no longer in use, make sure to properly close the old well to help prevent the contamination of the water table.

To help keep track of maintenance, it is recommended that you create and maintain a "well maintenance log." The log should include the location of the well, construction and contractor details, as well as results of any water tests.



Labs Certified for Drinking Water Analyses

The following laboratories are certified in Idaho to perform drinking water analyses as of July 2009. Not all laboratories analyze for, or are certified for, all of the required bacterial, chemical, or radiological contaminants required by the Safe Drinking Water Act. It is the responsibility of the customer to contact the laboratory regarding certification. This information is provided as a courtesy and Idaho DEQ is not responsible for any errors in the following list or the quality of any laboratory. This list may not include all of the laboratories certified in Idaho to perform drinking water analysis.

Idaho Laboratories

Laboratory Name	Address	City	State	Zip	Phone No
Accurate Testing Labs	7950 Meadowlark Way	Coeur d' Alene	ID	83814	(208) 762-8378
Alchem Laboratories, Inc.	104 W. 31st St.	Boise	ID	83714	(208) 336-1172 or 1-800-474-1172
Analytical Laboratories, Inc.	1804 N. 33rd Street	Boise	ID	83703	(208) 342-5515
Anatek Labs, Idaho	1282 Alturas Drive	Moscow	ID	83843	(208) 883-2839
I.A.S. EnviroChem	3314 Pole Line Road	Pocatello	ID	83201	(208) 237-3300
Idaho Bureau of Labs	2220 Old Penitentiary Rd	Boise	ID	83712	(208) 334-2235
Magic Valley Labs, Pocatello	1448 East Center Street, Suite H	Pocatello	ID	83201	(208) 478-1855
Magic Valley Labs, Twin Falls	210 Addison Avenue	Twin Falls	ID	83301	(208) 733-4250
Pathologists' Regional Laboratory	Mail: P.O. Box 956 Shipping: 415 6th St.	Lewiston	ID	83501	(208) 746-0516
Steele Memorial Hospital Lab	P.O. Box 700 Shipping: 203 South Daisy	Salmon	ID	83467	(208) 756-4291
SVL Analytical, Microbiology Branch	2195 Ironwood Court	Coeur d' Alene	ID	83814	(208) 665-5666
SVL Analytical	One Government Gulch	Kellogg	ID	83837	(208) 784-1258
Teton Microbiology Laboratory, Inc	258 N. Water Ave, Ste 2	Idaho Falls	ID	83712	(208) 529-0077

Out of State Laboratories-Certified through Reciprocity

Laboratory Name	Address	City	State	Zip	Phone No
ALS Laboratory Group (formerly DataChem)	4388 Glendale-Milford Road	Cincinnati	OH	45242	(513) 733-5336
ALS Laboratory Group (formerly Paragon)	225 Commerce Dr.	Fort Collins	CO	80524	(970) 490-1511
Accutest Mountain States (formerly Evergreen)	4036 Youngfield St.	Wheat Ridge	CO	80033-3862	(877) 737-4521
Alpha Analytical	255 Glendale Ave., Ste. 21	Sparks	NV	89431	(800) 283-1183
American West Analytical	463 West 3600 South	Salt Lake City	UT	84115	(801) 263-8686
Anatek Labs (Spokane)	504 East Sprague Ave, Ste D	Spokane	WA	99202	(509) 838-3999
Benchmark Analytics	4777 Sawcon Creek Road	Center Valley	PA	18034	(610) 974-8100
Columbia Analytical Services	P.O. Box 479	Kelso	WA	98626	(360) 577-7222
EMSL Analytical (Westmont)	107 Haddon Avenue	Westmont	NJ	08108	(856) 858-4800
EMSL Analytical (San Leandro)	2235 Polvorosa Ave, Ste 230	San Leandro	CA	94577	(888) 455-3675
Energy Laboratories, Inc. (Billings)	P.O. Box 30916	Billings	MT	59107-0916	(800) 735-4489
Energy Laboratories, Inc. (Casper)	2393 Salt Creek Highway, P.O. Box 3258	Casper	WY	82602	(888) 235-0515
Energy Laboratories, Inc. (Helena)	3161 East Lyndale Ave/ P.O. Box 5688	Helena	MT	59601	(877) 472-0711

Labs Certified for Drinking Water Analyses

Out of State Laboratories-Certified through Reciprocity

Laboratory Name	Address	City	State	Zip	Phone No
Environmental Science Corporation	12065 Lebanon Road	Mt. Juliet	TN	37122	(615) 758-5858
General Engineering Laboratories	P.O. Box 30712	Charleston	SC	29417	(843) 556-8171
Inter-Mountain Laboratories, Inc.	1633 Terra Ave.	Sheridan	WY	82801	(307) 672-8945
Lab Cor, Inc	7619 6th Avenue	Seattle	WA	98117	(206) 781-0155
MWH Laboratories	750 Royal Oaks Drive, Ste 100	Monrovia	CA	91016	(626) 386-1100
National Testing Laboratory	556 S. Mansfield St.	Ypsilanti	MI	48197	(734) 483-8333
Pace Analytical Services, Inc. (Greensburg)	1638 Roseytown Rd, Ste 2,3, & 4	Greensburg	PA	15601	(724) 850-5600
Pace Analytical Services, Inc. (Minneapolis)	1700 Elm St SE	Minneapolis	MN	55414	(612)607-1700
Pace Analytical Services, Inc. (Billings)	P.O. Box 30315	Billings	MT	59107	(406) 254-7226
Test America (Bothell) aka North Creek Analytical	11720 North Creek Parkway N., Ste 400	Bothell	WA	98011	(425) 420-9200
Test America (Denver)	4955 Yarrow St.	Arvada	CO	80002	(303) 736-0100
Underwriters Laboratories	110 South Hill St.	South Bend	IN	46617-2702	(574) 233-4777

Don'ts

- ◆ Do not use your septic system like a garbage can. Do not flush materials that can clog your septic system, such as diapers, cat litter, cigarette filters, coffee grounds, feminine hygiene products, cotton swabs, dental floss, and paper towels.
- ◆ The use of septic tank additives, commercial septic tank cleaners, yeast, sugar, etc., are discouraged. These products are not necessary, and some may be harmful to your system.
- ◆ Do not use caustic drain openers for a clogged drain. Instead, use boiling water or a drain snake to open clogs.
- ◆ Do not flood the drainfield with excess irrigation water.
- ◆ Do not drive or park over any part of your septic system. This can compact the soil and crush your system.
- ◆ Do not pour toxic chemicals down the drain. Household chemicals, paints, gasoline, and pesticides, can harm or kill the bacteria that digest and treat waste.
- ◆ Do not dump grease or fats down your kitchen drain. They can solidify, and their accumulation may contribute to blockage.
- ◆ Do not dispose of medicines, such as antibiotics, in the toilet or sinks; medicines may kill the helpful bacteria in the septic tank.

For more
information contact
Environmental Health
Services at
208.455.5400 or
www.swdh.org

You can access additional information for the following locations:

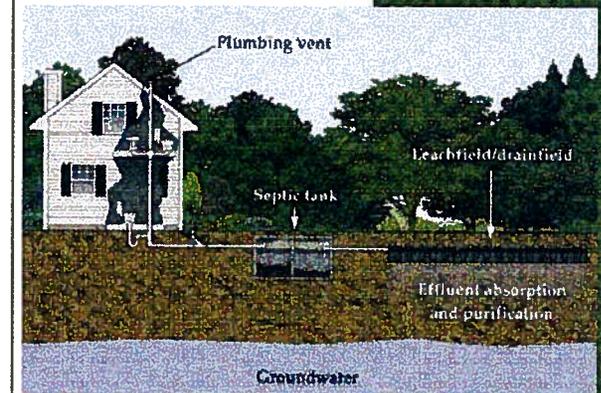
Idaho Department of Environmental Quality
http://www.deq.idaho.gov/water/assist_business/septic/tech_manual_updates.cfm

Environmental Protection Agency
<http://cfpub.epa.gov/owm/septic/index.cfm>



*In-house brochure created March 2009
Division of Environmental Health*

Maintaining Your Septic System: The Do's and Don'ts



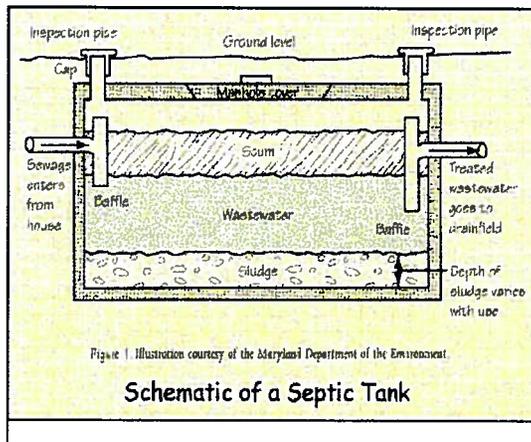
Southwest District Health

Introduction

A typical septic system has two components: a septic tank and a drainfield. The purpose of this brochure is to provide the average homeowner some insight on how their system works; but more importantly, what to do and what not to do in order to keep a well maintained subsurface sewage disposal system, to the benefit of both the homeowner and the environment.

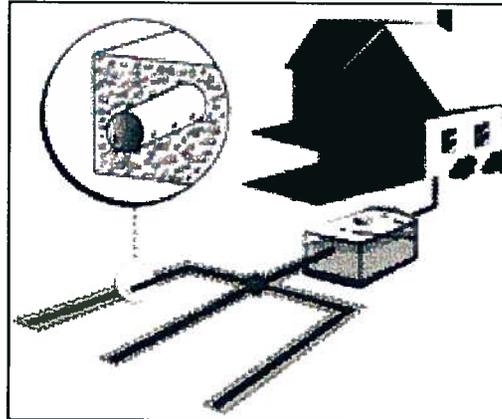
Septic Tanks

The septic tank's primary purpose is to separate the solids from the liquids and to promote partial breakdown of contaminants by microorganisms naturally present in wastewater. The solids, known as sludge, collect on the bottom of the tank, while the scum floats to the top of the liquid. The treated wastewater (effluent) exits through the outlet baffle and goes to the drainfield.



Drainfields

The drainfield contains a series of underground perforated pipes. The wastewater is distributed from the septic tank through the perforated pipes, exits through the holes in the pipes, and trickles through the drain rock where it is stored until absorbed by the soil. The soil acts as a natural buffer to filter out many of the harmful bacteria, viruses, and excessive nutrients, effectively treating the wastewater before it reaches groundwater.



Do's

- ✓ Have your septic system inspected by a qualified professional at least every three years.
- ✓ Have the tank pumped when needed. EPA recommends pumping a 1000 gallon septic tank once every 3.7 years with households of three people, and once every 1.5 years with households of six people.
- ✓ Keep records of pumping, inspections, permits, and other maintenance.
- ✓ Use water efficiently to avoid overloading your septic system. Fix leaky faucets or toilets.
- ✓ Consider replacing older toilets and inefficient showerheads with more efficient models.
- ✓ Use proper load sizes when washing clothes. Try to avoid doing all the laundry in one day. This will help prevent flow surges from pushing solids into the drainfield.
- ✓ Add an effluent filter. An effluent filter, placed in the septic tank outlet baffle or tee, prevents excess solids from flowing into and clogging the drainfield.
- ✓ Plant only grass over your septic system. Roots from nearby trees or shrubs may clog and damage the drainfield.
- ✓ Minimize or eliminate the use of garbage disposals and water softeners. The increased demand can be detrimental to your system, biologically and chemically.
- ✓ Obtain a copy of your septic permit from your local health district. Learn the location of your septic system. Keep a sketch of it handy with your maintenance records for service visits.
- ✓ Conserve your replacement area. Each drainfield, when permitted, has a location where it can be replaced. Building on or too close to the installed system or replacement area can be detrimental.

Many citizens don't know what the words "public health" really mean. Most people think public health is only for the poor. While we do attend to the health needs of low-income families, we also provide many other services to citizens living in our six-county area. Below are a few of the programs offered at Southwest District Health:

Public Water Supply: Monitor and provide guidance to small public drinking water systems to maintain safe drinking water for their customers. Contact: 455-5400

Private Drinking Water Supply: Provides guidance and technical assistance to private well owners. Contact: 455-5400

Vector and Rodent Control: Provide guidance in controlling vectors (mosquitoes, ticks) and rodent infestations that could prevent the spread of disease causing organisms. Contact: 455-5400

Recreational Premises: Inspect public swimming pools for safety and sanitation. Contact: 455-5400

Sewage Disposal: Ensures that septic tanks and other on-site sewage disposal systems are properly permitted, installed, and operated to prevent the spread of disease. Contact: 455-5400

Individual & Community Land Development: Monitors, evaluates, and enforces regulations on land being developed in Southwestern Idaho. Contact: 455-5400

For more information on nitrate in water systems please contact the
**Public Water Coordinator at
Southwest District Health
(208) 455-5400**



SOUTHWEST
DISTRICT HEALTH
920 MAIN STREET
CALDWELL, ID 83605

Southwest District Health serves the residents living in Adams, Canyon, Gem, Owyhee, Payette and Washington Counties.

Nitrate in Drinking Water

Is your water safe? Nearly 95% of Idaho's population depends on groundwater for their drinking source. Protecting groundwater from contamination by any substance that might cause health problems is a serious concern. Two potential groundwater contaminants are nitrate and nitrite.

How Are You and Your Family Exposed To Nitrate/Nitrite

Elevated nitrate levels in drinking water are often caused by animal waste run-off from dairies and feedlots, excessive use of fertilizers, or seepage from private septic systems. Due to the nitrification process, nitrates are predominantly found more in drinking water than nitrite. However, partial conversion of nitrates to nitrites in humans takes place in saliva of all ages, and in the stomach and intestines in infants.

How Does Nitrite Affect You

Nitrite in the body causes the hemoglobin in the blood to change to methemoglobin. Methemoglobin reduces the amount of oxygen that can be carried in the blood. This results in cells throughout the body being deprived of sufficient oxygen to function properly. This condition is called methemoglobinemia, or in infants "blue baby syndrome."

Infants and Blue Baby Syndrome

Infants, particularly those under six months of age, are most at risk of developing serious health problems from elevated levels of nitrate or nitrite. Infants have relatively low acidity in their stomachs compared to adults.

This allows for the growth of certain bacteria that readily convert nitrate to nitrite. Nitrite causes Blue Baby Syndrome in infants because of the lack of oxygen in the blood. This lack of oxygen causes the baby's skin to turn a bluish color, particularly around the eyes and mouth. If untreated, infants may die from this condition.

Nitrate/Nitrite and Private Wells

Public water systems must maintain a rigorous water quality testing schedule to ensure they conform to national drinking water standards. There are no testing requirements for private wells, so it is especially critical that you have your private well water tested if you have an infant, or someone in your household who is planning to become pregnant. It is recommended you test your water at least once a year. Southwest District Health will be able to refer you to a certified laboratory that can test your water for nitrate and nitrite for a nominal fee. Southwest District Health also has information about the typical levels of nitrate/nitrite that may exist in the groundwater in the area where you live.

What Do Test Results Mean

Southwest District Health has certified Environmental Health Specialists that will help clarify test results if you have questions or concerns.

How Much Nitrate/Nitrite Is Allowed In Drinking Water

The federal and state governments have set standards for public drinking water at 10 Milligrams Per Liter (mg/L) for nitrate (NO₃-N), and 1mg/L for nitrite (NO₂-N). These standards, called Maximum Contaminant Levels (MCLs), define levels of contamination that are allowed in public drinking

water without causing harmful health effects. Long-term exposure to low levels of nitrate in drinking water is still not fully understood.

Is Your Water Safe

One water sample may not take into account fluctuations in nitrate/nitrite concentrations over time. Therefore, to be safe, especially infants and pregnant women may wish to avoid drinking tap water if the levels of nitrate and nitrite are close to the MCL.

What Can I Do

If levels of nitrate or nitrite are above the MCL, you have several options: Use bottled water for drinking and cooking, and limit well water usage to bathing and showering. Consider treatment methods either at the wellhead or the tap. Mechanical filters, chemical disinfectants, or boiling do not remove nitrates. Nitrates/nitrites may successfully be removed from water using a treatment process such as Reverse Osmosis, ion exchange, and distillation. These treatment techniques require careful maintenance and sampling to achieve effective operation. If a treatment system is to be used, one with National Sanitation Foundation certification should be selected.

Does Nitrate Cause Cancer

There is no evidence that nitrate or nitrite causes cancer in laboratory animals or humans. Studies have shown that diets lacking dietary fiber, and foods with high levels of nitrate and nitrite, such as smoked meats, may promote stomach cancers. However, studies have not indicated that drinking water high in nitrate is associated with stomach cancer.

Why use OnePlan?

Meeting the changing demands for sustainable agriculture has never been more complicated. It can be difficult to keep up with federal, state, and local laws and rules—and it can be tough to understand how they apply to your farm or ranch. OnePlan has made the process easier by integrating applicable local laws and rules.

Not only does OnePlan make it simple to comply with applicable regulations, but what once took weeks of survey, calculation and paperwork can now be easily accomplished in hours.

Now *anyone* can create a basic conservation plan. Use OnePlan to incorporate your goals and objectives and when your plan is approved, you may also apply for financial assistance to help you meet new conservation goals, all from the comfort of your home or office.

How to Learn More

To find out more about OnePlan and how it can benefit you—contact Wayne Newbill, Idaho OnePlan Coordinator, at 208-338-4321 or via email at

Wayne.Newbill@agri.idaho.gov

You can also go online and check OnePlan out for your self at www.conservation-planner.org - or www.OnePlan.org

Other Resources

Natural Resources Conservation Service (NRCS) Boise Office: 208-378-5700

Idaho Soil Conservation Commission (ISCC) Boise Office: 208-332-8650

Idaho Association of Soil Conservation Districts (IASCD) Boise Office: 208-338-5900

Department of Environmental Quality (DEQ) Boise Office: (208) 373-0550

Idaho Department of Water Resources (IDWR) Boise Office: (208) 287-6700

Idaho State Department of Agriculture (ISDA) Boise Office: (208) 332-8500



**One Plan.
For your place.
On your time.**

Idaho OnePlan Coordinator
Wayne Newbill
208-338-4321

www.OnePlan.org

What is OnePlan?

OnePlan is an easily accessible, user-friendly suite of tools for farmers, ranchers, professional planners, and Technical Service Providers. OnePlan assists in the management of soil and water conservation activities according to guidelines and regulations as defined by local, state, and federal agencies.

The OnePlan Conservation Planner and Nutrient Management Planner interfaces with GIS data online, allowing users to:

- Map fields, buildings and corrals
- Describe crop rotation and irrigation practices
- Enter soil testing data
- Identify vulnerable resource areas
- Evaluate and size animal waste containment facilities
- Calculate nutrient content of manure
- Determine and schedule animal waste and/or commercial fertilizer application rates

As part of the total OnePlan package, additional components, such as a Pest Management Planning module and Range Management component are under development.

