

WYOMING SUBDIVISIONS IN UNINCORPORATED AREAS

ALL REGULATION AND CONTROL OF THE SUBDIVISION
OF LAND IN UNINCORPORATED AREAS OF THE COUNTY
IS VESTED IN THE COUNTY COMMISSIONERS!!!

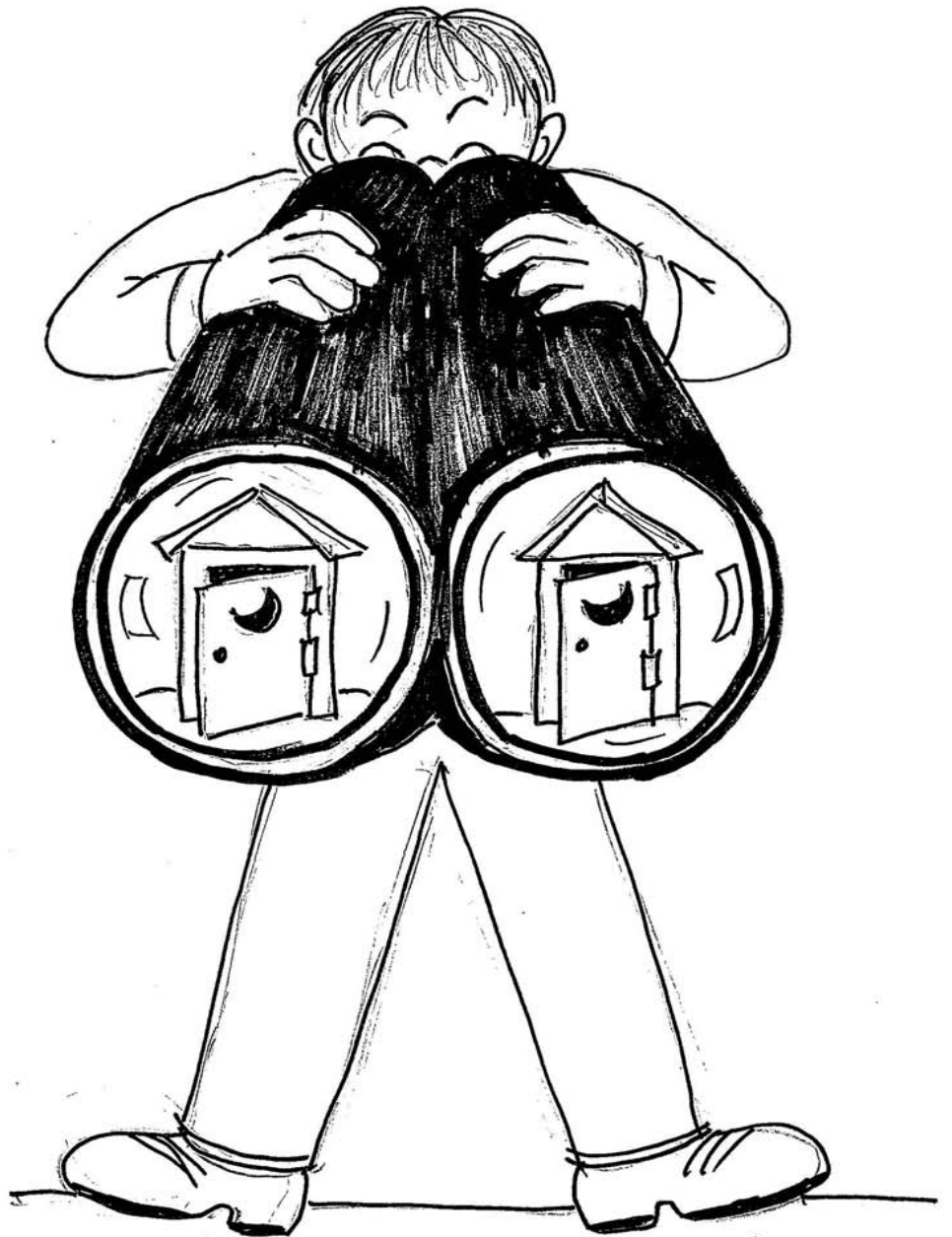
W.S. § 18-5-301

Presented by Lou Harmon

Wyoming DEQ/WQD

13 September 2007

WE
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WHERE
YOU GO!