Many conservation plans require comprehensive nutrient management and/or pest management plans, making the Nutrient Management Planner an essential element

of the OnePlan interface. Equally important is a feature which is designed to help farmers create basic conservation plans that address applicable local, state and federal environmental conservation requirements.

Conservation Planner

A Conservation Plan is a comprehensive plan for your entire farming or ranching operation that identifies resource problems and conservation solutions.

Conservation plans provide a road map of resource development opportunities over the next five- to ten-year period. Using a conservation plan reduces the possibility of making short-term decisions that may conflict with your long-term goals.

It is important to know that conservation plans aren't required. In fact, all participation in the OnePlan is strictly voluntary. But as farmers and ranchers who have already taken advantage of OnePlan's time-saving planning tools can tell you, there are valuable benefits.

When a landowner completes the conservation planning process, their plan includes a complete inventory of

natural resource assets and concerns related to their property. For this reason, many conservation projects proposed on land with an existing conservation plan are ranked much higher when evaluated for cost-share, grant, and low-interest conservation loan program benefits.

Nutrient Management Planner

The OnePlan Nutrient Management component (NMP) helps farmers and planners prepare nutrient management plans. NMP is already assisting dairy farmers as they face the rigorous demands of new dairy regulations. Operators of AFOs and CAFOs can also find help meeting new EPA requirements.

Benefits of the Nutrient Management Planner:

- Nutrient management plan certifiable by the Idaho State Dept. of Agriculture
- Optimized crop production
- Minimized ground and surface water impacts with long-term sustainability.

Self Installation Check List for Homeowners

Required Inspection

- ☞ Test hole/site evaluation
- ☞ Trench inspection (trenches excavated, no gravel or pipe in trench, just the bare trench)
- ☞ Final inspection (everything is done but system is not covered)

Set Backs

- ☞ Drain field 50 feet from all temporary surface water (irrigation ditches, canals, etc.)
- ☞ Drain field 100, 200 or 300 feet from surface water*
- ☞ Drain field 100 feet from well
- ☞ Drain field 10 feet from foundation or 20 feet from basement
- ☞ Septic tank 50 feet from well
- ☞ Septic tank 50 feet from permanent surface water
- ☞ Septic tank 5 feet from foundation
- ☞ Septic tank and drain field 6 feet apart
- ☞ Drain field 5 feet from property line
- ☞ Designated replacement area for drain field that can also meet the above setbacks

*Class A soils = 300 feet, Class B soils = 200 feet, Class C soils = 100 feet.

Construction Components

- ☞ Trenches no more than 6 feet wide and no longer than 100 feet long
- ☞ At least 6 feet of undisturbed ground between trenches
- ☞ Trenches no deeper than 4 feet deep or as indicated on permit/engineering report

- ☞ If using standard trench system, 6 inches of washed gravel under pipe and 2 inches of washed gravel on top of pipe (total of 12 inches of gravel: 6 inches under pipe + 4 inches of pipe + 2 inches on top of pipe = 12 inches of gravel)
- ☞ Geotextile fabric, straw or non-treated building paper (must cover drain field entirely).

Note: The above is only a brief description of the requirements of an underground disposal system, and is in no way a complete or comprehensive summary of the Technical Guidance Manual (TGM). All rules and regulations and other sections of the TGM must be met in order for approval of system to be given

For more
information contact
Environmental Health
Services at
208.455.5400 or
www.swdh.org



**Southwest
District Health**
920 Main Street
Caldwell, ID 83605

*In-house brochure created December 2006
Division of Environmental Health*



**Subsurface Sewage
Disposal System
Application and
Permitting Process**

Southwest District Health

Applying for a Septic Permit at Southwest District Health

The following information is intended to aid applicants by providing information on how to successfully apply for a septic permit, obtain a permit, and meet installation requirements.

Application Requirements

- Obtain a septic permit application either on-line or at any Southwest District Health (SWDH) office.
- Applications must be complete and include a zoning certificate, parcel number, and a detailed plot plan (see example to the right).
- The appropriate fees must be submitted at this time.

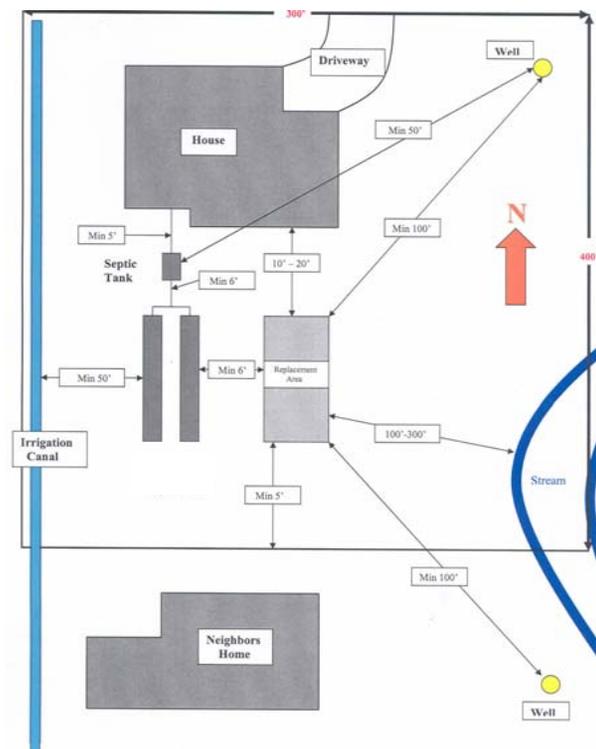
Test Hole Requirements

- Schedule a test hole with the Environmental Health Specialist (EHS) at least 48 hours prior.
- Applicant and/or installer MUST be on site during the site evaluation.

- Test holes must be excavated while the EHS is present.
- The drain field must be placed within 50 feet of the test hole.
- Permit will be issued or denied within three (3) working days.
- Permits can be picked up, mailed, or sent via facsimile.

Note: Southwest District Health may require soil analysis, groundwater monitoring, trench inspections, engineering or maintenance agreements for complex alternative systems, or as specified on any particular lot where appropriate.

PLOT PLAN



Final Inspection Requirements

- All subsurface sewage disposal systems must be inspected prior to covering (prior 48 hour notification is required).
- Installers MUST be on site during the final inspection(s).
- Gravel/sand receipts may be requested. A list of approved gravel products may be obtained through SWDH.
- Systems where construction is not completely finished, installer not present, etc., will not be finalized, and must remain uncovered until finalized.



Note: Additional inspections may be required for complex alternative systems or on standard systems when required by EHS staff.

Nampa.....465-8402
Caldwell.....455-5400
Payette.....642-9321
Emmett.....365-6371
Weiser.....549-2370

16. IDAHO ENVIRONMENTAL GUIDE: A Resource For Local Governments

The Idaho Environmental Guide is a resource for local government officials to assist in managing a community's environmental responsibilities. Local government officials should consult this guide before approving projects to understand the impacts to air, water, and/or land that could affect the health, welfare, and sustainability of communities within their jurisdiction. The Idaho Environmental Guide is informational and is meant to be applied to environmental issues for strategic planning. This guide is not an all-encompassing summary of state and federal rules and regulations. The Idaho Environmental Guide can be accessed through the DEQ Web site at <http://www.deq.idaho.gov/ieg/introduction/index.cfm>.

Idaho Environmental Guide

**A Resource for Local
Governments**

**Idaho Department of
Environmental Quality**
Updated January 2010



Cover photo: Sawtooth Mountain Lake, Paul Frantellizzi, courtesy Idaho Division of Tourism Development.

The *Idaho Environmental Guide* is updated annually. Log on to www.deq.idaho.gov/ieg for the most current version.

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CHAPTER 1. INTRODUCTION

About This Guide

The Idaho Environmental Guide is a resource for local government officials to assist in managing a community's environmental responsibilities. It should be consulted before approving projects to understand the impacts to air, water, and/or land that could affect the health, welfare, and sustainability of your community.

Local government entities often own and have primary responsibility for wastewater and storm water systems, drinking water systems, and solid waste disposal services and systems, among other areas of environmental concern. Through planning and zoning actions, operational ordinances, and inspections, local governments also directly influence business development in their boundaries. Local governments share a mutual responsibility toward sustainable development and protection of air, land, and water.

Purpose

The purpose of the Idaho Environmental Guide is informational, and the guide is meant to be applied to environmental issues for strategic planning. It is not an all-encompassing summary of state and federal rules and regulations.

Coordination Between Local Governments and DEQ

Local government entities can implement rules, regulations, or ordinances in addition to the federal and state laws, rules, and regulations mentioned herein, but local government entities cannot enact regulations and ordinances that are inconsistent with state or federal rules, statutes, regulations, or permits. For this reason, it is advisable for local officials to be aware of the requirements that state and federal rules, statutes, and regulations impose.

Opportunities for Local Government Input

Should a local government entity desire to change or comment on a state and/or federal permit, rule, regulation, or statute that impacts projects in Idaho, the local government entity may provide comments and suggestions during the public comment period before the rule, statute, regulation, or permit is issued.

Planning and Zoning

Planning and zoning is a local authority that DEQ does not address. DEQ plays a complimentary role, but does not make land use decisions. Note that DEQ's approvals of activities under its regulatory authority are still subject to local planning and zoning restrictions, which may be more or less limiting.

When projects overlap local boundaries or affect areas outside of your jurisdiction, coordination with the corresponding local government is encouraged. Reference the Idaho [*Local Land Use Planning Act \(I.C. § 67-6537\)*](#), which outlines requirements for local governing boards to collaborate and cooperate on projects.

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CHAPTER 2. AIR

This chapter covers the following topics:

- Air permits to construct
- Air toxics
- Burning and smoke management
- Fugitive dust
- Greenhouse gases
- Nonattainment and air quality alerts
- Odor control

Air Permit to Construct

What is it?

An air quality permit to construct (PTC) is required before constructing or modifying buildings, structures, or installations that emit or may emit pollutants into the air.

Why should our community care?

According to the *Rules for the Control of Air Pollution in Idaho (Section 201)*, “No owner or operator may commence construction or modification of any stationary source, facility, major facility, or major modification without first obtaining a permit to construct from the Department...”

When scheduling timelines for project development, cities and counties should keep in mind that a PTC may be required for certain projects.

What can we do?

1. Prior to project approval, request that project information specify which requirements under *IDAPA 58.01.01.201* apply and whether the project requires a PTC.
2. DEQ recommends that, as a condition of project approval, cities and counties require applicants to contact DEQ for an applicability determination on any proposal to ensure compliance with the rules.
3. Plan ahead by understanding the type and amount of pollutants that will be emitted into the air from a project. Local governments should have an understanding of the pollutants and processes that are not regulated or exempted under the *rules*.
4. Local governments have the authority to implement ordinances that help prevent air pollutants beyond state and federal laws and regulations. Determine what is best for the health and welfare of your community.

Resources

Need a permit?

Have a question?

For more information on PTCs, visit DEQ’s *PTC Web page*.

Air Toxics

What is it?

Air toxics are a group of air pollutants known or suspected to cause serious health problems such as cancer, birth defects, lung damage, and nerve damage. Examples of air toxics include asbestos, benzene, chloroform, formaldehyde, lead, mercury, nickel compounds, and perchloroethylene.

Why should our community care, and what can we do?

1. Local governments should have an understanding of the following so that long-term strategic decisions can be made about projects and how they may impact a community:
 - The types of air toxics associated with a project
 - How the air toxics are regulated by local, state, and federal agencies
 - Any air toxic exemptions a project may have from state and federal regulations
2. Prior to approval, projects should be assessed for potential issues with air toxics, which may include the following:
 - *Hazardous Air Pollutants*
 - *Asbestos*
 - *Mercury*
 - *Lead*

After project assessment, evaluate the potential impact to your community and develop management plans.

3. Plan ahead. These activities can reduce emissions of air pollutants, including air toxics:
 - Encourage employees and citizens to drive less. Many air toxics, like benzene, come from motor vehicle exhaust. Encourage carpooling, use public transportation, combine trips, avoid drive-throughs, drive the speed limit, and keep your vehicle well tuned and in proper working condition.
 - Provide alternatives to open burning of trash, leaves, or other yard wastes by implementing a community compost or wood recycling program. Provide alternatives to burning of plastics by offering a community recycling program.
 - Avoid using products containing toxic compounds and encourage community members to do the same.
4. Local governments have the authority to implement ordinances that help prevent the release of air toxics beyond state and federal laws and regulations. Determine what is best for the health and welfare of your community.

Resources

Need a permit?

Have a question?

For more information on air toxics, visit DEQ's [*Air Toxics Web page*](#).

[*EPA Asbestos Web page*](#)

[*Idaho Chemical Roundup Program*](#)

[*National Lead Free Wheel Weight Initiative*](#)

Burning and Smoke Management

What is it?

Cities and counties need to be aware of the following seven burning and smoke management issues:

Burn Bans

Crop Residue Burning

Open “Outdoor” Burning

Residential “Backyard” Burning

Business Waste

Wildland/Prescribed Fires

Wood Stoves

Why should our community care?

Restrictions may exist on what can be burned and when, and an *air permit* may be required as outlined in the *Open Burning and Burn Ban Rules (Sections 550-562 and 600-623)*.

Burning of most processed or manufactured materials is prohibited (exemptions may apply), including:

- garbage from food preparation
- dead animals or animal waste
- junk motor vehicles or parts
- tires or other rubber materials
- plastics
- asphalt
- tar and petroleum materials
- paints
- preservative-treated wood
- trade waste (commercial, industrial, or construction)
- insulated wire
- pathogenic (disease-causing) waste
- *hazardous waste*

Unless a *burn ban* is in effect:

- residents who have house-to-house garbage collection may burn tree leaves, gardening waste, and yard trimmings if allowed by local government ordinances during certain periods of the year.
- residents who do not have house-to-house garbage collection may burn rubbish (such as paper and cardboard), tree leaves, gardening waste, and yard trimmings if burning is conducted on the property where the waste was generated.

Smoke generated by burning can contribute to poor air quality and impact human health. Smoke contains small airborne particles that can become lodged in our lungs, making breathing difficult and leading to more serious short-term and chronic health problems for certain sensitive populations, such as small children, pregnant women, older adults, and people with asthma or other respiratory ailments.

What can we do?

1. Prior to project approval, request that project information specify which requirements under the *Open Burning and Burn Ban Rules (Sections 550-562 and 600-623)* apply.
2. Assess projects for burning and smoke issues, evaluate the possible impact to your community, and develop management plans for this potential pollution.
3. Plan ahead by providing alternatives to burning activities that generate air pollution, including a community *compost* or *wood recycling* program.
4. Local ordinances may further restrict or prohibit burning to help prevent emissions from burning and smoke beyond state and federal laws and regulations. Determine what is best for the health and welfare of your community.
5. Contact your *local DEQ office* for assistance with open burning and burn ban rules.

Resources

Need a permit?

Have a question?

For more information on burning and smoke management, visit DEQ's *Burning and Smoke Management Web page*.

Light it Right Brochure

Burn Clean, Burn Smart Brochure

Outdoor Burning Poster

Fugitive Dust

What is it?

Dust is *particulate matter* consisting of very small particles. Fugitive dust is particulate matter suspended in the air.

Why should our community care?

According to the *Rules for the Control of Air Pollution in Idaho (Section 651)*, “All reasonable precautions shall be taken to prevent particulate matter from becoming airborne.”

Communities experiencing population growth may experience a rise in fugitive dust emissions as parcels of land are cleared of vegetation for development, construction and excavation activities increase, and dirt and gravel roads are constructed. These activities expose and disturb soil and cause fugitive dust to become airborne, which can contribute to health problems and affect visibility on local roads.

Cities and counties are responsible for dust suppression on city and county property. Suppression can include paving high-traffic dirt roads, sweeping roadways often, or using wind erosion controls such as planting bushes or trees or constructing wood or rock walls in dusty areas.

What can we do?

1. Prior to project approval, request that project information specify which requirements under *IDAPA 58.01.01.651* apply.
2. Plan ahead by incorporating dust management into your comprehensive plan. Keeping potential fugitive dust problems under control is an everyday job.
3. Understand how a project may emit dust and consider requiring such projects within your jurisdiction to develop a *dust prevention and control plan* prior to project approval. Dust prevention and control plans incorporate appropriate best management practices to control fugitive dust that may be generated at a site.
4. Local governments have the authority to implement ordinances that help prevent fugitive dust emissions beyond state and federal laws and regulations (such as requiring open-bodied haul trucks transporting dusty material to be covered). Determine what is best for the health and welfare of your community.

Resources

Need a permit?

Have a question?

For more information on fugitive dust , visit DEQ’s *Fugitive Dust Web page*.

Greenhouse Gases

What is it?

Gases that trap heat in the atmosphere are often called greenhouse gases. Some greenhouse gases such as carbon dioxide occur naturally and are emitted to the atmosphere both through natural processes and human activities. Other greenhouse gases (such as fluorinated gases) are created and emitted solely through human activities. The following are the principal greenhouse gases that enter the atmosphere because of human activities:

- Carbon dioxide (CO₂)
- Methane (CH₄)
- Nitrous oxide (N₂O)
- Fluorinated gases

Why should our community care?

Reasons why local governments care about climate change include:

- **Cost savings.** Taking action to reduce greenhouse gas emissions has many co-benefits including reducing costs through energy and process efficiency, conserving resources, and reducing waste.
- **Energy security.** A finite amount of resources such as oil are available and future prices of such resources remain unpredictable, therefore, utilizing alternative energy sources and reducing energy consumption can limit the vulnerability of local government operations and reduce the volatility of overhead costs.
- **Job creation.** Efforts to reduce greenhouse gas emissions can have a positive impact on job growth as local government initiatives such as supporting an alternative transportation program, green building, renewable energy, etc. can directly and indirectly promote the growth of these industries.
- **Leadership.** Local governments can directly effect change through policy or program decisions, and doing so can promote change from businesses and organizations within the community.
- **Human health and the environment.** Climate change affects people, plants, and animals. Observed effects include sea level rise, shrinking glaciers, changes in the range and distribution of plants and animals, earlier-blooming trees, longer growing seasons, late freezes and early thaws of ice on rivers and lakes, and thawing of permafrost. Human health can be affected directly and indirectly by climate change in part through extreme periods of heat and cold, storms, increase in climate-sensitive diseases, and smog episodes. Specifically, local governments may be faced with challenges such as the following:
 - Considering development of land in flood-risk areas
 - Ensuring building standards are adequate to withstand changes in weather events
 - Weighing the adequacy of emergency procedures

- Addressing public health and welfare effects from uncharacteristic events triggered by climate change
- **Improving air quality.** Many of the actions that reduce greenhouse gas emissions are ones that can be taken to improve air quality, such as using alternative transportation, driving less, using renewable energy.

What can we do?