Wyoming Department of Environmental Quality - Mozilla Firefox

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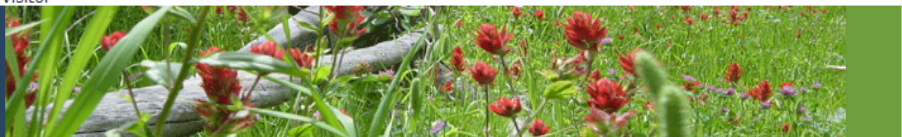
http://deq.state.wy.us/wqd/index.asp

Wyoming Department of Environ... Wyoming DEQ/WQD Subdivision Program

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- Permits
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- Public Notices
- Pollution Prevention
- Small Business Assistance

Online Databases

- WYPDES Database
- CBM Database

Welcome to DEQ's Water Quality Division

Cheyenne Office:

DEQ/Water Quality Division
 122 West 25th Street
 Herschler Building, 4th Floor-West
 Cheyenne, Wyoming 82001

Water Quality Division's main telephone number: 307-777-7781

DEQ/WQD fax machine number: 307-777-5973

Field Offices:

<p><u>Casper Office:</u> WDEQ Casper Field Office 152 North Durbin Street, Suite 100 Casper, WY 82601</p>	<p>Main Telephone Number: 307-473-3465</p> <p>Fax Number: 307-473-3458</p>
<p><u>Lander Office:</u> WDEQ Lander Field Office 510 Meadowview Drive Lander, WY 82520</p>	<p>Main Telephone Number: 307-332-3144</p> <p>Fax Number: 307-332-3183</p>
<p><u>Sheridan Office:</u> WDEQ Sheridan Field Office 1866 South Sheridan Avenue Sheridan, WY 82801</p>	<p>Main Telephone Number: 307-673-9337</p> <p>Fax Number: 307-672-2213</p>

Administrator

John Wagner
 307-777-7781
 jwagne@state.wy.us

WQD Program Links

- Current Events
- Groundwater Pollution Control
- WYPDES Coalbed Methane
- WYPDES Concentrated Animal Feeding Operations
- WYPDES Point Source
- WYPDES Storm Water Permits
- Operator Certification
- State Revolving Fund
- Underground Injection Control
- Water and Wastewater Program
- Water Quality Surface Water Standards
- Watershed Management Section


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Wyoming DEQ/WQD Subdivision Program Wyoming DEQ/WQD Subdivision ...

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WQD Links: **Water and Wastewater Program**

Don McKenzie, Program Manager
Phone 307-777-7075
email: dmcken@state.wy.us

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[Current Events](#)

[Groundwater Pollution Control](#)

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Storage Tank Prgm, Compliance

Storage Tank Prgm, Remediation

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Wyoming Subdivision Program

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- Water Quality Rules and Regulations, Chapter 23 [Wyoming Statute for Subdivisions](#)
- Subdivision [statute](#) (this takes you directly to the Secretary of State site)
- Calculating nitrates at the property boundary using the Wehrmann Model, calculating leachate travel times, and calculating nitrate dilution within a public supply well (Chapter 23, Appendices A, B and C)". Spreadsheet Example [\[download xls spreadsheet\]](#), updated 01-14-03]
- [Subdivision locations](#) with associated data in Shape file format - updated 04/11/05
- **Subdivision Data** - updated 04/11/05 - in [EXCEL format](#). An explanation of the subdivision data table can be found in the [read me file](#) which is an ASCII Text format.
- Relevant Journal Articles in PDF format:
 - ["Estimating Ground Water Quality Impacts from On-Site Sewage Treatment Systems"](#) by B.J. Bauman and W.M. Schafer, 1985. In On-Site Waste Water Treatment Proc. 4th National Meeting. ASAE Pub 7-85, St. Joseph, MI
 - ["Predicting Ground-Water Nitrate-Nitrogen Impacts"](#) by Norman N. Hantzsche and E. John Finnemore
 - ["Estimation of Ground-Water Mounding Beneath Septic Drain Fields"](#) by E. John Finnemore
 - ["An Analysis of Nitrate-Nitrogen in Ground Water Beneath Unsewered Subdivisions"](#) by John R. Tinker Jr.

Last Updated: 06 September, 2007

Done



Department of Environmental Quality



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- CBM Database

WYPDES Storm Water Program

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jgorma@state.wy.us

Storm Water Quick Links

[Large construction permit](#) - surface disturbance of 5 acres or more

[Small construction permit](#) - disturbance of at least 1 acre, but less than 5

NEW [Mineral mining permit](#) new permit and forms available

[Industrial permit](#)

[Municipal separate storm sewer systems \(MS4s\) permit](#)

[Storm water guidance documents](#) (new guidance for reclamation in northeast and southwest Wyoming)

[Other storm water links](#)

[Wyoming Water Quality Rules and Regulations](#)

Storm Water Permits and Forms

Annual fee requirement for WYPDES permits and authorizations. Individual permits and general permit authorizations are subject to an annual \$100 fee for as long as the permit or authorization is active. The annual billing cycle is based on the state's fiscal year and runs from July 1 to June 30. There is no need to pay the fee with your application. All permit and authorization fees are invoiced after June 30th.

DEQ'S ROLE IN SUBDIVISION APPROVAL

- ▶ 1. The County is required to obtain DEQ'S recommendations as to the adequacy and safety of the proposed sewage and water systems. W.S. § 18-5-306
- ▶ 2. DEQ reviews proposed sewage system for adequacy and safety.
- ▶ 3. DEQ reviews proposed water supply system for adequacy and safety.
- ▶ 4. DEQ provides recommendations to the County Commissioners in 60 days or less from the time the application is received by DEQ. The recommendations are either:
 - Non-Adverse
 - Adverse

ADVERSE RECOMMENDATIONS AND THE 60 DAY TIME LIMIT

- ▶ The law allows no flexibility on the 60 day time limit applied to DEQ
- ▶ In 60 days or less the DEQ will issue a recommendation. If all information necessary to make a non-adverse recommendation is not available in a timely fashion, an adverse recommendation will be made.
- ▶ After an adverse, the application process must start over from the beginning with DEQ.

DEQ SUBDIVISION REVIEW PROCESS

- ▶ 1. DEQ receives application from county or subdivider. Usually the application is submitted by the subdivider's consultant.
- ▶ 2. DEQ sends a letter to the County Commissioners, the County Planning Office, and the State Engineer that the application has been received. The letter states the suspense date for issuing the recommendation.
- ▶ 3. If the County has not received the subdivision application, the County Planning Office should take the appropriate action upon receipt of the DEQ letter.
- ▶ 4. DEQ reviews the materials received.

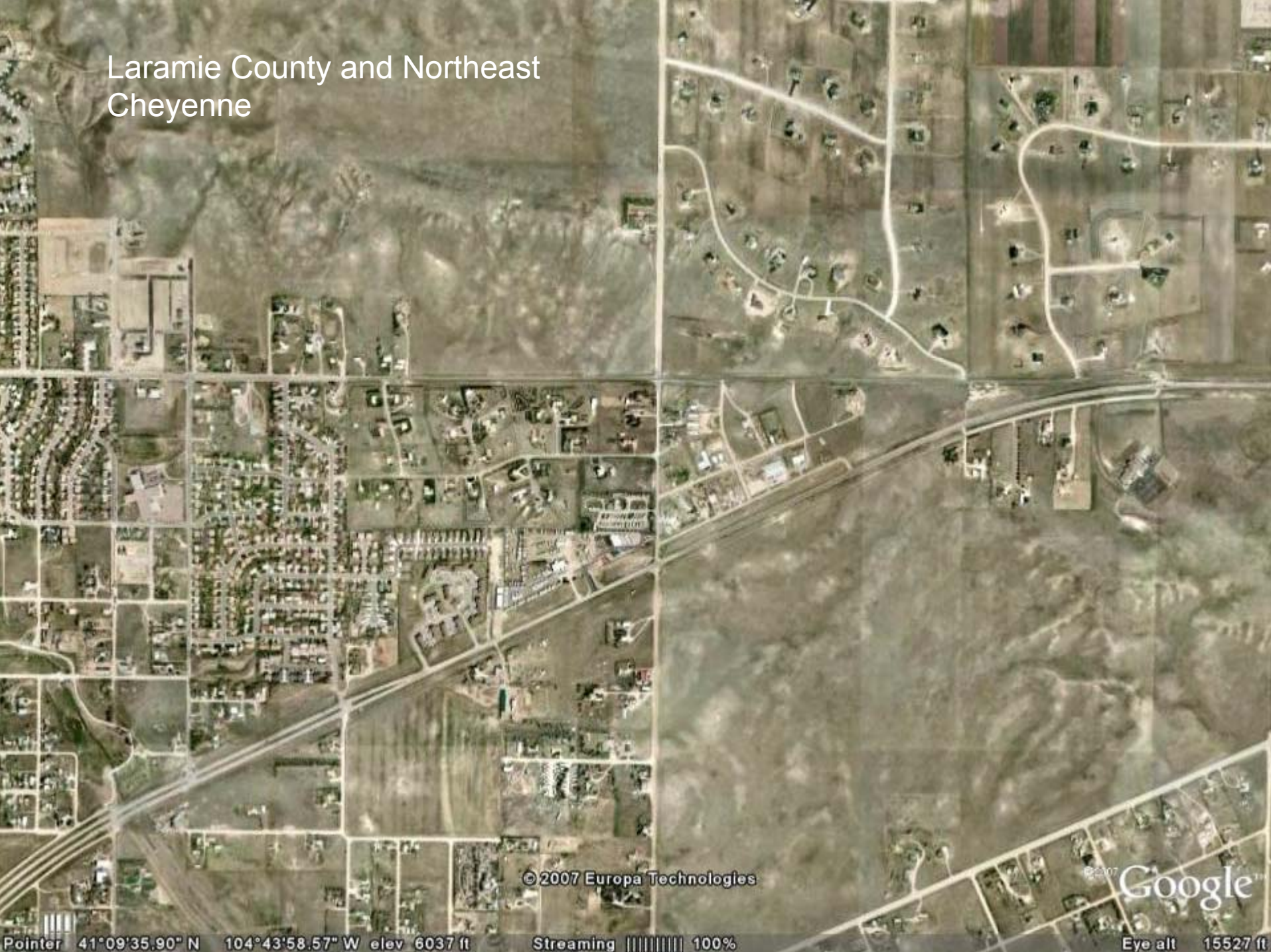
SUBDIVISION REVIEW (cont)