1. *Understand* the quantity of greenhouse gases emitted from each project, *evaluate* the impact to your community, and *develop* management plans for this potential pollution. Consider requiring that each project develop a *greenhouse gas inventory* and associated action plan.
3. Develop a city or county inventory of greenhouse gas emissions to quantify emissions from municipal buildings, fleets and equipment, solid waste, and landfills. Develop an action plan establishing programs and goals to reduce greenhouse gas emissions.
4. Plan ahead. These activities can reduce emissions of greenhouse gases:
 - Reduce Consumption
 - *Free or Low Cost*
 - *Capital Required*
 - *Switch to Renewable Energy*
 - *Offset Emissions*
 - *Promote Alternative Transportation*
 - *Promote Waste Reduction and Recycling*
 - *Other Local Best Practices*

Reduce Consumption - Free or Low Cost

Lighting

- Turn off lights when not in use or install occupancy sensors in hallways, bathrooms, meeting rooms, kitchens, storage rooms, and other areas where lights can be shut off for blocks of time.
- Install photocells in outdoor entryway(s) and security lighting to automatically sense outdoor lighting levels.
- Install light emitting diode (LED) exit signs in place of incandescent signs. LED signs last up to 15 times longer, and use less energy.
- Reduce overhead lighting near day lit areas, over lit areas, or areas not requiring light
- Install fluorescent or LED light bulbs

- If a janitorial service comes in after hours, request that they only use lights in areas they are cleaning. Have them turn all lights off when they are finished for the night.

Water

- Install low flow fixtures on showers, sinks, and toilets.
- Insulate hot water heaters.
- Lower the temperature on water heaters.
- Implement a water conservation program and post water conservation stickers, signs and posters in bathrooms, kitchens, cafeterias, conference rooms and other places where employees congregate.
- Minimize lawns. Lawns use more water than any other landscape plants.
- Use drip and other low-flow irrigation devices.

Fleets

- Implement a no-idling policy for vehicle fleets and customers.
- Implement a vehicle maintenance policy for vehicle fleets to maximize vehicle efficiency.

Heating and Cooling

- Adjust air conditioning in the summer and heat in the winter.
- Install automatic, programmable, set-back thermostats to control heating and cooling.
- Set thermostats and lights to correspond with shifts.
- Open blinds in the winter and close them in the summer.
- Restrict the use of space heaters, consider heating pads or blankets instead.
- Clean all filters in your heating and cooling system monthly.
- Limit open doors when picking up or delivering material.
- Schedule HVAC tune-ups once or twice a year. Clean coils, check and correct refrigerant charge, clean and lubricate the fan motor, check for proper airflow, adjust the pulley settings and fan belts, replace air handling unit filters, and do routine checks to ensure proper performance.
- When the building is unoccupied, make sure outside air dampers are closed. This includes morning warm-up periods.
- Seal ducts that run through unconditioned spaces. Leaking ductwork can lose 20 percent or more of the conditioned air in a supply duct run.
- When scheduling group activities and meetings after hours, use rooms and areas that can be heated and cooled individually, so you don't have to heat or cool a whole floor.

Purchasing

- When buying new equipment, appliances, or fixtures look for ENERGY STAR or WaterSense certified.
- Purchase products with recycled content or that are recyclable.
- Purchase only what is needed, bulk is not necessarily better if it has an expiration date.
- Purchase Forest Stewardship Council certified paper and wood products.
- Purchase local and/or organic food.

Transportation

- Start an alternative transportation program for employees and consider making a vehicle available to employees with emergencies who used an alternative mode of transportation to get to work.
- Consider allowing employees to telecommute or work an alternative schedule to limit driving to work.
- Educate drivers to be more efficient on the road and drive fewer miles. Speeding and rapid acceleration and deceleration can increase fuel consumption.
- Schedule travel so that multiple tasks can be accomplished with one trip.
- Remove excess weight from your trunk, and if you have a removable roof rack and aren't using it, take it off.
- Replace your air filter regularly. A clogged air filter can significantly reduce fuel economy.
- Keep your tires properly inflated. Maintaining correct tire pressure and a tuned engine can save over a ton of greenhouse gases per year.
- Change the oil according to the manufacturer's recommendations.

Waste

- Start a *recycling* program.
- Start an on-site *compost* pile.

Equipment and Electronics

- Install motion sensors on vending machines and remove or minimize light bulb use.
- Power down machines when not in use.
- Turn off air compressors when not in use.
- Turn computers and other equipment off at night.
- Use surge protectors for plug in devices and turn them off at the end of the day. Even when electronics or machines are not on they still consume energy, surge protectors can eliminate the power consumed when devices are turned off.
- Limit printing and print double sided.
- Engage energy saving features on equipment and electronics.

- Check and regularly clean filters if you use exhaust fans.
- Practice routine maintenance.
- Regularly clean and maintain food refrigeration equipment where applicable.
- Stage turn-on of continuous motor loads with 1/2 hour intervals between loads. This prevents spikes in demand use and associated charges due to higher-than normal start-up power.

Employee Involvement

- Start a green team.
- Seek employee suggestions on ideas for reducing greenhouse gas emissions.

Reduce Consumption – Capital Required

Building Envelope

- Conduct an energy audit.
Energy Assessment Technical Assistance:
 - *U.S. Department of Energy Industrial Technologies Program*
 - *Idaho Office of Energy Resources Industrial Efficiency Program*
 - *Idaho Office of Energy Resources Building Efficiency Program*
 - *Avista Utility Tools*
 - *Idaho Power Energy Efficiency for Your Business*
- Re-insulate the roof, walls, and foundation.
- Seal cracks and leaks to prevent air flow loss with caulk, spray foam, or weather stripping.
- Install double pane windows.
- Create a separation between delivery areas and work areas to reduce heat or cool air loss.
- Install sky lights or enhance day lighting.
- Install highly reflective roofs to reduce air-conditioning loads and save money. Highly reflective roofs and surfaces can reduce air-conditioning bills by 10 to 50 percent.

Building Design

- If conducting renovation, designing a new building, or looking for a new space to lease consider *LEED criteria*.
- *Highly reflective roofs* help make cities cooler, reduce the formation of smog, reduce air-conditioning loads, and save money. Highly reflective roofs and surfaces can reduce air-conditioning bills by 10 to 50 percent.

Water

- Install a tankless hot water system.
- Plant a xeriscape garden or a garden that requires no or limited irrigation.

- Reuse wastewater or reclaimed water for other industrial uses, landscape irrigation, agricultural irrigation, aesthetic uses such as fountains, and fire protection, and other non potable uses.
- Recycle water for the same application for which it was originally used.
- Collect rainwater or irrigation runoff for reuse, called water harvesting.
- Use the same water to perform several cooling procedures.
- Conduct a waste assessment to look for opportunities to reduce waste.

Transportation

- Invest in video conference technology to reduce traveling
- Purchase fuel efficient vehicles for company fleets
- Plan routes to maximize efficiency and prevent duplication for delivery or pick up services.

Heating and Cooling

- During occupied hours, make sure the amount of outside air matches load. Adding CO2 monitors, coupled with outside air controls, will only allow as much outside air as is necessary to enter the building in the heating season.

Switch to Renewable Energy

An opportunity for reducing or maintaining greenhouse gas emissions is to switch the type of energy used. Consider switching to renewable energy or electricity supplied from energy sources, such as wind, solar, geothermal, hydro, and biomass, by:

- Purchasing green power from your utility
- Increasing on-site renewable energy generation by installing solar panels or wind turbines
- Considering using biofuels. Biomass can be converted directly into liquid fuels, called biofuels, to help meet transportation fuel needs. Ethanol and biodiesel are the two most common types of biofuels. Think about investing in alternative fuel and flex-fuel vehicles for your business transportation needs.
- Purchasing electric or hybrid vehicles

Renewable Energy Resources

- [*ENERGY STAR's Guide for Small Businesses and Using Renewable Energy*](#)
Provides business-oriented links related to renewable energy and green power.
- [*National Renewable Energy Laboratory - Renewable Energy for Small Business Owners*](#)
Provides information on biofuels, geothermal heat pumps, passive solar heating, photovoltaic (solar cell) systems, solar hot water heaters, and wind energy.
- [*U.S. Department of Energy Consumer's Guide: Renewable Energy*](#)
Features comprehensive basic information and resources suitable for small businesses as well as consumers.

- [*Green Power Network*](#)
Provides news and information on green power markets and related activities and summarizes green power products available in Idaho and nationally available renewable energy certificate products.
- [*U.S. Department of Energy Alternative Fuels and Advanced Vehicles Data Center*](#)
Provides a wide range of information and resources to enable the use of alternative fuels, in addition to other petroleum reduction options such as advanced vehicles, fuel blends, idle reduction, and fuel economy.

Offset

What is an Offset?

An offset is a reduction of greenhouse gases from the atmosphere due to a project intended to compensate for emissions occurring elsewhere. Carbon offset project types generally fall into three categories: 1) renewable energy, 2) energy efficiency projects, 3) land use/land change projects like reforestation and avoided deforestation, and 4) landfill gas destruction and agricultural methane destruction.

There are five main types of offset sellers: 1) project developers 2) retailers/wholesalers, 3) brokers, 4) aggregators, and 5) utility companies. Each type offers different value-added services, from providing messaging plans and outreach services, to facilitating faster, larger scale transactions.

Why Purchase Offsets?

Carbon offsets can:

- Help reduce greenhouse gas emissions to zero in addition to reducing use and switching energy sources.
- Immediately and cost effectively reduce greenhouse gas emissions.

Criteria for Quality Offsets

- The offset is additional, meaning the project associated with the offset would not have been completed otherwise or under a business as usual scenario.
- The project associated with the offset is completed in a reasonable time frame and has not yet been completed.
- Projects should produce permanent reductions.
- A local project is preferable to a long distance project.
- Offset projects are monitored and verified.
- Offsets are not re-sold and are retired after purchased.
- Projects have benefits to the environment as well as health and the community.
- Specific projects with a beginning and ending are better than long term programs.
- Offsets should be registered with a public registry, which prevents double counting.

Offset Resources

Carbon Concierge

Carbon Concierge engages businesses at prominent environmental and sustainability related conferences, around the country, to engage in climate reduction strategies. Additionally, the Carbon Concierge assesses offset providers in the voluntary carbon market.

Offset Consumer

Ranks carbon offset providers.

Promote Alternative Transportation

- *Effective public transportation systems* can significantly reduce greenhouse gas emissions and air pollution while at the same time reducing congestion.
- Local governments can buy fuel-efficient or alternative-fuel vehicles for their fleets, including buses, passenger vehicles, etc.
- By creating *pedestrian- and biker-friendly travel routes*, cities and towns can often decrease the number of vehicles on the road, leading to less congestion, air pollution, and greenhouse gas emissions.

Promote Waste Reduction and Recycling

Reduce waste and recycle. Charging residents for the collection of household trash based on the amount they throw away creates a direct economic incentive to recycle more and waste less. Reducing the amount of trash sent to landfills can lower greenhouse gas emissions. Recycling reduces the amount of energy needed to produce products.

Other Local Best Practices

Best practices for local government climate and energy programs include strategies that deliver clean, reliable, and low-cost ways to meet energy demand while reducing peak electricity system loads and the environmental impacts of energy use. Find more information at [EPA's Local Best Practices Web site](#).

Resources

Cities for Climate Protection Program

Mayors Climate Protection Center

Energy Policy Act (EPAAct)

ENERGY STAR for Local Government

EPA Green Vehicle Guide

EPA - Climate Change and Waste

U.S. Department of Energy: Idaho State Incentive and Resource Programs

EPA Local Climate and Energy Program

See also *Chapter 6, Resources*

Nonattainment and Air Quality Alerts

What is it?

The U.S. Environmental Protection Agency (EPA) has set limits on the amounts of certain pollutants that can safely be in our air. These limits are called the *National Ambient Air Quality Standards (NAAQS)*.

EPA considers any geographic area that meets or has pollutant levels below the NAAQS to be an attainment area. An area with persistent air quality problems is designated a nonattainment area. This means that the area has violated federal health-based standards for outdoor air pollution. Each nonattainment area is declared for a specific pollutant. Nonattainment areas for different pollutants may overlap or share common boundaries.

Why should our community care?

Failure to act on nonattainment status can result in a potential loss of federal highway funding for areas in nonattainment. If an area exceeds EPA's NAAQS for *ground level ozone* or *fine particulate matter* (see also the *fugitive dust section*), local governments may be directly affected or have specific responsibilities such as implementing an emissions testing program.

When a project has the potential to contribute to poor air quality either directly (from facility emissions) or indirectly (from traffic) to air quality, your community should understand those impacts for strategic planning.

What can we do?

1. Understand criteria pollutants affecting your area and assess projects for air pollutant issues prior to approval. EPA sets standards for six air pollutants called "*criteria pollutants*." Currently, two of these—ozone and particulate matter—could trigger nonattainment status in certain areas of Idaho. Reference the *Road to Cleaner Air* for business and local government best practices and tools.
2. Plan ahead. These activities can reduce emissions of air toxics:
 - Consider bike/walking paths, commuter lanes, public transportation, traffic light synchronization, limitations on sprawl, public bike racks, etc. when planning.
 - Join the *Idaho Clean Air Zone* program and develop an anti-idling policy for community buildings and grounds.
 - Consider using electric or manual lawn care equipment when caring for public grounds.
 - Reduce grass areas by landscaping with native and water-tolerant plants.
 - Check to see if it's a good air quality day before mowing, mow less often, and encourage community members to do the same.
 - Use products that are free of or low in *volatile organic compounds (VOCs)*.

- If you contract with a company for ground or building maintenance, consider including requirements in the contract about mowing less often, using less-polluting equipment, and using green products.
 - Develop a policy that encourages employees to use alternative transportation, provide incentives if possible, allow employees to work alternative shifts, provide bike racks and locker rooms, and encourage employees not to idle in the parking lot.
 - Keep vehicle fleets well-maintained and consider fuel economy when purchasing new fleet vehicles.
 - Remind employees to avoid “topping off” the tank when fueling.
 - Encourage employees to meet by conference calls, carpool, and drive efficiently.
3. Local governments have the authority to implement ordinances that help prevent the release of pollutants such as ozone and particulate matter beyond state and federal laws and regulations. Determine what is best for the health and welfare of your community.

What are air quality alerts?

For areas with populations over 350,000, DEQ publishes an Air Quality Index at least once per day on its [Web site](#). DEQ publishes this information for certain areas with lower populations as well.

Resources

[*Need a permit?*](#)

[*Have a question?*](#)

For more information on nonattainment or air quality alerts, visit DEQ’s [*Air Quality Index Web page*](#).

Odor Control

What is it?

Odor is defined in DEQ’s air pollution control rules as “the sensation resulting from stimulation of the human sense of smell” (IDAPA 58.01.01.775-776) . Odor is a sensitive subject because perception of odors is subjective. What smells bad to one person may not offend another. Our sensitivities and reactions to odors are influenced by personal preferences, opinions, experiences, and the varying sensitivities of our olfactory systems.

Why should our community care?

The *Rules for the Control of Air Pollution in Idaho (Section 776)* state in part that “No person shall allow, suffer, cause or permit the emission of odorous gases, liquids or solids into the atmosphere in such quantities as to cause air pollution.”

Odors are a concern for Idahoans and a frequent source of citizen complaints to state and local government agencies. A wide range of operations, including livestock feedlots, wastewater treatment plants, and various other industries may generate odors.

Cities and counties are responsible for addressing odor problems caused by pets or the presence of other livestock in residential areas.

What can we do?

1. Prior to project approval, request that project information specify which requirements under *IDAPA 58.01.01.776* apply.
2. Plan ahead by incorporating odor management into your comprehensive plan and zoning issues. Industrial and agricultural areas should be properly zoned so the public is not affected by odorous industries.
3. Understand how a project may create odor and consider requiring such projects within your jurisdiction to develop an odor management plan prior to project approval. Odor management plans can include using appropriate best management practices that detail how the applicant will manage odors occurring from the proposed operation.
4. Local governments have the authority to implement ordinances that help prevent odors beyond state and federal laws and regulations. Determine what is best for the health and welfare of your community.

State and local regulatory responsibilities

In general...

...if the odor is created by a business or industry regulated by DEQ, in most cases, DEQ will investigate and work to resolve the odor complaint through development, modification, and/or enforcement of an odor management plan.

...if the odor is created by an agricultural operation, it is the Idaho State Department of Agriculture’s responsibility to address the problem.

...if the odor is created by a solid waste facility, it is the responsibility of the Public Health District in which the source is located to resolve the situation.

...if the odor is created by pets or the presence of other livestock in residential areas, the complaint is referred to the appropriate city or county authority for regulation under local zoning regulations.

Resources

Need a permit?

Have a question?

For more information on odor, visit DEQ's [Odor Web page](#).

CHAPTER 3. WATER

This chapter covers the following topics:

- Drinking water
- Fire protection
- Ground water quality protection
- Source water assessment and protection
- Surface water
- Wastewater

Drinking Water

What is it?

DEQ's Drinking Water Program protects public health by requiring drinking water from public water systems to meet all health-based water quality standards and other requirements of the Safe Drinking Water Act (SDWA). Almost 2,000 regulated public drinking water systems operate in Idaho. *Public drinking water systems* (publicly or privately owned) serve at least 25 people 60 days out of the year, or have at least 15 service connections. Many other Idaho citizens get their drinking water from private wells. These private wells are not regulated under the SDWA; well owners are personally responsible for ensuring their water is safe.

Why should our community care?

If a city, district, or other entity owns and operates a public drinking water system, it is responsible for producing safe drinking water, thereby protecting the health of its citizens and fulfilling the requirements set forth by SDWA and other state and federal rules and requirements.

Drinking water supplies are often vulnerable to contamination from land use practices (such as farming and urban development) and potential contaminant sources (such as gas stations) within the vicinity of drinking water wells and intakes, particularly surface water sources.

What can we do?

The information below covers four categories: 1) all projects, 2) projects that use an existing public drinking water system, 3) projects that propose a new public drinking water system, and 4) projects that use individual wells.

All projects

1. Prior to project approval, the applicant proposing to construct a new public drinking water system or expand an existing system must demonstrate an adequate water source for both quantity and quality.
2. Prior to project approval, verify that the project documents information specify which requirements apply to the project. The U.S. Environmental Protection Agency (EPA) has delegated to DEQ primary enforcement authority for SWDA and under this authority DEQ promulgated the *Idaho Rules for Public Drinking Water Systems (IDAPA 58.01.08)*.
3. Plan ahead by developing and using a comprehensive land use management plan that includes the impacts of present and future water management (for example, well construction, current and future water availability for an area, fire protection water) and addresses present and future needs of an area for adequate, safe, and sustainable drinking water. A meeting can be scheduled with DEQ for further discussion and recommendations for plan development and implementation.
4. DEQ recommends that all projects first connect to an existing approved public drinking water system whenever possible. If this is not possible, DEQ recommends

developing a new public drinking water system rather than the use of individual wells.