- ▶ 5. The application must contain an analysis of the proposed sewage and water supply systems prepared by a Wyoming Licensed Engineer and if appropriate, a Wyoming Licensed Geologist.
- ▶ 6. SEO prepares comments from copy of subdivision application received by DEQ and copies the County.
- ▶ 7. DEQ issues recommendations to County:
 - Non-Adverse or Adverse for sewage system
 - Non-Adverse or Adverse for water supply system
- ▶ 8. DEQ Non-Adverse recommendations must be justified by the science presented by Wyoming Licensed Professionals in the application.

County Commissioners Actions

- ▶ **The County Commissioners have Control!**
- ▶ **But the County must provide the DEQ a sixty day opportunity to provide recommendations.**
- ▶ **The Commissioners may deny a subdivision over concerns about water or sewage systems, even though the DEQ has made a non-adverse recommendation.**
- ▶ **The Commissioners may approve a subdivision, even though the DEQ has made an adverse recommendation.**
- ▶ **If the Commissioners approve a subdivision with an adverse DEQ recommendation, the subdivider must provide all purchasers with a copy of the DEQ recommendation.**

Laramie County and Northeast Cheyenne



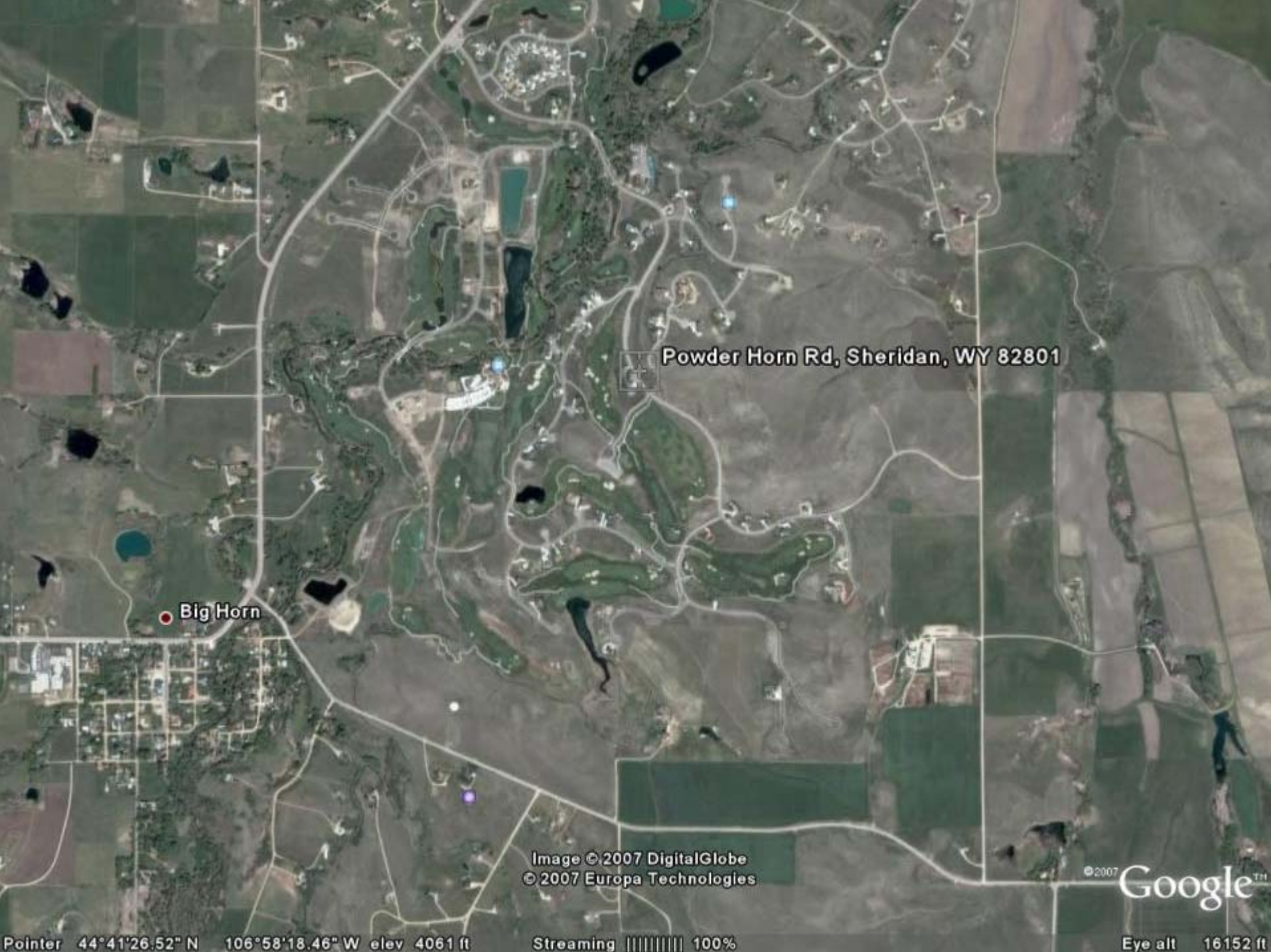
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Pointer 41°09'35.90" N 104°43'58.57" W elev 6037 ft

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Big Horn

Powder Horn Rd, Sheridan, WY 82801

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Jeffrey City, WY

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SEWER SYSTEM REVIEWS

- ▶ **Connection to an existing system.** The review is a piece of cake, requires a statement from the existing system that it will provide service and a quick check that the existing system has adequate capacity.
- ▶ **Construction of a central system.** Relatively straight forward, especially if surface discharge or reuse is specified. Subsurface discharges are considered underground injection wells and U.I.C. rules apply.
- ▶ **On-lot sewage systems** are the usual proposal and require detailed hydro-geologic investigation and mathematical modeling. Primary consideration is the protection of groundwater for class of use. Usually a well in the vicinity in the unconfined aquifer is being used for drinking water forcing drinking water standards to be considered in the review.

ON-LOT SYSTEM CONSIDERATIONS

- ▶ Properly constructed conventional septic tanks and leachfields are dependable and nearly maintenance free.
 - Septic tanks and leachfields are a treatment system, not merely a way of hiding or burying waste.
 - Much of the treatment occurs at the interface with and in the vadose zone beneath and down gradient of the leachfield.
 - The DEQ small wastewater system requirements are designed to provide for adequate treatment in the vadose zone
 - Nitrates are persistent and only partially removed in the vadose zone. Dilution in the unconfined aquifer usually prevents excessive nitrate levels. Lot sizes over 2 ½ acres are usually adequate to guarantee adequate dilution.
- ▶ Enhanced systems utilizing both anaerobic and aerobic treatment methods are heavily promoted.
 - Without continuous maintenance enhanced systems fail in a few weeks to a few months.

ON-LOT SYSTEM CONSIDERATIONS

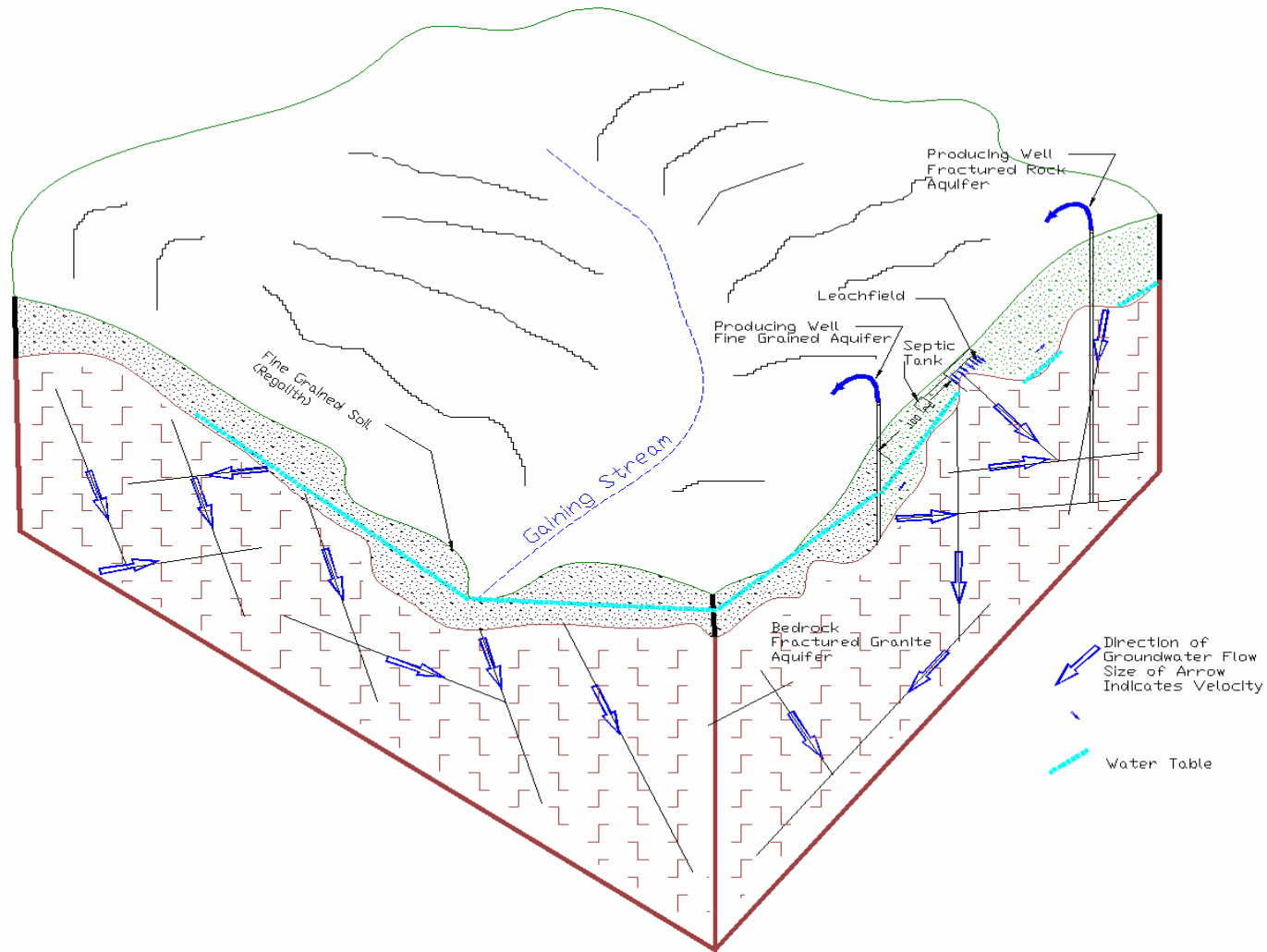
Enhanced systems utilizing both anaerobic and aerobic treatment methods are heavily promoted.