5. Local governments have the authority to help protect drinking water beyond what's required by state and federal laws and regulations. Determine what is best for the health and welfare of your community.
6. A county or city may want to understand the type of drinking water system needed for a project prior to project approval. The project will generally fall into one of these categories:
 - *Projects that use an existing public water system*
 - *Projects that propose a new public water system*
 - *Projects that use individual wells*
7. If you are an owner (city, district, or other entity) of an existing drinking water system, the following information applies when constructing new facilities or constructing improvements to existing facilities:
 - Understand your responsibilities. A city, district, or other entity that owns or operates a public water system (PWS) is responsible for protecting the health of its drinking water customers by monitoring the quality and available quantity of drinking water and fulfilling the requirements set forth by Idaho rules.
 - Different rules apply to different types of PWSs in Idaho. Determine which type of PWS you operate. Under *Idaho's Rules for Public Drinking Water Systems*, a PWS has four basic categories of requirements:
 - Construction and engineering
 - Ongoing monitoring
 - Reporting
 - Operation and maintenance
 - Understand your system by taking these steps:
 - Talk to the operator of the PWS to determine the status of the system as soon as possible.
 - Understand the drinking water operator certification requirements needed by your system's operator.
 - Consider having a city and county elected official attend on-site inspections. While not required, it is a good idea for them to participate to understand the requirements and be aware of deficiencies.
 - If you receive correspondence from state or federal agencies such as DEQ or EPA, contact the agency directly for questions.
 - Meet with regulating agencies, such as your *DEQ regional office*, to determine operating responsibilities, accountable parties, and the issues affecting your PWS.
 - Consider developing a facility plan for all drinking water systems, regardless of plans for growth. Doing so can help identify deficiencies in a system in advance

of new projects so ample time is available to address problems or issues. Cities are responsible for continually ensuring adequate capacity.

- Identify and implement *pollution prevention measures*.
- Local governments have the authority to implement ordinances that help protect drinking water beyond state and federal laws and regulations. Determine what is best for the health and welfare of your community.

Projects that use an existing public drinking water system

1. DEQ requires verification that adequate water is available to serve projects. Prior to project approval, the city and county may want to contact the water provider for three items:
 - A capacity statement
 - A declining balance report
 - Willingness to serve the project
2. If a project proposes modifications to an existing public drinking water system, per Idaho Code §39-118 and the associated *Idaho Rules for Public Drinking Water Systems*, all components of public drinking water system construction, including wells, must be designed by an Idaho registered professional engineer or an Idaho licensed professional geologist and may need to be approved by DEQ or a Qualified Licensed PE (QLPE) other than the design engineer prior to construction. Refer to *Idaho Code §39-118* to determine design review authority.
3. DEQ does not review plans for individual service lines; these should be reviewed by the *State Plumbing Bureau* and/or the local building department as per the *Memorandum of Understanding* with DEQ. Contact *DEQ* to discuss requirements for other service lines that include mechanical components.
4. All projects require preconstruction approval by DEQ unless they meet the provisions of Idaho Code §39-118.2.d. For existing water systems with adequate capacity and pressure, the plans for simple drinking water main extensions may qualify to be reviewed and approved prior to initiation of construction by a QLPE. Refer to *Idaho Code §39-118* for applicability. These simple water main extensions are the only drinking water projects that require no plan review coordination with DEQ. Additionally, at the discretion of any city, county, quasi-municipal corporation, or regulated public utility, these types of projects that fall under Idaho Code §39-118.2.d may be referred to DEQ for approval if desired.

Projects that propose a new public drinking water system

If a project will serve 25 or more people for 60 days per year or more, or if it will have 15 or more service connections, it will meet the definition for a public drinking water system and will be regulated under the Safe Drinking Water Act and *IDAPA 58.01.08*.

1. Plan ahead by understanding a water system's plans and your community's needs for growth. Doing so can help identify potential future deficiencies in a system in

advance of adding more users that could, for instance, cause a system to qualify as a public water system and/or suffer pressure, flow, and supply limitations.

2. Prior to project approval, request that project information specify which requirements under *Idaho Code §39-118 and 39-103(12)* and the associated *Idaho Rules for Public Drinking Water Systems* apply. Generally, the following considerations apply:
 - Projects that propose a new PWS are required to have a specific engineering report approved by DEQ before plans and specifications are submitted to DEQ for review and approval.
 - DEQ recommends that the developer and their engineer schedule a pre-design meeting with DEQ.
 - A project proposing a new PWS is required to demonstrate technical, financial, and managerial capacity. The capacity demonstration must be submitted to and approved by DEQ prior to or concurrent with proceeding or causing to proceed with construction of a new community or nontransient, noncommunity drinking water system.
 - If a PWS project involves a new well or surface water source, then the facility plan/preliminary engineering report must include documentation that the appropriate water right approval has been granted by the Idaho Department of Water Resources.
 - If the PWS will be used to provide water for fire suppression, contact local authorities for fire flow requirements. Any fire flow requirements are in addition to domestic requirements. (See *Fire Protection section*.)

Projects that use individual wells

Determine if the project will use a new or existing well.

1. If the project is using an existing individual well, prior to approval of a project, verify that the change in population size and type (such as employees, children in daycare, or students) does not change the status of the drinking water system. Contact the local *Public Health District* with the population type information for verification.
2. If a project proposes the use of individual wells for each residential domestic water supply, the local *Public Health District* has oversight of the systems.
3. Individual wells are private wells. Private well owners that serve less than 15 connections or serve less than 25 people more than 60 days out of the year are not regulated by the state for water quality. Owners of individual wells are responsible for monitoring the quality of their own drinking water. In addition, individual well construction in most cases is not equivalent to public drinking water system well construction. Therefore, DEQ recommends that private wells be tested for total coliform bacteria, nitrate, and nitrite prior to use and be retested annually thereafter. *Nitrate* and *arsenic* are particularly important because they are the most widespread ground water contaminants in Idaho.

4. If a project will use individual wells, it is advisable to evaluate the potential to meet fire flow requirements.

Resources

Have a question?

For more information on drinking water, visit DEQ's *Drinking Water Web page*.

Drinking Water and Wastewater in Idaho: Guidance for Engineers and Developers

Pollution Prevention for Public Water Systems

Public Water System Switchboard

Search for an Operator

Idaho Drinking Water Newsletter

Fire Protection

Why should our community care?

Since water is key to firefighting efforts, local governments should consider the benefits for enhanced public safety through fire protection and understand water resources and pressure requirements. Public water systems are the primary source of water for firefighting.

What can we do?

1. Prior to project approval, request that project information specify which requirements apply. Understand the fire code as it applies to each project and how it is enforced in your city or county. See *Idaho Code Section 41-253*.
2. Plan ahead. Fire departments are finding their resources spreading thin as more homes are being built outside of fire districts. To avoid exceeding available fire protection resources, cities and counties should review and understand the fire protection needs of their community.
3. Understand the fire department that services each project and its capacity to serve:
 - Does a project have fire protection?
 - Where is the nearest fire station located?
 - What is the average response time for the station?
 - Who funds the fire department, and are there volunteer or full-time employees?
 - What water resources are available to firefighters?
4. For all projects, it is recommended that the county or city:
 - contact and coordinate with the local *Fire Marshal and State Fire Marshal* for fire code requirements on all projects,
 - contact local county code enforcement and all local utilities to ensure that all requirements are met, and
 - contact the *Idaho Department of Water Resources* to understand water rights for each project and the circumstances in which available water can be used for fire protection and prevention.

Resources

Need a permit?

Have a question?

Ground Water Quality Protection

What is it?

Ground water is water that is found underground in the cracks and spaces in soil, sand, and rock. Ground water is stored in and moves slowly through layers of soil, sand, and rocks, called aquifers. Aquifers typically consist of gravel, sand, sandstone, or fractured rock, like basalt.

Ground water is a key resource supporting many aspects of Idaho's way of life. It replenishes our streams and rivers and provides fresh water for irrigation, industry, and communities. In addition, ground water supplies 90% of the state's drinking water. As Idaho's population grows, so does the need for clean, usable ground water.

Why should our community care?

The water that flows from your tap likely comes from ground water, as it provides 90% of the state's drinking water. Ground water is a vital resource in Idaho. Around nine billion gallons of ground water are withdrawn every day for various uses in the state.

Agriculture uses approximately 60% of the total ground water withdrawn for irrigation of such crops as potatoes, sugar beets, and barley. Aquaculture also relies on ground water, as do industrial processes that use ground water for food processing, fertilizer production, and high-tech manufacturing.

The Idaho *Environmental Protection and Health Act (I.C. § 39-126)* mandates that state and local governments incorporate policies from the *Idaho Ground Water Quality Plan* into their programs and states that cities, counties, and other political subdivisions are also authorized and encouraged to implement ground water quality protection policies within their jurisdictions.

The Idaho *Local Land Use Planning Act (I.C. § 67-6537)* requires local governing boards to consider the impact on ground water quality when considering amending, repealing, or adopting a comprehensive plan.

What can we do?

1. Plan ahead. Local governments have the authority to manage potential sources of ground water contamination within their jurisdictions. *They can protect ground water quality by including ground water protection as a component in their comprehensive plans.* Local governments can also implement ordinances and regulations such as wellhead protection overlay zones, riparian buffers, storm water management ordinances, special use permits, and land-use controls to protect ground water quality.
2. Local governments have the authority to implement ordinances that restrict ground water contamination beyond state and federal laws and regulations. Many land uses that pose a potential threat to ground water quality are managed at the local level. Therefore, it is local government that can most efficiently administer and implement some provisions of the Idaho *Environmental Protection and Health Act (I.C. § 39-126)* and the *Idaho Ground Water Quality Plan*, particularly when implementation can be incorporated into existing programs. Determine what is best for the health and welfare of your community.

3. Implement ground water quality protection policies within your jurisdiction. The [Idaho Ground Water Quality Plan](#) provides guidance on ground water policies and implementation strategies for local government management efforts.
4. Consult the [Idaho Ground Water Quality Plan](#) to evaluate city or county use and management of pesticides, chemicals, and hazardous waste.
5. Consider implementing:
 - Land use regulations, zoning, or ordinances, especially for activities located near sensitive drinking water areas, such as protecting water supplies at the source using buffers or land use restrictions (see [source water section](#))
 - Homeowner and business education programs to provide information on topics such as how to properly apply fertilizer
 - Water conservation standards
 - Collection sites for used oil, pharmaceuticals, or [household hazardous waste](#)
 - Community and business stewardship programs
 - Ground water protection policies and ordinances
 - Best management practices to mitigate the risk of potential contamination
6. Reference federal and state regulations that you may want to apply to unregulated tanks (for instance, heating oil tanks), such as the [Idaho Underground Storage Tank Act](#) or the [Spill Prevention, Control, and Countermeasure \(SPCC\) Rule](#) (See also Chapter 5, Petroleum Storage and Fueling). Develop and use best management practices for facilities and persons that store and use materials that have the potential to contaminate soil and ground water. This includes assistance with selecting, designing, installing, and maintaining secondary containment systems.
7. Consider a requirement that projects have pollution liability insurance.
8. Identify groups in the community working on water issues, such as utility companies, water quality agencies, or advocacy organizations, and explore ways to collaborate with them.
9. Contact DEQ for training and technical assistance in implementing ground water and drinking water protection.
10. Communities located within [Nitrate Priority Areas](#) can work with DEQ to form local ground water quality advisory committees to implement strategies and ground water quality improvement plans.
11. Research funding potential to replace septic systems with upgraded sewer systems.
12. Request CAFO (see also Chapter 5, CAFOs) siting evaluations.

Resources

Have a question?

For more information on ground water quality protection, visit DEQ's [Ground Water Web page](#).

Source Water Assessment and Protection

What is it?

Source water is untreated water from streams, rivers, lakes, or aquifers (ground water) that is used to provide public drinking water and to supply private wells used for human consumption.

Source water *assessments* are reports written by DEQ that provide information on:

- the potential contaminant threats to public drinking water sources,
- the area that contributes to the source,
- and the likelihood of that source to become contaminated.

Communities can use source water assessments to implement drinking water source protection plans, programs, and activities.

Source water *protection* is a voluntary process that enables communities to protect ground water and surface water supplies that serve as a source for drinking water. Source water protection consists of voluntary or regulatory programs and activities that are typically implemented at the local level by a broad spectrum of community groups, including government, private entities, and individuals. A drinking water source protection plan is often developed by a community or a public water system to identify actions a community can implement to help prevent contamination of water that supplies its public water system.

Why should our community care?

Safe drinking water is fundamental for a healthy and economically vibrant community. Local governments play a primary role in the protection of a community's drinking water supply. The Idaho *Environmental Protection and Health Act (I.C. § 39-126)* mandates that state and local governments incorporate policies from the *Idaho Ground Water Quality Plan* into their programs and states that cities, counties, and other political subdivisions are also authorized and encouraged to implement ground water quality protection policies within their jurisdictions.

The Idaho *Local Land Use Planning Act (I.C. § 67-6537)* requires local governing boards to consider the impact on ground water quality when considering amending, repealing, or adopting a comprehensive plan. A comprehensive plan should consider protection of source water because a sustainable supply of clean and reliable drinking water is needed for the economic vitality of a community.

Preventing contaminants from entering the water that supplies a public water system minimizes potential problems, such as increased health risks, expanded drinking water monitoring requirements, additional water treatment requirements, or expensive environmental cleanup activities.

In many cases, public drinking water systems are not operated by local governments and do not have the authority needed to protect drinking water sources. Therefore, municipal and county governments have the responsibility and legal authority for enacting and enforcing drinking water source protection measures.

What can we do?

1. Prior to project approval, request that source water impacts from the project be determined and that the project specify whether any federal or state requirements apply.
2. Plan ahead. Local governments have the authority to manage potential sources of source water contamination within their jurisdictions. *They can therefore protect drinking water sources by including ground water and source water protection as a component in their comprehensive plans.* Local governments can also implement ordinances and regulations such as wellhead protection overlay zones, riparian buffers, storm water management ordinances, and land-use controls to protect delineated source water areas.
3. Use the *source water assessments* available from DEQ to:
 - implement broader drinking water source protection plans, programs, and activities to address current problems and prevent future threats to the quality of drinking water, and
 - manage development of high-risk activities to minimize threats to source water through planning, zoning, best management practices, and land use decisions.
4. Develop a *drinking water source protection plan* to guide protection activities your community will take and to inform and educate the public.
5. Consider implementing:
 - Land use regulations, zoning, or ordinances, especially for activities located near sensitive drinking water areas, such as protecting water supplies at the source using buffers or land use restrictions
 - Homeowner and business education programs to provide information on topics such as how to properly apply fertilizer
 - Water conservation standards
 - Collection sites for used oil, pharmaceuticals, or *household hazardous waste*
 - Community and business stewardship programs
 - Ground water protection policies and ordinances
 - Best management practices to mitigate the risk of potential contamination
6. Research funding potential to replace septic systems with upgraded sewer systems.
7. Request CAFO (see also Chapter 5, CAFOs) siting evaluations.
8. Identify groups in the community working on water issues, such as utility companies, water quality agencies, or advocacy organizations, and explore ways to collaborate with them.
9. Identify practices that threaten to pollute drinking water sources. Set up a task force of stakeholders, including citizens, to assess issues affecting drinking water source protection areas.
10. Local governments have the authority to protect source water beyond federal and state laws and regulations. Determine what is best for the health and welfare of your community.

Resources

Have a question?

Funding Opportunities:

- *Brownfields*
- *Source Water Protection Grants*
- *319 Grants*
- *EPA Funding*

For more information on source water protection and assessment, visit DEQ's *Source Water Web page*.

EPA Source Water Protection Local Government Resources

NACo County Code and Ordinances

Surface Water

What is it?

Surface water is all water that is naturally open to the atmosphere, such as lakes, rivers, streams, and reservoirs.

Why should our community care?

Under the Clean Water Act, DEQ establishes and the U.S. Environmental Protection Agency (EPA) approves total maximum daily loads for pollutants in impaired assessed water bodies. These loads become incorporated into federal discharge permits.

Under *Idaho's Water Quality Standards*, cities and counties cannot discharge materials to surface water or degrade surface water quality without first obtaining a permit, when required.

Surface water pollution can result from a number of sources, including dredging, storm water runoff, and industrial or municipal wastewater discharges.

Cities and counties are the government agencies that manage land use. They are responsible for determining how land is developed and zoned and for protecting the features of surface water through city and county ordinances.

What can we do?

1. Prior to project approval, request that project information specify which requirements under Idaho's *Water Quality Standards* apply.
2. Understand the proximity of all surface waters to a project and how the project could cause surface water pollution (due to dust, storm water runoff, etc.). Take surface water protection into consideration for all projects.
3. Make sure projects have acquired appropriate surface water permits prior to approval. Under the federal Clean Water Act, any in-water construction discharges of pollutants into surface waters must have an Army Corps Section 404 permit or a *National Pollutant Discharge Elimination System (NPDES) permit* from EPA.
4. Plan ahead by preventing storm water pollution.
 - Develop storm water ordinances.
 - When approving development plans, consider sustainability by taking into account water quality issues.
 - Participate in *watershed advisory groups* and the development of water quality improvement plans.
 - Implement land use regulations or ordinances, especially for activities located near surface water.
 - Incorporate pollution prevention strategies into the land use and planning process, such as protecting surface waters by using buffers or other protection measures.

- Support a used-oil or *household hazardous waste* collection program.
 - Join the *Storm Drain Marking Program*.
5. Local governments have the authority to implement ordinances that help prevent storm water pollution beyond federal and state laws and regulations. Determine what is best for the health and welfare of your community.

Total Maximum Daily Load (TMDL)

Under the Clean Water Act, DEQ establishes and EPA approves TMDLs for pollutants in impaired water bodies. Simply put, a TMDL is a pollutant budget. A TMDL is a calculation of the maximum amount of a pollutant that a water body can receive from human-caused sources and still meet water quality standards.

1. Determine if a water body near a project has a *TMDL*; if so, additional considerations may be advisable for such projects. Please contact *DEQ* for more information.
2. Plan ahead by developing a *One Plan* or a Natural Resources Conservation Service conservation plan. Such a plan will include recommended practices for minimizing water quality impacts, based on the specific conditions in the area.

Resources

Need a permit?

Have a question?

For more information on storm water, visit DEQ's *Storm Water Web page*.

EPA Stormwater Program

Stormwater Management Techniques

Low Impact Development Center

Evaluating the Effectiveness of Municipal Stormwater Programs

Funding Stormwater Programs

Understanding Impaired Waters and TMDL Requirements for Municipal Stormwater Programs

Wastewater

What is it?

Wastewater is spent or used water, such as from households and businesses, that contains enough harmful material to damage the water's quality. Every building with running water generates some sort of wastewater.

Why should our community care?

If a city, district, or other entity owns and operates a wastewater collection or treatment system, it is responsible for protecting the health of its citizens and fulfilling the requirements set forth by state and federal rules and permits for collecting, treating, and disposing of the wastewater. Similarly, individuals with wastewater systems discharging to drainfields on their lots are responsible for all wastes entering their systems because these wastes ultimately enter the ground water below the drainfields. The ground water is Idaho's main source for individual and community drinking water. Please review this document's [Source Water Assessment and Protection](#) section for appropriate guidance.

Wastewater may contain contaminants such as oil, dirt, human waste, and chemicals. Untreated wastewater can cause serious harm to the environment and threaten human health. Proper management and disposal of wastewater is essential to protect public health and Idaho's water quality.

What can we do?

The information below covers four categories: 1) all projects, 2) projects that expand existing wastewater systems, 3) projects that propose new public wastewater systems, and 4) subsurface treatment and disposal systems.

All projects

1. Prior to project approval, request that project information specify which requirements under Idaho's [Wastewater Rules \(IDAPA 58.01.16\)](#), [Rules for the Reclamation and Reuse of Municipal and Industrial Wastewater \(IDAPA 58.01.17\)](#), and Idaho's [Individual/Subsurface Sewage Disposal Rules \(IDAPA 58.01.03\)](#) apply.
2. Plan ahead by developing and using a comprehensive land use management plan, which includes the impacts of present and future wastewater management. Generally, DEQ recommends that all new projects be served by existing approved wastewater collection systems or centralized community wastewater systems whenever possible.
3. Local governments have the authority to implement ordinances that go beyond federal and state laws and regulations for management of wastewater. Determine what is best for the health and welfare of your community.
4. Understand the project's type of wastewater and its collection and treatment system prior to project approval. A project will generally fall under one of the following three categories:

- *Projects that expand existing wastewater systems*
 - *Projects that propose new wastewater systems*
 - *Subsurface treatment and disposal system (SSDS)*
 - Community subsurface treatment and disposal systems
 - Individual on-site wastewater systems
5. If you are an owner (a city, district, or other entity) of an existing wastewater system, the following information applies:
- Understand your responsibilities. If a city, district, or other entity owns and operates a wastewater collection or treatment system, it is responsible for protecting the health of its citizens and fulfilling the requirements set forth by state and federal rules and permits.
 - Different rules apply to different types of wastewater collection, treatment, and disposal systems in Idaho. Determine which type of system you operate. Wastewater collection, treatment, and disposal systems have four basic categories of requirements under Idaho's *Wastewater Rules (IDAPA 58.01.16)* and *Rules for the Reclamation and Reuse of Municipal and Industrial Wastewater (IDAPA 58.01.17)* :
 - Construction and engineering
 - Ongoing monitoring
 - Reporting
 - Operation and maintenance
 - Understand your system by taking these steps:
 - Talk to the operator of the wastewater system to determine the status of the system as soon as you take office.
 - Understand the certification requirements needed by your operator.
 - Consider having a city and county elected official attend on-site inspections. While not required, it is a good idea for them to participate to understand the requirements and be aware of deficiencies.
 - If you receive any correspondence from state or federal agencies such as DEQ or the U.S. Environmental Protection Agency (EPA), contact the agency directly with any questions.
 - Meet with regulating agencies, such as your *DEQ regional office* or your *local Health District*, to determine operating responsibilities, accountable parties, and the issues affecting your wastewater system.
 - Consider developing a facility plan for all wastewater systems, regardless of plans for growth. Doing so can help identify deficiencies in a system in advance of new projects so ample time is available to address problems or issues. Cities are responsible for continually ensuring adequate capacity.
 - Contact your *DEQ regional office* with any questions regarding expanding or modifying existing systems.

- If your system has a lagoon, the *Wastewater Rules* require that all lagoons be seepage tested prior to April 15, 2012. Plan ahead to meet this deadline.
- Identify and implement *pollution prevention measures*.
- Local governments have the authority to implement ordinances that go beyond state and federal laws and regulations for management of wastewater. Determine what is best for the health and welfare of your community. Educate yourself on each wastewater treatment method's benefits and drawbacks. DEQ's regional offices and State Program personnel can help you become informed so that applicable and effective ordinances can be proposed and enacted.

Projects that expand existing wastewater systems

1. DEQ recommends verifying that adequate sewer capacity is available to serve projects. Prior to project approval, the city and county may want to contact the sewer provider for three items:
 - A capacity statement
 - A declining balance report
 - Willingness to serve the project
2. All facilities should have a DEQ-approved facility plan that outlines current capacity and future expansions needed to expand capacity. If the existing facility plan is inadequate to cover new projects, a new facility plan should be prepared and submitted to DEQ unless the new project is classified as a simple wastewater main extension and capacity can be determined without a new facility plan. Developing a facility plan can help identify deficiencies in a system in advance of new projects so ample time is available to address problems or issues.
3. According to Idaho's *Wastewater Rules*, all systems proposing major wastewater system collection projects, pump station projects, treatment plant designs or upgrades, or new septage transfer stations are required to submit a project-specific engineering report for DEQ review and approval prior to submitting project specific plans and specifications for the wastewater collection or treatment system.
4. All projects involving wastewater collection systems, wastewater treatment plants, or wastewater disposal systems must be designed by a professional engineer registered in Idaho. Plans and specifications need to be approved prior to construction. Refer to *Idaho Code §39-118* to determine design review authority.
5. For existing wastewater systems with adequate capacity, the plans for simple wastewater main extensions may qualify to be reviewed and approved by a Qualified Licensed Professional Engineer (QLPE) prior to initiation of construction. Refer to *Idaho Code §39-118* for applicability. These simple wastewater main extensions are the only wastewater projects that do not require DEQ plan review and approval. Additionally, at the discretion of any city, county, quasi-municipal corporation, or regulated public utility, projects that fall under Idaho Code §39-118 may be referred to DEQ for approval. However, upon project completion project as-built drawings must be submitted to DEQ.

6. DEQ does not review plans for gravity service lines serving residences; these should be reviewed by the State Plumbing Bureau and/or the local building department. Contact [DEQ](#) to discuss requirements on any other service line that includes mechanical components.

Projects that propose new public wastewater systems

1. All projects involving new wastewater collection, treatment, or disposal systems must be designed by a professional engineer registered in Idaho. Refer to [Idaho Code §39-118](#) to determine applicability of DEQ design review.
2. According to Idaho's [Wastewater Rules](#), DEQ recommends that a city or county consider the following when approving or constructing new public wastewater collection, treatment, or disposal systems:
 - Schedule a pre-design meeting with DEQ prior to preparing facility plans, engineering reports, or plans and specifications for a new public wastewater collection system.
 - Plans and specifications must be approved by DEQ prior to construction.
 - Before submitting plans and specifications for the wastewater collection, treatment, or disposal system for DEQ review and approval, all new systems must have a project-specific engineering report and a current facility plan approved by DEQ. The facility plan is a planning document that covers items such as the project's location, population, demographics, and the overall wastewater system configuration (collection, treatment, and disposal components). The facility plan should be prepared and submitted to DEQ prior to design of the wastewater infrastructure. Ideally, a facility plan would also be used to support and supplement planning and zoning requests. Facility Plans are sometimes referred to as a Master Plan or Facilities Planning Study.
 - If a project includes a private municipal wastewater treatment plant, the minimum design capacity for such plants is 25,000 gallons per day based on average day flows.
 - Per the Idaho [Wastewater Rules](#), owners of private municipal wastewater treatment plants must receive a
 - draft National Pollutant Discharge Elimination System (NPDES) permit,
 - draft wastewater reuse permit, or
 - final subsurface treatment and disposal system (SSDS) permitbefore DEQ will approve plans and associated specifications for collection and treatment systems. Therefore, communities approving projects may want to consider this requirement when scheduling timelines and understand the wastewater treatment plant's effluent discharge proposed for a project.
 - **NPDES permit.** If wastewater treatment plant effluent will reach state waters, an [NPDES permit](#) issued by EPA will be required for the proposed discharge. Permits may be difficult and time-consuming to obtain.

- **Wastewater reuse permit.** If a project proposes reuse of wastewater (for irrigation or land application, for instance), a *wastewater reuse permit* is required from DEQ.
- **Subsurface treatment and disposal system (SSDS).** If effluent from the wastewater treatment plant will be discharged to ground water through a subsurface disposal system, a permit from the local health department will be required. DEQ review and approval may also be necessary.

Subsurface treatment and disposal system (SSDS)

Subsurface sewage disposal systems can service the needs of various wastewater generators ranging from individual homes to small communities. Where and how the wastewater is generated establishes the type of subsurface sewage system while the wastewater volume determines whether enhanced drainfield configurations are required or not.

There are two common types of subsurface treatment and disposal systems:

1. Individual on-site wastewater systems
2. Central subsurface treatment and disposal systems, commonly referred to as a Community SSDS.

Additionally, if wastewater volumes of 2,500 gallons per day (GPD) or more are received by the SSDS then the drainfield is classified as a Large Soil Absorption System (LSAS) and must meet enhanced design, construction, monitoring and reporting requirements.

DEQ has established minimum standards, the *Individual/Subsurface Sewage Disposal Rules (IDAPA 58.01.03)*, for the design, construction, siting, and use of individual and subsurface sewage disposal systems. These rules also establish requirements for obtaining an installation permit and an installer's registration permit. These rules are administered by Idaho's seven local *Public Health Districts* through a *Memorandum of Understanding* with DEQ. Contact your local Public Health District during initial project planning efforts to understand site and wastewater system requirements.

- **Individual on-site wastewater systems**
Individual septic systems are on-site wastewater systems that discharge wastewater into an underground tank, where solids are separated from the effluent, and the clarified water is dispersed into a subsurface drainfield located on the same property where the wastewater is generated. These on-site systems predominantly service residences in areas without access to municipal wastewater treatment plants and have historically been known as septic systems.
 - On-site SSDS have the potential to transport pollutants from sewage to ground water. To help prevent this, *nutrient-pathogen evaluations* (N-P evaluations) may be required for certain proposed on-site wastewater disposal systems. If an N-P evaluation is not required by the health department, the local government may decide to assess a project's impacts to groundwater and request an N-P evaluation. Requiring an N-P evaluation may be prudent, especially if the subsurface disposal of sewage

is to occur in a Public Drinking Water System's source water recharge area. [Note: The term "N-P evaluation" will soon be replaced by "Water Quality Impact Analysis (WQIA)."]

- On-site SSDS may also service commercial, industrial and institutional facilities. Care must be taken in designing and constructing a SSDS that receives wastewater from these facilities due to the potential for chemical contamination of the ground water. SSDS serving these facilities are classified as Non-Domestic SSDS and must preprocess any wastewater generated to domestic wastewater strength prior to discharging to the drainfield. Furthermore, due to the potential for undesirable chemicals to enter these systems, the Idaho Department of Water Resources (IDWR) may have additional requirements as specified in the IDWR Rule and Minimum Standards for the Construction and Use of Injection Wells in the State of Idaho (IDAPA 37.03.03). The Public Health District coordinates system review with DEQ. DEQ will coordinate the jurisdictional issues with IDWR for permitting of these Non-Domestic on-site SSDS.
- **Central (Community) SSDS**

A community SSDS is any wastewater treatment system that receives wastewater from more than two dwelling units or more than two buildings under separate ownership. These types of systems are analogous to more well known municipal wastewater collection and treatment systems, with which they share many characteristics, but they discharge the processed wastewater to a subsurface drainfield. If a project indicates that a community SSDS will be used, details on this system will need to be provided to your local *Public Health District*. The Public Health District will coordinate the review of all project submittals with DEQ so that the community SSDS meets all applicable Rules.

 - Since Community SSDS share multiple characteristics with municipal wastewater treatment systems they must also meet the regulatory requirements defined in the Wastewater Rules (IDAPA 58.01.16). Specifically, the project will need to submit technical, financial and managerial documentation (IDAPA 58.01.16.409), a Preliminary Engineering Report (IDAPA 58.01.16.411), and Plans and Specifications (IDAPA 58.01.16.420) that meet the minimum requirements specified in subsections for Pipelines (IDAPA 58.01.16.430) and, if present, Pump Stations (IDAPA 58.01.16.440) and Private Wastewater Treatment Plants (IDAPA 58.01.16.455).
 - Community SSDS may also service commercial, industrial and institutional facilities, and since the wastewater is coming from multiple sources the likelihood that some of these sources are commercial, industrial and institutional facilities is increased. Consequently, additional care must be taken in designing and constructing a Community SSDS that receives wastewater from these facilities due to the potential for chemical contamination of the ground water. DEQ recommends that Community SSDS receiving these mixed wastewater streams have the wastewater from

these non-domestic sources evaluated prior to allowing them to connect to the collection system. DEQ and IDWR Rules may apply. Contact the DEQ Regional Office or IDWR for assistance.

○ **LSAS.**

Any individual or community SSDS that will receive wastewater volumes of 2,500 gallons per day or more must be designed and constructed to meet the additional configuration requirements specified in the *Individual/Subsurface Sewage Disposal Rules (IDAPA 58.01.03.013)* subsection on Large Soil Absorption System Design and Construction. The Public Health District will coordinate system review and approval with DEQ prior to the Health District's issuance of the necessary installation permits.

- Due to the large wastewater volumes being discharged to the ground water at an LSAS, DEQ will require the developer to generate and submit a N-P evaluation. DEQ will evaluate the N-P study to verify that the proposed system will not significantly degrade the beneficial uses of the ground water. It is recommended that a N-P study be successfully performed prior to any system design activity start.
- All LSAS must be designed by an Idaho licensed professional engineer. Construction must be performed by a registered complex system installer or a licensed public works contractor who has experience in subsurface system installation and the installation must be performed under the direction of the licensed professional engineer.

Resources

Need a permit?

Have a question?

For more information on wastewater, visit DEQ's *Wastewater Web page*.

Drinking Water and Wastewater in Idaho: Guidance for Engineers and Developers

Pollution Prevention in Wastewater Collection and Treatment

Pollution Prevention Handbook: Sewage and Wastewater Treatment Plants

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CHAPTER 4. WASTE MANAGEMENT AND REMEDIATION

This chapter covers the following topics:

- Hazardous waste
- Household hazardous waste
- Medical and pharmaceutical waste
- Solid waste
- Waste tires

Hazardous Waste

What is it?

Hazardous waste is waste with characteristics that make it dangerous or potentially harmful to human health or the environment. Hazardous wastes can be liquids, solids, contained gases, or sludges. They can be the by-products of manufacturing processes or simply discarded commercial products. Examples include cleaning fluid; pesticides; paints; batteries; electronics; chemicals; and mercury-containing light bulbs, switches, thermometers, and other instruments.

Why should our community care?

Hazardous waste is dangerous or potentially harmful to human health and the environment and can harm drinking water, surface water, and ground water.

Idaho's *Ground Water Quality Rule, Section 400.01* (Releases Degrading Ground Water Quality), states that "No person shall cause or allow the release, spilling, leaking, emission, discharge, escape, leaching, or disposal of a contaminant into the environment in a manner that:

- Causes a ground water quality standard to be exceeded;
- Injures a beneficial use of ground water; or
- Is not in accordance with a permit, consent order or applicable best management practice, best available method or best practical method."

Currently federal and state laws allow *conditionally exempt small quantity generators* (CESQGs) to dispose of hazardous waste in the trash or sewer through an exemption in the hazardous waste regulations. Therefore, hazardous waste from these sources is often thrown away rather than recycled, reused, or safely treated.

Cities and counties are required to consider the impact on ground water quality when considering amending, repealing, or adopting a comprehensive plan and to incorporate policies from the *Idaho Ground Water Quality Plan* into their programs. Cities, counties, and other political subdivisions are also authorized and encouraged to implement ground water quality protection policies within their jurisdictions.

What can we do?

The information below applies to all projects.

1. Prior to project approval, request that project information specify which requirements under the federal *Resource Conservation and Recovery Act*, the Idaho *Hazardous Waste Management Act*, and the Idaho *Ground Water Quality Rule* apply.
2. Understand each project by reviewing its *generator status* and the chemicals, toxic materials, and hazardous waste associated with its operations. Review projects for the potential to use alternative materials that have less impact on the health and welfare of the community.
3. All businesses in Idaho, including city- and county-owned facilities, are required to determine if they *generate* hazardous waste and comply with various requirements. Note that *household*

hazardous waste is a household waste and therefore allowed to go to a municipal solid waste landfill. *CESQG* waste is allowed to go to a municipal or non-municipal landfill through a conditional exemption in the hazardous waste regulations. However, *CESQG* waste may only be disposed of at a municipal or non-municipal landfill if authorized by the landfill and included in the landfill's operating plan. Diversion programs or local ordinances should be developed and implemented for both sources of hazardous waste to keep them out of landfills. Have an operating plan to address *CESQGs* and household hazardous waste.

4. Plan ahead for sites with tanks.

- Require that project sites be evaluated for underground tanks and contamination prior to remodeling, as there may be potential contamination in subsurface soils. Disturbance of contaminated soils could allow harmful vapors to contaminate indoor air, among other problems.
- Consider placement of *storage tanks* with regard to existing individual wells, public water system wells, and distribution lines to drinkable water to prevent contamination in the event of a release of material from the tanks.
- Assure that drinking water and wastewater pipes are adequately separated and wastewater lines are down-gradient of public water system wells and their features.

5. Plan ahead for ground water protection.

- Implement ground water quality protection policies within your jurisdiction. The *Idaho Ground Water Quality Plan* provides guidance on ground water policies and implementation strategies for local government management efforts.
- Consult the *Idaho Ground Water Quality Plan* and evaluate city or county use and management of pesticides, chemicals, and hazardous waste.
- Adopt land-use regulations or ordinances to protect ground water (especially for activities located near sensitive ground water areas). (See *source water section*.)
- Develop and use best management practices for facilities and persons that store and use materials that have the potential to contaminate soil and ground water. This includes assistance with selecting, designing, installing, and maintaining secondary containment systems.
- Consider a requirement that projects have pollution liability insurance.
- Implement a household hazardous waste collection program for used oil, pharmaceuticals, and household hazardous waste. (See *household hazardous waste section*.)
- Develop educational and voluntary programs to discourage the release of contaminants to ground water to reduce or eliminate contamination from these sources.
- Identify groups in the community working on water issues, such as utility companies, water quality agencies, or advocacy organizations, and explore ways to collaborate with them.
- Implement homeowner and business education programs and community and business stewardship programs.

- Contact DEQ for training and technical assistance in implementing ground water and drinking water protection.
6. Assess proposed development projects or any abandoned or underutilized properties in your community for the potential to use brownfields funds or assistance.