- Enhanced systems can be designed to remove bacteriological organisms, phosphorus, and nitrogen compounds.
- Some enhanced systems can produce very high quality effluents.
- Without continuous maintenance enhanced systems fail in a few weeks to a few months.
- The State has no mechanism to enforce maintenance and proper operation of homeowner systems.

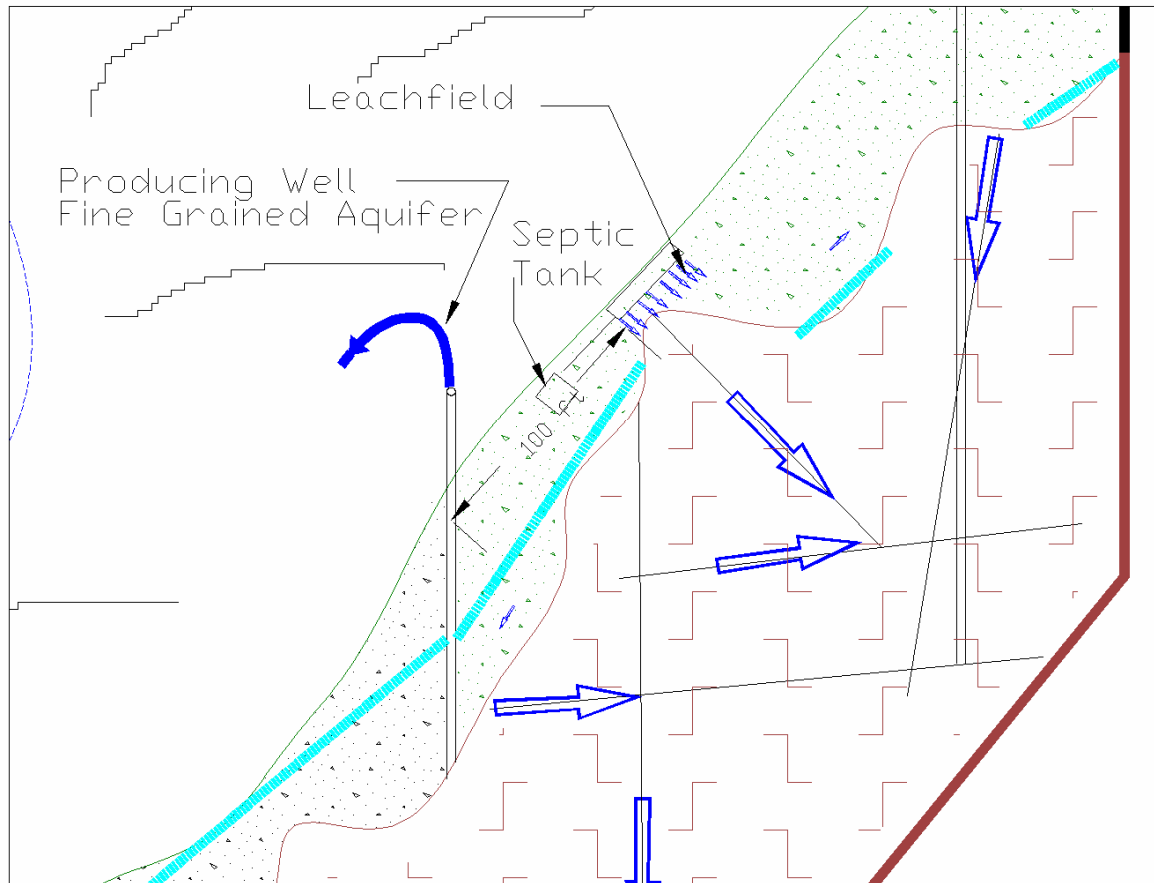
A non-adverse recommendation will only be issued for enhanced home owned systems if a local organization is willing and legally capable to guarantee proper operation of the enhanced systems.