Brownfields are properties for which the expansion, redevelopment, or reuse may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Abandoned or underutilized properties result in wasted infrastructure, development of green space on the edge of town, and blight in urban and neighborhood areas. Communities may struggle to find new uses for brownfields, whether as a neighborhood park or as a new commercial or retail use, unless and until the environmental issues are resolved. Cleaning up and reinvesting in these properties increases local tax bases; facilitates job growth; utilizes existing infrastructure; takes development pressures off of undeveloped, open land; and both improves and protects the environment.

Local governments can use the Brownfields Program to revitalize properties or buildings in their communities by requesting a brownfields assessment, applying for an assessment or clean-up grant, adding a property to DEQ's Brownfield Inventory, or proposing a brownfield site to DEQ. Local governments do not have to own the property in order to ask DEQ to conduct an assessment. For more information on this program, visit DEQ's [Brownfields Web page](#).

7. Local governments have the authority to implement ordinances that help prevent ground water contamination. Many land uses that pose a potential threat to ground water quality are managed at the local level. Therefore, it is local government that can most efficiently administer and implement some provisions of the [Idaho Ground Water Quality Plan](#), particularly when implementation can be incorporated into existing programs. Determine what is best for the health and welfare of your community.

Resources

[Need a permit?](#)

[Have a question?](#)

For more information on hazardous waste, visit DEQ's [Hazardous Waste Web page](#).

[Hazardous Waste Management in Idaho: Information for Businesses](#)

[DEQ's Compliance/Technical Assistance Program](#)

Household Hazardous Waste

What is it?

Leftover household products that contain corrosive, toxic, ignitable, or reactive ingredients are considered household hazardous waste. Products such as paints, cleaners, oils, batteries, mercury thermometers, *electronics*, and pesticides that contain potentially hazardous ingredients require special care when disposed of.

Why should our community care?

Improper disposal methods of household hazardous wastes, such as putting them out with the trash or pouring them down the drain, on the ground, or into storm sewers can pollute the environment and pose a threat to human health.

Currently federal and state laws allow households to dispose of household hazardous waste in the trash or sewer. Therefore, household hazardous waste is often thrown away rather than recycled, reused, or safely treated. If it is not thrown away, it can be improperly stored and put households at risk for *spills* or accidents. For example, mercury thermometers or other mercury containing instruments can easily break and become very hazardous if not cleaned up properly. With an outlet to dispose of household hazardous wastes, households and public agencies can avoid the health and financial costs of an preventable spill.

What can we do?

With the following efforts, cities and counties can encourage safe disposal of household hazardous waste:

1. Provide a household hazardous waste collection program to assist households and *conditionally exempt small quantity generators* (CESGQs) in diverting such waste from the landfill or sewer. These programs also discourage illegal dumping.
2. Household hazardous waste programs can vary depending on the resources available to the city or county. Some collection options include permanent collection or exchange programs, special collection days, and local business collection sites. If your community has neither a permanent collection site nor a special collection day, local businesses may accept certain products for recycling or proper disposal.
3. Encourage citizens and businesses to use *environmentally preferable purchasing* practices. As consumers of hazardous products, cities and counties can institute environmentally preferable purchasing policies to look for safer alternatives when purchasing potentially hazardous products. If potentially hazardous products must be purchased, buy only what is needed, to avoid storing excess.

Resources

Need a permit?

Have a question?

Household Hazardous Waste Management: A Manual for One-Day Community Collection Programs

Household Hazardous Waste Poster

EPA Household Hazardous Waste Web page

There's Mercury in That? The Big Picture of Fluorescent Bulbs Brochure

Medical and Pharmaceutical Waste

What is it?

Medical waste is different from pharmaceutical waste. Medical waste includes all waste materials generated at health care facilities and waste that may be contaminated by blood, body fluids, or other potentially infectious materials. Pharmaceutical waste refers to discarded drugs, both prescription and over-the-counter.

Why should our community care?

The [Rules and Minimum Standards for Hospitals in Idaho](#) prescribe storage, handling, transport, and treatment requirements of medical waste for hospitals. Medical waste generated at clinics or at home is not required to be treated prior to being disposed of.

What can we do?

- Cities and counties may want to assess medical waste disposal for all projects prior to approval.
- Cities and counties may want to develop and implement [best management practices](#) for medical waste. DEQ recommends requiring infectious medical waste from all sources be disinfected, using effective treatments to assure the safety of operators and visitors at solid waste management sites.
- Owners and operators of solid waste management sites have the ultimate say over what they will and will not accept, including untreated medical waste, as long as it does not conflict with applicable state requirements.

Pharmaceutical waste

For information on pharmaceutical waste in Idaho, visit DEQ's [Pharmaceuticals and the Environment web page](#).

Resources

[Need a permit?](#)

[Have a question?](#)

For more information on pharmaceutical and medical waste, visit DEQ's [Pharmaceuticals and the Environment Web page](#).

Solid Waste

What is it?

Solid waste is 1) any garbage or refuse; 2) sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility; or 3) other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations and from community activities. It does not include solid or dissolved materials in domestic sewage, irrigation return flows, or industrial discharges.

Why should our community care?

Counties are required to manage solid waste within their jurisdictions. A county's primary responsibility is to establish ordinances to ensure proper management of solid waste. Part of this involves determining if the county wants to manage its own waste using a landfill, incinerator, or other in-county waste management option, or use a transfer station to haul the waste to another county or state.

Every waste management facility has siting, design, operation, closure, and post-closure requirements. A county must obtain multiple approvals from *DEQ* or the *Public Health District* before a new municipal solid waste landfill can accept waste. Review and approval authority is delegated as follows:

DEQ review/approval authority

Location restrictions and site certification

Standards for design

Ground water monitoring

Financial assurance for closure/post-closure care and corrective action

Public Health District review/approval authority

Standards for operation

Standards for closure

Standards for post-closure care

What can we do?

1. Prior to project approval, request that project information specify which requirements under the *Idaho Solid Waste Facilities Act* and Idaho's *Solid Waste Management Rules* apply. Types of waste management facilities and associated rules that cities and counties should be aware of include the following:

- *Conditionally Exempt Small Quantity Generator Management Facilities in Idaho*
- *Hazardous Waste Treatment, Storage, and Disposal Facilities in Idaho*
- *Incinerators in Idaho*

- [Landfills in Idaho](#)
 - [Processing Facilities in Idaho](#)
 - [Transfer Stations in Idaho](#)
 - [Wood or Mill Yard Debris Facilities in Idaho](#)
2. Understand how waste will be managed prior to approving projects. No trash or other solid waste should be buried, burned, or otherwise disposed of at any site that is not permitted. Disposal methods are regulated by various state regulations. Note that solid waste management facilities or landfills can be privately or publicly owned. If a municipal solid waste landfill is privately owned, it is required to apply for review by a site review panel, receive a siting license from DEQ, and pay a site license fee to cover the cost of reviewing the site license application.
 3. Plan ahead. With the following efforts, local governments can better manage waste:
 - Determine the capacity, life expectancy, and expansion limits of your landfill.
 - Reduce waste to increase the life expectancy of your landfill. This can be accomplished by reducing waste at the source, reusing waste, [composting](#), and [recycling](#).
 - Recycling, like garbage collection in Idaho, is an optional service provided at the discretion of local governments or by private recycling companies. The level of recycling service (curbside vs. self haul) and the number of commodities collected (paper, aluminum, etc.) differ depending on resources available and a community's geographical location to recycling markets (different commodities may have different markets). Because each community has unique resources, the recycling and diversion solutions for one community may differ from those of another. Determine what works best for your community. For more information on developing a recycling program contact DEQ at (208) 373-0124. See also [Recycling in Idaho: Profiles of Community Recycling Programs](#).
 - Develop a “[pay-as-you-throw](#)” program, where citizens pay for each can or bag of trash they set out for disposal rather than pay a flat fee. When households reduce waste at the source by consuming less, reusing waste, or recycling, they dispose of less trash and pay lower trash bills. This can help extend the life of landfills.
 - Implement a green purchasing policy in city and county departments to reduce the toxicity and quantity of items purchased and increase the purchase of products with higher recycling content and durability.
 - Divert green waste from the landfill. Wood and yard waste, which includes lumber, pruned branches, shrubs or bushes, stumps, whole trees, leaves, and grass clippings, can come from construction, demolition, and maintenance of streets, yards, and parks. Such waste represents a significant part of the total amount of solid waste disposed of. [Recycling and reuse activities](#) for wood and yard waste include wood chipping to be used for fuel supplements at electricity co-generation plants; mulching to be used for landscaping, compost feedstock, and cattle bedding; and composting to be used as a soil amendment.
 - Develop a reuse and disposal program for household hazardous wastes such as latex and oil-based paint, stain and primer, wood care products, cleaning products, automotive products, and fertilizers.

- Remember that owners and operators of solid waste management sites have the ultimate say in what they will and will not accept, as long as it does not conflict with applicable state requirements. Such sites may choose to reject, for instance, untreated medical waste, electronic waste, animal waste, and household hazardous waste. Alternative management options should be considered if certain waste streams are not accepted for disposal at the local landfill. Additionally, local governments have the authority to implement ordinances to better manage solid waste beyond federal and state regulations and laws. Determine what is best for the health and welfare of your community.

Resources

Need a permit?

Have a question?

For more information on solid waste, visit DEQ's *Solid Waste Web page*.

Recycling in Idaho: Profiles of Community Recycling Programs

DEQ's Online Recycling Directory

Green Purchasing Resources

Alternative Fuels and Vehicles

Biobased Products

Buy Recycled

Energy Star

Environmentally Preferable Purchasing

Priority Chemicals

Office of the Federal Environmental Executive

National Institute of Government Purchasing

Center for a New American Dream

EPP Contracts Database

U.S. Communities

Responsible Purchasing Networks

Green Meeting Resources

Blue Green Meetings

EPA Green Meetings

Green Meeting Industry Council

Meeting Strategies Worldwide

Waste Tires

What is it?

Under the Idaho [Waste Tire Disposal Act](#), municipal solid waste landfills are the only sites in Idaho where waste tires can be disposed of after demonstrating specified volume reduction. Disposal refers to tires at their end of life; storage of new or usable tires is regulated by the county or city.

Why should our community care?

Counties/cities are required to issue written approvals for waste tire storage sites and collect from them a financial assurance of \$2.50 per tire authorized to be stored. Conditional use permit requirements or other processes where written approval is issued can be used for waste tire storage sites. If counties do not have the personnel or funding to oversee a waste tire program, they may ask DEQ to assume this responsibility.

Abandoned tire piles pose a serious fire threat that can result in air, surface water, and ground water impacts. Discarded tires are also a breeding ground for disease-carrying pests and rodents, including mosquitoes that carry the West Nile virus.

What can we do?

1. Prior to project approval, request that project information specify which requirements under Idaho's 2003 [Waste Tire Disposal Act](#) apply.
2. For all projects that include the transportation of waste tires, check with DEQ prior to approval. Waste tire transporters can only transport waste tires to an approved waste tire storage site.
3. Plan ahead by developing a waste tire recycling program. Recycling opportunities for tires include the following:
 - tire-derived fuel
 - embankment fill (tire shreds only) in accordance with generally accepted engineering practices
 - alternate daily cover at landfills (upon approval)
 - mulch (tire shreds only)

Resources

[Need a permit?](#)

[Have a question?](#)

For more information on waste tires, visit DEQ's [Waste Tire Web page](#).

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CHAPTER 5. SPECIAL ENVIRONMENTAL CONCERNS

This chapter covers the following special environmental concerns:

- Brownfields
- Concentrated (or confined) animal feeding operations (CAFOs)
- Construction activities
- Emergency response
- Inactive or abandoned mining areas
- Pesticides
- Petroleum storage or fueling
- Ponds
- Salvage yards and vehicle/equipment storage
- Other projects

Brownfields

Assess proposed development projects or any abandoned or underutilized properties in your community for the potential to use Brownfields funds or assistance.

Brownfields are properties for which the expansion, redevelopment, or reuse may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Abandoned or underutilized properties result in wasted infrastructure, development of green space on the edge of town, and blight in urban and neighborhood areas. Communities may struggle to find new uses for brownfields, whether as a neighborhood park or as a new commercial or retail use, unless and until the environmental issues are resolved. Cleaning up and reinvesting in these properties increases local tax bases; facilitates job growth; utilizes existing infrastructure; takes development pressures off of undeveloped, open land; and both improves and protects the environment.

Local governments can use the Brownfields Program to revitalize properties or buildings in their communities by requesting a brownfields assessment, applying for an assessment or clean-up grant, adding a property to DEQ's Brownfield Inventory, or proposing a brownfield site to DEQ. Local governments do not have to own the property in order to ask DEQ to conduct an assessment.

For more information on this program, visit DEQ's [Brownfields Web page](#).

Concentrated (or Confined) Animal Feeding Operations

The following information should be reviewed for projects that involve concentrated (or confined) animal feeding operations (CAFOs):

1. The *Idaho State Department of Agriculture* (ISDA) is the primary agency that regulates CAFOs. Prior to approving a CAFO, please contact ISDA.
2. A *CAFO siting* process conducted prior to approving a CAFO permit can help determine environmental risks. Projects may qualify for a state CAFO siting through ISDA. If a county requests a siting through ISDA, representatives from the Idaho Department of Water Resources, ISDA, and DEQ may review a site proposed for a CAFO, determine environmental risks, and submit a site-suitability determination.
3. For proposed CAFOs, consider a requirement for an odor management plan, as the development of such a plan is not included within the CAFO siting process. (See the *odor control section*.)
4. Contact *EPA* for more information on CAFOs.

Construction Activities

Disturbances of soil and rock during construction can create significant potential for erosion and sedimentation of nearby canals, streams, rivers, and lakes.

1. To protect surface water, consider requiring implementation of *best management practices* for projects that disturb soil or rock. The *Idaho Erosion and Sediment Control Field Guide* may be referenced to assist in developing these practices.
2. Construction sites are required to obtain *permit* coverage to discharge *storm water* to a water body or to a municipal storm sewer from EPA. If a project involves de-watering of ground water during excavation, any discharges from this process will need treatment to prevent excessive sediment and turbidity from entering surface water. If the project disturbs more than one acre of land, a storm water permit from the U.S. Environmental Protection Agency (EPA) may also be needed.

The Construction General Permit. If a construction project disturbs more than one acre of land (or is part of a larger common development that will disturb more than one acre), the operator is required to apply for permit coverage from EPA after developing a site-specific Storm Water Pollution Prevention Plan.

Storm Water Pollution Prevention Plan. To obtain the *Construction General Permit*, operators must develop a site-specific *Storm Water Pollution Prevention Plan*. Operators must document the erosion, sediment, and pollution controls they intend to use, inspect the controls periodically, and maintain best management practices through the life of the project.

Resources

Role of Local Governments in Implementing the NPDES Storm Water Program for Construction Sites

Emergency Response

Successful emergency response requires planning ahead for situations that may cause immediate and serious harm to people or the environment. Potential emergency response situations could include the following:

- *waste management and remediation*
- *air pollution*
- *drinking water security*

Waste Management and Remediation Emergencies

To report a spill or accident involving oil, gas, hazardous materials, anthrax, or explosives, contact the state Communications Center at 1 (800) 632-8000 or (208) 846-7610. The call will activate Idaho's Emergency Response Network, which consists of state and local agencies (including designated DEQ field personnel and four regional response teams), and, if necessary, federal agencies. The network will take the following steps:

- Coordinate state and federal emergency response, recovery, and mitigation operations during emergencies and disasters.
- Provide technical support to local jurisdictions involved in local emergencies and disasters that do not require human and material resources from the state.
- Ensure state and local preparedness, response, and recovery plans are consistent with the state's emergency management goals and procedures.
- Coordinate all requests from state and local governments for disaster emergency assistance.

For more information, visit DEQ's [Waste Management and Remediation Emergency Response Web page](#).

Air Pollution Emergencies

Under the [Air Pollution Emergency Rule](#), DEQ is authorized to take appropriate action when levels of regulated air pollutants cause or are predicted to cause a health emergency. Table 1 below shows the four stages or levels of an emergency, with each stage addressing a progressively more serious air quality event.

Table 1. Stages of an Air Pollution Emergency

Stage	Title	Description
1	Forecast/Caution	The National Weather Service issues an Atmospheric Stagnation Advisory, or an equivalent local forecast is issued, triggering an internal watch by DEQ.
2	Alert	Air quality has degraded, requiring industrial sources to begin air pollution control actions.
3	Warning	Air quality has further degraded, requiring control actions to maintain or improve air quality.
4	Emergency	Air quality has degraded to a level that will substantially endanger public health, requiring implementation of the most stringent control actions.

For more information, visit DEQ's [Air Pollution Emergencies Web page](#).

Drinking Water Security

Under the federal [Public Health Security and Bioterrorism Preparedness and Response Act](#) (known as the Bioterrorism Act), the [Safe Drinking Water Act](#) was amended to require community water systems that serve populations greater than 3,300 to implement new security measures. The measures are designed to help protect the supply of safe [drinking water](#) and maintain an adequate supply of water for fire fighting (see [fire protection](#) section) in the event of natural disasters such as earthquakes and drought and disasters caused by humans, including vandalism and terrorist attacks.

Vulnerability Assessments

The federal Bioterrorism Act requires community water systems serving populations greater than 3,300 to conduct a vulnerability assessment (VA) to evaluate weaknesses to potential threats, identify steps that can reduce the risk of serious consequences from attack or acts of vandalism, and prepare an emergency response plan incorporating the results of the VA. Although smaller systems are not required to comply, DEQ urges all water systems to prepare these security aids for their own protection. A self-assessment guide to assist all water systems in completing a VA can be found on the [Association of State Drinking Water Administrators' Web site](#). For more information, visit DEQ's [Drinking Water Security Web page](#).

Idaho Water Area Response Network

Another resource is the Idaho Water Area Response Network (IDWARN), which all water systems can join. This network is modeled on the "utilities helping utilities" concept, which gives water/wastewater utilities the opportunity to be more resilient during disaster response and recovery. IDWARN is designed to provide quick and professional assistance in any situation that overwhelms the capabilities of a water/wastewater utility. No formal declaration of emergency is needed, and assistance can take the form of personnel, equipment, materials, or services. A member utility may request deployment of emergency

support to restore critical operations at the affected water/wastewater utility. Water systems are encouraged to participate in this networking resource. Additional information can be found at www.IDWARN.org.

Private Wells

Private well owners are responsible for the safety of their water. While not a requirement, it is recommended that private drinking water wells be tested for common contaminants at least once per year. Testing for bacteria and nitrate is common; however depending upon the area, land use activity, and well construction standards used, it may be reasonable to test for other potential contaminants. Questions regarding specifics related to private well testing should be directed to local *Public Health Districts*. (See *projects that use individual wells* for more information.)

Inactive or Abandoned Mining Areas

The following information should be reviewed for projects that involve inactive or abandoned mining areas.