Fractured rock aquifers common in the Wyoming mountains make subsurface disposal inherently risky. In such environments subsurface disposal may not be permitted.

TYPICAL WYOMING MOUNTAIN AQUIFER SYSTEMS CUT AWAY VIEW



TYPICAL WELL COMPLETED IN UNCONFINED AQUIFER CONSISTING OF FINE GRAINED ALLUVIAL SOILS

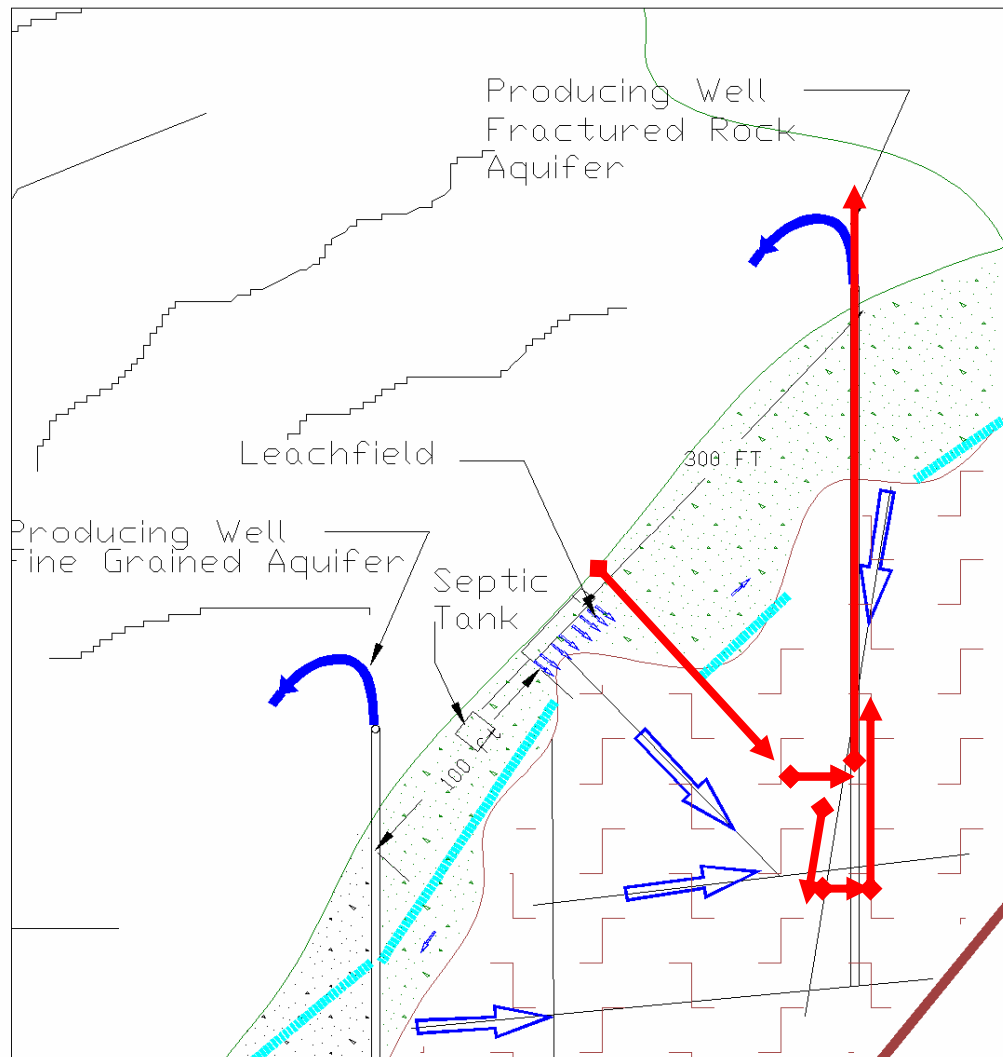


Fine grained soils protect wells from contamination in three ways.