1. Cities and counties, especially those with a high occurrence of mining activities, are responsible for how development occurs in their jurisdictions and should take mining and mining waste issues into consideration when developing planning and zoning ordinances and/or promoting new development.
2. Local governments are responsible for public safety, so risk-based management decisions should be used to minimize the human health and ecological risks associated with new development in inactive or abandoned mining areas.
3. If cities or counties are purchasing or developing new property, it is important to conduct due diligence on the property to determine potential on-site contamination and the need for risk management.

The *Voluntary Cleanup Program* encourages innovation and cooperation among the state, communities, and private parties working to revitalize properties with hazardous substance or petroleum contamination.

Brownfields are abandoned or underutilized properties where the reuse is complicated by actual or perceived environmental contamination. The *Brownfields Revitalization Program* is a joint program between the U.S. Environmental Protection Agency and DEQ to help local governments redevelop brownfield sites in their communities by funding and conducting site assessments when a lack of environmental information is complicating site redevelopment or reuse.

Pesticides

Pesticide-laden water can travel through the soil to ground water or run off to surface water. To minimize pesticide pollution to water, the following are good practices:

- Develop and implement best management practices for pesticides.
- Assure that pesticide suppression activities acknowledge and incorporate the state and federal rules and regulations for air, water, waste, and the overall environment.
- Assure that streams and surface waters are avoided when pesticides are applied to the land.
- Review the suggestions in the [ponds section](#).

Contact the [Idaho State Department of Agriculture](#) for more information; they are the state regulatory agency responsible for administering the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) in Idaho.

Petroleum Storage or Fueling

The following information should be reviewed for projects that involve petroleum storage or fueling.

1. Review projects for the potential to contaminate soil and ground water and consider requiring implementation of best management practices.
2. There are tanks that are not regulated. Develop and use best management practices for facilities and persons that store and use materials that have the potential to contaminate soil and ground water. This includes assistance with selecting, designing, installing, and maintaining secondary containment systems. Reference federal and state regulations that you may want to apply to unregulated tanks (for instance, heating oil tanks), such as the [Idaho Underground Storage Tank Act](#) or the [Spill Prevention, Control, and Countermeasure \(SPCC\) Rule](#).
3. Operating a facility with fueling activities or operations may require the transportation, storage, use, and disposal of petrochemicals and other harmful materials. Implement best management practices to assure that such materials are handled and transported correctly to avoid discharges to surface or ground water. Note that Idaho's [Water Quality Standards](#) define a release as, "Any unauthorized spilling, leaking, emitting, discharging, escaping, leaching, or disposing into soil, ground water, or surface water" (IDAPA 58.01.02.10.76). Petroleum releases to the environment must be reported. [IDAPA 58.01.02 \(Sections 850, 851, and 852\)](#) discusses reporting and corrective actions.
4. Prior to project approval, request that project information specify:
 - If EPA oversight is required under the [Spill Prevention, Control, and Countermeasure \(SPCC\) Rule](#).
 - If [DEQ](#) oversight or notification is required.
 - If any tanks will be reused, they must be registered and tested and meet federal and state guidelines. The city or county may want to confirm that the requirements have been met. DEQ discourages the use of removed underground storage tanks for above-ground storage of fuel. Contact DEQ to discuss these concerns.
5. Consider a requirement that petroleum storage tanks have pollution liability insurance. Idaho's [Petroleum Storage Tank Fund](#) provides insurance coverage to owners of all eligible unregulated tanks used to store petroleum either aboveground or underground, including farm, ranch, home, and commercial heating oil tanks.
6. Local governments have the authority to implement ordinances that help prevent ground water contamination and restrict hazardous waste management beyond federal or state laws or regulations. Determine what is best for the health and welfare of your community.

Resources

For more information, visit DEQ's [Underground Storage Tank Web page](#).

[Vehicle and Equipment Fueling Best Management Practices](#)

Fleet or Equipment Fueling Design Features

I Have a Home Heating Oil Tank—What Do I Need to Do?

Above Ground Storage Tanks

Salvage Yard Compliance Checklist

A Summary of DEQ's Underground Storage Tank Rules

Ponds

Two types of ponds that local governments should be aware of include 1) gravel pit ponds, which have a high potential of affecting ground water quality because water can move rapidly through gravel and sand and thus carry pollutants to ground water, and 2) aesthetic water use ponds, which can include ponds located in golf courses or subdivisions.

1. Plan ahead by developing and using a comprehensive land use management plan that includes best management practices for ponds. Ponds can develop water quality problems that include algae, scum, stagnation, mosquitoes, and odor.
2. Determine the water source and water rights required for proposed ponds.
3. Pesticides and other contaminants can enter surface water through runoff, soil erosion, spray drift, misapplication, or spillage and infiltrate to ground water through the soil. DEQ encourages ponds to be constructed and maintained to comply with the *Ground Water Quality Rule (IDAPA 58.01.11)*.
4. Use best management practices to help maximize the protection of human health and the environment. Best management practices for ponds may include aeration, buffer strips, pesticide and fertilizer regulation, pond liners, or ground water monitoring.
5. Ponds can provide habitat for many animal species and insects. Contact *Idaho Fish and Game* and the *Public Health District* for recommendations.

Salvage Yards or Vehicle/Equipment Storage

The following information should be reviewed for projects that involve salvage yards or vehicle/equipment storage.

1. Review projects for the potential to contaminate soil and ground water and consider requiring implementation of best management practices.
2. Determine if there will be petroleum storage or fueling with a project. If so, reference the [petroleum storage or fueling section](#).
3. Prior to project approval, request that project information specify which requirements apply. Reference the [Salvage Yard Compliance Checklist](#). Note the limitations of state and federal rules and determine if additional requirements may be needed to protect the health and welfare of your community.
4. As in other facilities, it must be determined if any solid waste is hazardous waste. If so, the hazardous waste must be managed appropriately according to the [hazardous waste determination](#). Salvage yards may generate solvents, paint, mercury switches, and other auto fluids. If used oil is generated and recycled or burned for energy recovery, consult Idaho's Rules and Standards for Hazardous Waste, [Standards for the Management of Used Oil \(IDAPA 58.01.05.15\)](#).

Other Projects

See DEQ's Web page at www.deq.idaho.gov/multimedia_assistance/business.cfm to find out about environmental regulations impacting businesses and link to general and industry-specific assistance, forms, checklists, guidance documents, and other helpful information for small and large businesses.

CHAPTER 6. RESOURCES

Idaho Department of Environmental Quality Pollution Prevention (P2) Program

DEQ's P2 Program works with Idaho's businesses to prevent pollution and conserve resources. DEQ's P2 specialist can provide on-site or remote assistance on issues related to air, waste, water, conservation, and sustainability.

DEQ's Idaho Drinking Water Newsletter

Published quarterly by the Idaho Department of Environmental Quality.

DEQ's Online Recycling Directory

This online directory is designed to help residents and businesses identify safe recycling and management options for waste. It includes community and business facilities that recycle common waste products, analytical laboratories, waste transporters, and waste exchanges.

Local Government Environmental Assistance Network

The Local Government Environmental Assistance Network (LGEAN) is a "first-stop shop" providing environmental management, planning, funding, and regulatory information for elected and appointed local government officials, managers, and staff. LGEAN enables local officials to interact with their peers and others online. In an effort to reach all local governments, LGEAN also manages a toll-free telephone service (877/865-4326).

Cities Go Green Sustainability Magazine

A digital and print magazine focused on helping cities and other local governments become sustainable.

ICLEI – Local Governments for Sustainability

ICLEI is an international association of local governments as well as national and regional local government organizations that have made a commitment to sustainable development. ICLEI provides technical consulting, training, and information services to build capacity, share knowledge, and support local government in the implementation of sustainable development at the local level.

Mayors Climate Protection Center

Douglas H. Palmer, Mayor of Trenton, New Jersey and President of The U.S. Conference of Mayors, and Conference Executive Director Tom Cochran officially launched The U.S. Conference of Mayors Climate Protection Center on February 20, 2007, in recognition of an increasingly urgent need to provide mayors with guidance and assistance to lead their cities' efforts to reduce greenhouse gas emissions linked to climate change.

Sustainable Communities Network

This Web site links citizens to resources and to one another to create healthy, vital, and sustainable communities.

Institute for Local Self-Reliance

The Institute's mission is to provide innovative strategies, working models, and timely information to support environmentally sound and equitable community development.

EPA Local Government Resources Center

Local governments are on the front lines of environmental protection. This compendium is designed to help local government officials and other community leaders find online sources of information, tools, and other resources that can help them build greener communities.

Waste Reduction Resource Center: Resources for Local Governments

This Web site contains a list of case studies of local government pollution prevention projects and resources.

Smart Growth Resources

Smart Growth Network

The Smart Growth Network was formed in response to increasing community concerns about the need for new ways to grow that boost the economy, protect the environment, and enhance community vitality. The Network's partners include environmental groups, historic preservation organizations, professional organizations, developers, real estate interests, and local and state government entities. The Network works to encourage development that serves the economy, community, and the environment.

Smart Communities Network

This site offers resources, tools, links to articles and publications, and community success stories on a variety of topics from community energy to green development to sustainable business.

Planning Resources

Allen, Gary, Christopher Meyer, Deborah E. Nelson, and Franklin G. Lee. 2007. Idaho Land Use Handbook. Givens Pursley Attorneys at Law.

Arendt, Randall G. 1996. Best Development Practices. American Planning Association.

Arendt, Randall G. 1996. Conservation Design for Subdivisions. Island Press.

France, Robert L. 2002. Handbook of Water Sensitive Planning and Design. Lewis Publishers.

Witten, Jon and Scott Horsley. 1995. A Guide to Wellhead Protection. American Planning Association.

APPENDICES

The following appendices collect the Web links found throughout this guide.

- Appendix A. Introduction Links
- Appendix B. Air Links
- Appendix C. Water Links
- Appendix D. Waste Links
- Appendix E. Special Environmental Concerns Links
- Appendix F. Resource Links

Appendix A. Introduction Links

Local Land Use Planning Act (Idaho Code § 67-6537)

<http://www3.state.id.us/idstat/TOC/67065KTOC.html>

Appendix B. Air Links

Air Quality Index Web page

www.deq.idaho.gov/air/data_reports/monitoring/aqi.cfm

Air Toxics Web page

www.deq.idaho.gov/air/prog_issues/toxics/overview.cfm

- **Asbestos**
www.deq.idaho.gov/air/prog_issues/pollutants/asbestos.cfm
- **Hazardous Air Pollutants**
www.deq.idaho.gov/air/prog_issues/toxics/haps.cfm#haps
- **Lead**
www.deq.idaho.gov/air/prog_issues/pollutants/health.cfm#lead
- **Mercury**
www.deq.idaho.gov/waste/prog_issues/haz_waste/mercury_new.cfm

Avista Utility Tools

www.avistautilities.com/business/services/pages/default.aspx

Burn Bans

www.deq.idaho.gov/air/prog_issues/burning/bans.cfm

Burn Clean, Burn Smart Brochure

www.deq.idaho.gov/air/assist_citizen_comm/burn_clean_burn_smart_brochure.pdf

Burning and Smoke Management Web page

www.deq.idaho.gov/air/prog_issues.cfm#burn

Carbon Concierge

www.carbonconcierge.com

Cities for Climate Change Protection Program

www.iclei.org/index.php?id=800

Compost

www.epa.gov/waste/conserva/rrr/composting/index.htm

Criteria Pollutants

www.epa.gov/air/urbanair/

Crop Residue Burning

www.deq.idaho.gov/air/prog_issues/burning/crop_residue_burning.cfm

Dust Prevention and Control Plan

www.deq.idaho.gov/air/prog_issues/pollutants/dust_control_plan.pdf

Effective Public Transportation

<http://www.epa.gov/otaq/stateresources/index.htm>

Energy Policy Act (EPAct)

www1.eere.energy.gov/vehiclesandfuels/epact/index.html

ENERGY STAR

www.energystar.gov/

ENERGY STAR's Guide for Small Businesses and Using Renewable Energy

www.energystar.gov/index.cfm?c=sb_guidebook.sb_guidebook_renewable

ENERGY STAR for Local Government

www.energystar.gov/index.cfm?c=government.bus_government_local

EPA Asbestos Web page

www.epa.gov/asbestos/

EPA Climate Change and Waste

www.epa.gov/climatechange/wycd/waste/index.html

EPA Green Vehicle Guide

www.epa.gov/greenvehicles/Index.do;jsessionid=823083eef96b50427b7d

EPA Local Climate and Energy Program

www.epa.gov/RDEE/energy-programs/state-and-local/local-best-practices.html

Fine Particulate Matter

www.deq.idaho.gov/air/prog_issues/pollutants/health.cfm#pm

Fugitive Dust Web page

www.deq.idaho.gov/air/prog_issues/pollutants/dust.cfm

Green Power

www.epa.gov/greenpower/

Green Power Network

<http://apps3.eere.energy.gov/greenpower/about/index.shtml>

Greenhouse Gas Inventory

www.epa.gov/climateleaders/resources/inventory-guidance.html

Ground Level Ozone

www.deq.idaho.gov/air/prog_issues/pollutants/health.cfm#ozone

Have a Question?

http://www.deq.idaho.gov/about/contact_us.cfm

Highly Reflective Roofs

www.epa.gov/heatisland/mitigation/coolroofs.htm

Idaho Chemical Roundup Program

www.deq.idaho.gov/waste/educ_tools/chemical_roundup.cfm

Idaho Clean Air Zone

www.deq.idaho.gov/air/assist_citizen_comm/clean_air_zone_idaho/index.cfm

Idaho Office of Energy Resources Industrial Efficiency Program

<http://energy.idaho.gov/energyefficiency/industrial.shtml>

Idaho Office of Energy Resources Building Efficiency Program

<http://energy.idaho.gov/energyefficiency/building.shtml>

Idaho Power Energy Efficiency for Your Business

www.idahopower.com/EnergyEfficiency/Business/default.cfm?tab=Business

IDAPA 58.01.01.201

<http://adm.idaho.gov/adminrules/rules/idapa58/0101.pdf>

IDAPA 58.01.01.550-562 and 600-617

<http://adm.idaho.gov/adminrules/rules/idapa58/0101.pdf>

IDAPA 58.01.01.651

<http://adm.idaho.gov/adminrules/rules/idapa58/0101.pdf>

IDAPA 58.01.01.776

<http://adm.idaho.gov/adminrules/rules/idapa58/0101.pdf>

LEED Criteria

www.usgbc.org/DisplayPage.aspx?CategoryID=19

Light it Right Brochure

www.idl.idaho.gov/nat_fire_plan/ideas_worth_sharing/burning2005brochure.pdfLight%20it%20Right

Mayors Climate Protection Center

www.usmayors.org/climateprotection/

Municipal Buildings

www.energystar.gov/index.cfm?c=government.bus_government

National Ambient Air Quality Standards (NAAQS)

www.epa.gov/air/criteria.html

National Lead Free Wheel Weight Initiative

www.epa.gov/osw/hazard/wastemin/nlffwwi.htm

National Renewable Energy Laboratory

www.nrel.gov/learning/small_business.html

Need a Permit?

www.deq.idaho.gov/air/permits_forms/permitting/overview.cfm

Odor Web page

www.deq.idaho.gov/air/prog_issues/pollutants/odors.cfm

Offset Consumer

www.offsetconsumer.org/providers/

Open Burning and Burn Ban Rules (Sections 550-562 and 600-623)

<http://adm.idaho.gov/adminrules/rules/idapa58/0101.pdf>

Open “Outdoor” Burning

www.deq.idaho.gov/air/prog_issues/burning/open_burning_overview.cfm

Outdoor Burning Poster

www.deq.idaho.gov/air/prog_issues/burning/outdoor_burning_poster.pdf

Particulate Matter

www.deq.idaho.gov/air/prog_issues/pollutants/health.cfm#pm

Pedestrian- and Biker-Friendly Travel Routes

<http://www.epa.gov/smartgrowth/>

PTC Web page

www.deq.idaho.gov/air/permits_forms/permitting/ptc.cfm

Residential "Backyard" Burning

www.deq.idaho.gov/air/prog_issues/burning/residential.cfm

Road to Cleaner Air Tool Kit

www.deq.idaho.gov/air/assist_business/road_to_cleaner_air.cfm

Rules for the Control of Air Pollution in Idaho (Section 201)

<http://adm.idaho.gov/adminrules/rules/idapa58/0101.pdf>

Rules for the Control of Air Pollution in Idaho (Section 651)

<http://adm.idaho.gov/adminrules/rules/idapa58/0101.pdf>

Rules for the Control of Air Pollution in Idaho (Section 776)

<http://adm.idaho.gov/adminrules/rules/idapa58/0101.pdf>

Rules for the Control of Air Pollution in Idaho (Sections 600-617 and 550-562)

<http://adm.idaho.gov/adminrules/rules/idapa58/0101.pdf>

Trade Waste

www.deq.idaho.gov/air/prog_issues/burning/trade_waste.cfm

U.S. Department of Energy Alternative Fuels and Advanced Vehicles Data Center

www.afdc.energy.gov/afdc/

U.S. Department of Energy Consumer's Guide: Renewable Energy

http://apps1.eere.energy.gov/consumer/renewable_energy/

U.S. Department of Energy: Idaho State Incentive and Resource Programs

www1.eere.energy.gov/industry/about/state_activities/incentive_search.asp?ac=su&stid=ID

U.S. Department of Energy Industrial Technologies Program

www1.eere.energy.gov/industry/saveenergynow/

Volatile Organic Compounds (VOCs)

www.epa.gov/iaq/voc.html

Wildland Fires

www.deq.idaho.gov/air/prog_issues/burning/wildland.cfm

Wood Recycling

www.epa.gov/waste/conserva/materials/organics/woodwaste.htm

Wood Stoves

www.deq.idaho.gov/air/prog_issues/burning/woodstoves.cfm

Appendix C. Water Links

319 Grants

www.deq.state.id.us/water/prog_issues/surface_water/nonpoint.cfm#management

Arsenic

www.deq.state.id.us/water/data_reports/ground_water/arsenic_county_level.pdf

Brownfields

www.deq.idaho.gov/Applications/Brownfields/index.cfm?site=brownfields.htm

DEQ Regional Offices

www.deq.idaho.gov/about/contact_us.cfm

Drinking Water and Wastewater in Idaho: Guidance for Engineers and Developers

www.deq.idaho.gov/water/assist_business/engineers/index.cfm

Drinking Water Source Protection Plan

www.deq.idaho.gov/water/prog_issues/source_water/protection.cfm

Drinking Water Web page

www.deq.idaho.gov/water/prog_issues.cfm#Drink

Environmental Protection and Health Act (I.C. § 39-126)

www3.state.id.us/idstat/TOC/39001KTOC.html

EPA Funding

<http://cfpub.epa.gov/safewater/sourcewater/sourcewater.cfm?action=funding>

EPA Source Water Protection Local Government Resources

<http://permanent.access.gpo.gov/lps21800/www.epa.gov/safewater/protect/localgov.html>

EPA Stormwater Program

http://cfpub1.epa.gov/npdes/home.cfm?program_id=6

Evaluating the Effectiveness of Municipal Stormwater Programs

www.epa.gov/npdes/pubs/region3_factsheet_swmp.pdf

Fire Marshall and State Fire Marshall

http://www.doi.idaho.gov/sfm/fm_directory.aspx

Funding Stormwater Programs

www.epa.gov/npdes/pubs/region3_factsheet_funding.pdf

Ground Water Quality Rule (IDAPA 58.01.11)

<http://adm.idaho.gov/adminrules/rules/idapa58/0111.pdf>

Ground Water Web page

www.deq.idaho.gov/water/prog_issues.cfm#Source

Have a Question?

www.deq.idaho.gov/about/contact_us.cfm

Idaho Code §39-118

www3.state.id.us/cgi-bin/newidst?sctid=390010018.K

Idaho Code §39-118 and 39-103(12)

www3.state.id.us/cgi-bin/newidst?sctid=390010018.K

Idaho Code §39-118.2.d

www3.state.id.us/cgi-bin/newidst?sctid=390010018.K

Idaho Code Section 41-253

<http://www3.state.id.us/cgi-bin/newidst?sctid=410020053.K>

Idaho Department of Water Resources

www.idwr.idaho.gov/about/regions.htm

Idaho Drinking Water Newsletter

www.deq.state.id.us/water/assist_business/pws/newsletters.cfm

Idaho Ground Water Quality Plan

www.deq.idaho.gov/water/data_reports/ground_water/idaho_gw_quality_plan_final_entire.pdf

Idaho Rules for Public Drinking Water Systems (IDAPA 58.01.08)

<http://adm.idaho.gov/adminrules/rules/idapa58/0108.pdf>

Idaho Rules for Public Drinking Water Systems

<http://adm.idaho.gov/adminrules/rules/idapa58/0108.pdf>

Idaho Underground Storage Act

www3.state.id.us/idstat/TOC/39088KTOC.html

Idaho Water Quality Standards

<http://adm.idaho.gov/adminrules/rules/idapa58/0102.pdf>

Idaho's Individual/Subsurface Sewage Disposal Rules

<http://adm.idaho.gov/adminrules/rules/idapa58/0103.pdf>

Idaho's Wastewater Rules

<http://adm.idaho.gov/adminrules/rules/idapa58/0116.pdf>

Idaho's Wastewater Rules (IDAPA 58.01.16)

<http://adm.idaho.gov/adminrules/rules/idapa58/0116.pdf>

Local Land Use Planning Act (I.C. § 67-6537)

www3.state.id.us/idstat/TOC/67065KTOC.html

Low Impact Development Center

www.lowimpactdevelopment.org/

Memorandum of Understanding (Public Health Districts)

www.deq.idaho.gov/rules/mous/deq_phds.pdf

Memorandum of Understanding (State Plumbing Bureau)

www.deq.idaho.gov/rules/mous/deq_plumbing_bureau.pdf

NACo County Code and Ordinances

www.naco.org/Template.cfm?Section=Codes_and_Ordinances&Template=/cffiles/counties/codes_srch.cfm

National Pollutant Discharge Elimination System (NPDES) permit

<http://cfpub.epa.gov/npdes/index.cfm>

Need a Permit?

www.deq.idaho.gov/water/permits_forms/permitting/overview.cfm

Nitrate

www.deq.idaho.gov/water/prog_issues/ground_water/nitrate.cfm

Nitrate Priority Areas

www.deq.idaho.gov/WATER/prog_issues/ground_water/nitrate.cfm#ranking

NPDES Permit

<http://cfpub.epa.gov/npdes/index.cfm>

Nutrient-Pathogen Evaluations

www.deq.idaho.gov/water/prog_issues/waste_water/np_evaluations.cfm

One Plan

www.oneplan.org/

Permit (Construction activities)

<http://cfpub.epa.gov/npdes/stormwater/const.cfm>

Pollution Prevention for Public Water Systems

www.deq.idaho.gov/WATER/assist_business/pws/p2.cfm

Pollution Prevention Handbook: Sewage and Wastewater Treatment Plants

www.p2pays.org/ref/07/06631.pdf

Pollution Prevention in Wastewater Collection and Treatment

<http://epa.gov/tribalcompliance/wwater/wwwastedrill.html#prevention>

Pollution Prevention Measures (Public Water System)

www.deq.idaho.gov/WATER/assist_business/pws/p2.cfm

Pollution Prevention Measures (Wastewater Treatment Plant)

<http://epa.gov/tribalcompliance/wwater/wwwastedrill.html#prevention>

Public Drinking Water Systems

www.deq.idaho.gov/water/prog_issues/drinking_water/information_pws.cfm

Public Health Districts

www.idaho.gov/health_safety/health.html

Public Water System Switchboard

www.deq.idaho.gov/Applications/SDWISReports/pws_index.cfm

Rules for the Reclamation and Reuse of Municipal and Industrial Wastewater (IDAPA 58.01.17)

<http://adm.idaho.gov/adminrules/rules/idapa58/0117.pdf>

Search for an Operator

www.deq.idaho.gov/Applications/WDDWOper/WDDWSearchContractOperatorInfo.cfm

Source Water Assessments

www.deq.idaho.gov/water/prog_issues/source_water/assessment.cfm#definition

Source Water Protection Grants

www.deq.state.id.us/water/prog_issues/source_water/protection.cfm#source

Source Water Web page

www.deq.idaho.gov/water/prog_issues.cfm#Source

Spill Prevention, Control, and Countermeasure (SPCC) Rule

www.epa.gov/OEM/content/spcc/index.htm

State Plumbing Bureau

<http://dbs.idaho.gov/plumbing>

Storm Drain Marking Program

www.deq.idaho.gov/water/prog_issues/storm_water/storm_drain_marking.cfm

Storm Water Web page

www.deq.idaho.gov/water/prog_issues.cfm#Storm

Stormwater Management Techniques

www.epa.gov/greeningepa/stormwater/stormwater_techniques.htm

Subsurface Treatment and Disposal System (SSDS)

www.deq.idaho.gov/water/prog_issues/waste_water/onsite_septic_systems.cfm

TMDL

www.deq.idaho.gov/water/data_reports/surface_water/tmdls/overview.cfm

Understanding Impaired Waters and TMDL Requirements for Municipal Stormwater

www.richmondgov.com/dpu/docs/UnderstandingImpairedWaters&TotalMaximumDailyLoad.pdf

Wastewater Reuse Permit

www.deq.idaho.gov/water/permits_forms/permitting/wlap.cfm

Wastewater Web page

www.deq.idaho.gov/water/prog_issues.cfm#wastewater

Watershed Advisory Groups

www.deq.state.id.us/water/data_reports/surface_water/tmdls/overview.cfm#BAGs

Appendix D. Waste Links

Alternative Fuels and Vehicles

www.eere.energy.gov/afdc/index.html

Best Management Practices (medical waste)

www.deq.idaho.gov/multimedia_assistance/hospitals/med_waste_bmps_fs_0308.pdf

Biobased Products

www.biobased.oce.usda.gov/

Blue Green Meetings

www.bluegreenmeetings.com/

Brownfields Web site

www.deq.idaho.gov/Applications/Brownfields/index.cfm?site=brownfields.htm

Buy Recycled

www.epa.gov/cpg

Center for a New American Dream

www.newdream.org

Compost

www.epa.gov/waste/consERVE/rrr/composting/index.htm

Conditionally Exempt Small Quantity Generators (CESQG)

www.deq.idaho.gov/waste/assist_business/haz_waste/status.cfm#cesqg

Conditionally Exempt Small Quantity Generator Management Facilities in Idaho

www.deq.idaho.gov/waste/assist_business/solid_waste/cesqg_regulation.cfm

DEQ (contact information)

www.deq.idaho.gov/about/contact_us.cfm

DEQ's Compliance/Technical Assistance Program

www.deq.state.id.us/multimedia_assistance/compliance/compliance.cfm#technical

DEQ's Online Recycling Directory

www.deq.idaho.gov/waste/recycling/recycle_home.cfm

Electronics

www.deq.idaho.gov/waste/prog_issues/haz_waste/ewaste.cfm

Energy Star

www.energystar.gov/

Environmentally Preferable Purchasing

www.epa.gov/epp/index.htm

EPA Green Meetings

www.epa.gov/oppt/greenmeetings

EPA Household Hazardous Waste Web site

www.epa.gov/osw/conserves/materials/hhw.htm

EPP Contracts Database

www.epa.gov/oppt/epp/database.htm

Generator Status

www.deq.idaho.gov/waste/assist_business/haz_waste/status.cfm

Green Meeting Industry Council

www.greenmeetings.info/

Ground Water Contamination Rule, Section 400.01

<http://adm.idaho.gov/adminrules/rules/idapa58/0111.pdf>

Ground Water Quality Rule

<http://adm.idaho.gov/adminrules/rules/idapa58/0111.pdf>

Have a Question?

www.deq.idaho.gov/about/contact_us.cfm

Hazardous Waste Management in Idaho: Information for Businesses

www.deq.idaho.gov/waste/assist_business/haz_waste/index.cfm

Hazardous Waste Treatment, Storage, and Disposal Facilities in Idaho

www.deq.idaho.gov/waste/permits_forms/permitting/haz_waste/tsd.cfm

Household Hazardous Waste: A Manual for One-Day Community Collection Programs

www.epa.gov/epawaste/conserves/materials/pubs/manual/index.htm

Household Hazardous Waste Poster

www.deq.idaho.gov/waste/assist_citizen_comm/hhw_poster.pdf

Hazardous Waste Web page

www.deq.idaho.gov/waste/prog_issues.cfm

Idaho Ground Water Quality Plan

www.deq.state.id.us/water/data_reports/ground_water/idaho_gw_quality_plan_final_entire.pdf

Idaho Hazardous Waste Management Act

www3.state.id.us/idstat/TOC/39044KTOC.html

Idaho Rules and Minimum Standards for Hospitals

<http://adm.idaho.gov/adminrules/rules/idapa16/0314.pdf>

Idaho's Solid Waste Management Rules

<http://adm.idaho.gov/adminrules/rules/idapa58/0106.pdf>

Idaho's 2003 Waste Tire Disposal statute

www3.state.id.us/idstat/TOC/39065KTOC.html

Incinerators in Idaho

www.deq.idaho.gov/waste/assist_business/solid_waste/incinerator_regulation.cfm

Landfills in Idaho

www.deq.idaho.gov/waste/assist_business/solid_waste/landfill_regulation.cfm

Meeting Strategies Worldwide

www.meetingstrategiesworldwide.com/

National Institute of Government Purchasing

www.nigp.org/

Need a Permit?

www.deq.idaho.gov/waste/permits_forms/permitting/overview.cfm

Office of the Federal Environmental Executive

www.ofee.gov/gp/gp.asp

“Pay-as-You-Throw”

www.epa.gov/payt/

Pharmaceuticals and the Environment Web page

www.deq.idaho.gov/water/prog_issues/surface_water/pharmaceuticals/index.cfm

Priority Chemicals

www.epa.gov/epawaste/hazard/wastemin/priority.htm

Processing Facilities in Idaho

www.deq.idaho.gov/waste/assist_business/solid_waste/processing_regulation.cfm

Public Health District

www.healthandwelfare.idaho.gov/portal/alias__Rainbow/lang__en-US/tabID__3382/DesktopDefault.aspx

Recycling

www.deq.idaho.gov/waste/recycling/recycling.cfm

Recycling and reuse activities

www.epa.gov/epawaste/conserves/materials/organics/woodwaste.htm

Recycling in Idaho: Profiles of Community Recycling Programs

www.pause2preventpollution.com/waste/recycling/community_recycling_study_0903.pdf

Resource Conservation and Recovery Act

www.epa.gov/osw/inforesources/online/index.htm

Responsible Purchasing Networks

www.responsiblepurchasing.org/

Solid Waste Web site

www.deq.idaho.gov/waste/prog_issues.cfm#solid

Spills

www.deq.idaho.gov/waste/prog_issues/haz_waste/mercury_spill.cfm

Storage Tanks

www.deq.idaho.gov/waste/prog_issues.cfm#under

There's Mercury in That? The Big Picture of Fluorescent Bulbs Brochure

http://www.deq.idaho.gov/waste/assist_citizen_comm/fluorescent_bulb_disposal_0609.pdf

Transfer Stations in Idaho

www.deq.idaho.gov/waste/assist_business/solid_waste/transfer_regulation.cfm

U.S. Communities

www.uscommunities.org/

Waste Tire Disposal Act

www3.state.id.us/idstat/TOC/39065KTOC.html

Waste Tire Web page

www.deq.idaho.gov/waste/prog_issues/solid_waste/tires.cfm

Wood or Mill Yard Debris Facilities in Idaho

www.deq.idaho.gov/waste/assist_business/solid_waste/mill_regulation.cfm

Appendix E. Special Environmental Concerns Links

A Summary of DEQ's Underground Storage Tank Rules

www.deq.idaho.gov/waste/prog_issues/ust_lust/ust_rules_state_fs.pdf

Air Pollution Emergencies Web page

www.deq.idaho.gov/air/data_reports/monitoring/emergency.cfm

Air Pollution Emergency Rule

www.deq.state.id.us/air/prog_issues/burning/emerg_rule_fs.pdf

Above Ground Storage Tanks

www.deq.idaho.gov/waste/prog_issues/ust_lust/ast.cfm

Association of State Drinking Water Administrators (vulnerability assessment)

www.asdwa.org/index.cfm?fuseaction=document.showDocumentByID&DocumentID=157&varuniquuserid=95537258852

Best Management Practices (Construction activities)

www.deq.idaho.gov/multimedia_assistance/construction/overview.cfm

Brownfields Revitalization Program

www.deq.idaho.gov/Applications/Brownfields/index.cfm?site=brownfields.htm

Brownfields Web page

www.deq.idaho.gov/Applications/Brownfields/index.cfm?site=brownfields.htm

CAFO Siting

www.deq.state.id.us/water/prog_issues/agriculture/cafos.cfm#siting

Construction General Permit

<http://cfpub.epa.gov/npdes/stormwater/cgp.cfm>

Construction Sites

www.epa.gov/npdes/pubs/local_federal_web.pdf

DEQ

www.deq.idaho.gov/waste/prog_issues/ust_lust/index.cfm

DEQ Environmental Assistance for Businesses and Industry

www.deq.idaho.gov/multimedia_assistance/business.cfm

Drinking Water Security Web page

www.deq.idaho.gov/water/assist_citizen_comm/drinking_water/security.cfm

EPA (CAFO information)

<http://cfpub.epa.gov/npdes/afo/cafofinalrule.cfm>

Fleet or Equipment Fueling Design Features

www.deq.idaho.gov/water/data_reports/storm_water/catalog/sec_5/bmps/3.pdf

Ground Water Quality Rule (IDAPA 58.01.11)

<http://adm.idaho.gov/adminrules/rules/idapa58/0111.pdf>

Hazardous waste determination

www.deq.idaho.gov/waste/assist_business/haz_waste/characterization.cfm

I Have a Home Heating Oil Tank—What Do I Need to Do?

www.deq.idaho.gov/waste/prog_issues/ust_lust/index.cfm#heat

Idaho Erosion and Sediment Control Field Guide

www.idahosbdc.org/index.cfm?fuseaction=content.fieldguide

Idaho Fish and Game

<http://fishandgame.idaho.gov/inc/contact.cfm>

Idaho State Department of Agriculture

www.agri.state.id.us/Categories/ContactUs/indexContactUs.php

Idaho Underground Storage Act

www3.state.id.us/idstat/TOC/39088KTOC.html

IDAPA 58.01.02 (Sections 850, 851, and 852)

<http://adm.idaho.gov/adminrules/rules/idapa58/0102.pdf>

IDAPA 58.01.02.10.76

<http://adm.idaho.gov/adminrules/rules/idapa58/0102.pdf>

IDWARN

www.IDWARN.org

Petroleum Storage Tank Fund

www2.state.id.us/pstf/

Public Health Districts

<http://www.healthandwelfare.idaho.gov/site/3382/default.aspx>

Public Health Security and Bioterrorism Preparedness and Response Act

www.fda.gov/oc/bioterrorism/Bioact.html

Public Records Request

www.deq.idaho.gov/public/public_records.cfm

Role of Local Governments in Implementing the NPDES Storm Water Program for Construction Sites

www.epa.gov/npdes/pubs/local_federal_web.pdf

Safe Drinking Water Act

www.epa.gov/safewater/sdwa/index.html

Salvage Yard Compliance Checklist

http://www.deq.idaho.gov/multimedia_assistance/salvage_yards/compliance_screening_checklist.pdf

Spill Prevention, Control, and Countermeasure (SPCC) Rule

www.epa.gov/OEM/content/spcc/index.htm

Standards for Used Oil Management

<http://adm.idaho.gov/adminrules/rules/idapa58/0105.pdf>

Storm Water

www.deq.idaho.gov/water/prog_issues/storm_water/overview.cfm

Storm Water Pollution Prevention Plan (SWPPP)

<http://cfpub.epa.gov/npdes/stormwater/swppp.cfm>

Underground Storage Tank Web page

www.deq.idaho.gov/waste/prog_issues/ust_lust/index.cfm

Vehicle and Equipment Fueling Best Management Practices

www.deq.idaho.gov/water/data_reports/storm_water/catalog/sec_5/bmps/6.pdf

Voluntary Cleanup Program

www.deq.idaho.gov/Applications/Brownfields/index.cfm?site=voluntarycleanup.htm

Waste Management and Remediation Emergency Response Web page

www.deq.idaho.gov/waste/prog_issues/haz_waste/emergency.cfm

Appendix F. Resource Links

Cities Go Green Sustainability Magazine

www.citiesgogreen.com/

DEQ's Online Recycling Directory

www.deq.idaho.gov/waste/recycling/recycle_home.cfm

EPA Local Government Resources Center

www.epa.gov/ocir/local-gov-res-center.htm

ICLEI – Local Governments for Sustainability

www.iclei.org/index.php?id=iclei-home&no_cache=1

Idaho Department of Environmental Quality Pollution Prevention (P2) Program

www.deq.idaho.gov/pollutionprevention

Institute for Local Self-Reliance

www.ilsr.org/

Local Government Environmental Assistance Network (LGEAN)

www.lgean.org/

Mayors Climate Protection Center

www.usmayors.org/climateprotection/

Smart Communities Network

www.smartcommunities.ncat.org/municipal/financing.shtml

Smart Growth Network

www.smartgrowth.org/Default.asp?res=1024

Sustainable Communities Network

www.sustainable.org/

Waste Reduction Resource Center: Resources for Local Governments

<http://wrrc.p2pays.org/indsectinfo.asp?INDSECT=23>

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