- 1. The movement of the groundwater is restricted to rates of $\frac{1}{2}$ inch to 1 foot a day for soils as fine or finer than beach sand.**
- 2. While the pore space can be as much as 25% of the total volume, the openings are small and create an excellent filter.**
- 3. The soil particles adsorb bacteria and virus, preventing further movement.**

WQD Chapter 11 requirement that leachfields be isolated 4 ft vertically from the water table and 100 ft from wells is adequate.

TYPICAL WELL COMPLETED INTO FRACTURED ROCK WHERE LIMITED WATER EXISTS IN OVERLYING SOIL



When insufficient or no water is found in the soil overlying the igneous or metamorphic rock common in the Wyoming mountains water can sometimes be produced from the fractures in the bedrock. The fracture openings are large relative to the openings between pore spaces in fine grained soils and the volume of the fractures versus the overall volume of the rock is small, 1% to 2%.

Contamination entering the fracture system can move several feet per hour and there is minimal filtration and adsorption of bacteria and viruses.

If effluent from a leachfield finds its way into the fracture system without adequate travel distance through a soil column, in several hours to a few days the fractured rock well is contaminated.

Water Supply System Reviews

- ▶ Connection to an existing system. The review is a piece of cake, requires a statement from the existing system that it will provide service and a quick check that the existing system has adequate capacity.
- ▶ Construction of a central system. Dependability of the water supply is a major issue. If groundwater is to be developed, a test well with extensive hydrological analysis demonstrating long term dependability will be required to justify a non-adverse recommendation.
- ▶ On-lot water supply. The DEQ recommendation is basically just a truth in advertising exercise. Cisterns to store trucked in potable water are a safe and adequate water supply. Wells producing contaminated water which must be extensively treated before use, if so identified, are safe and adequate.
- ▶ Extensive hydro-geological investigations are required to establish the adequacy and safety of on-lot wells. Generally one well within the subdivision must be completed, pumped and the water quality tested.

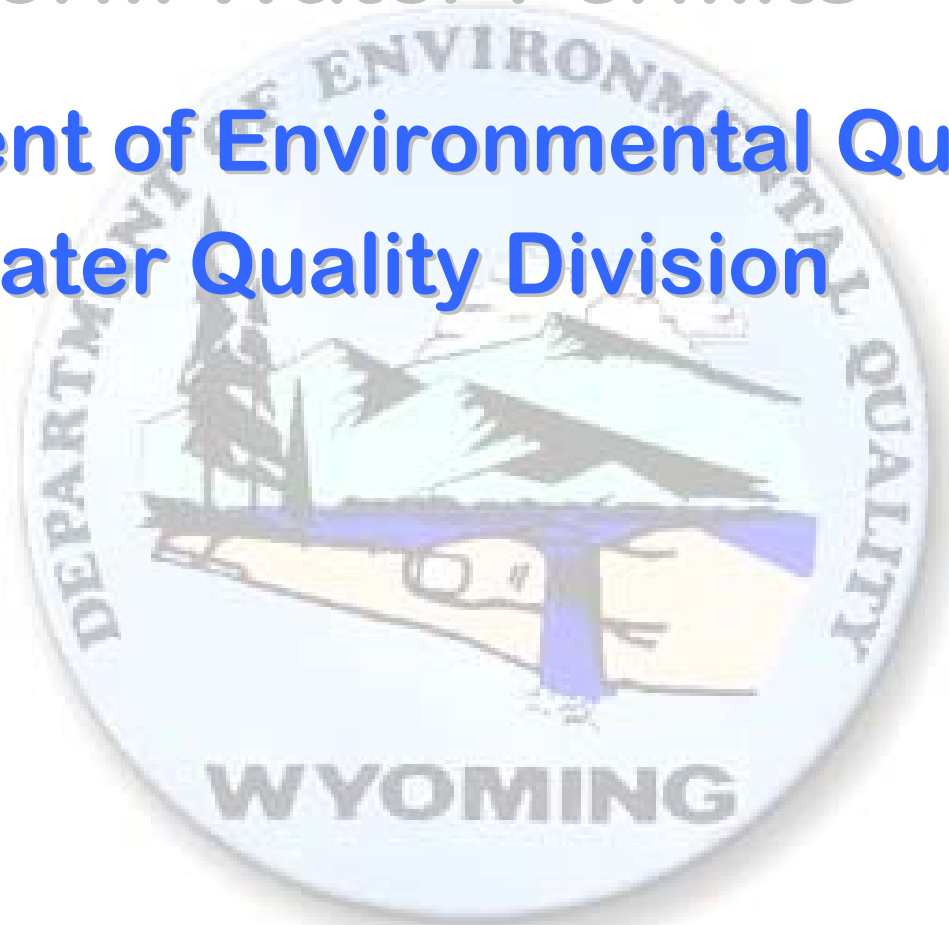


NOTES TO BE ADDED TO PLAT

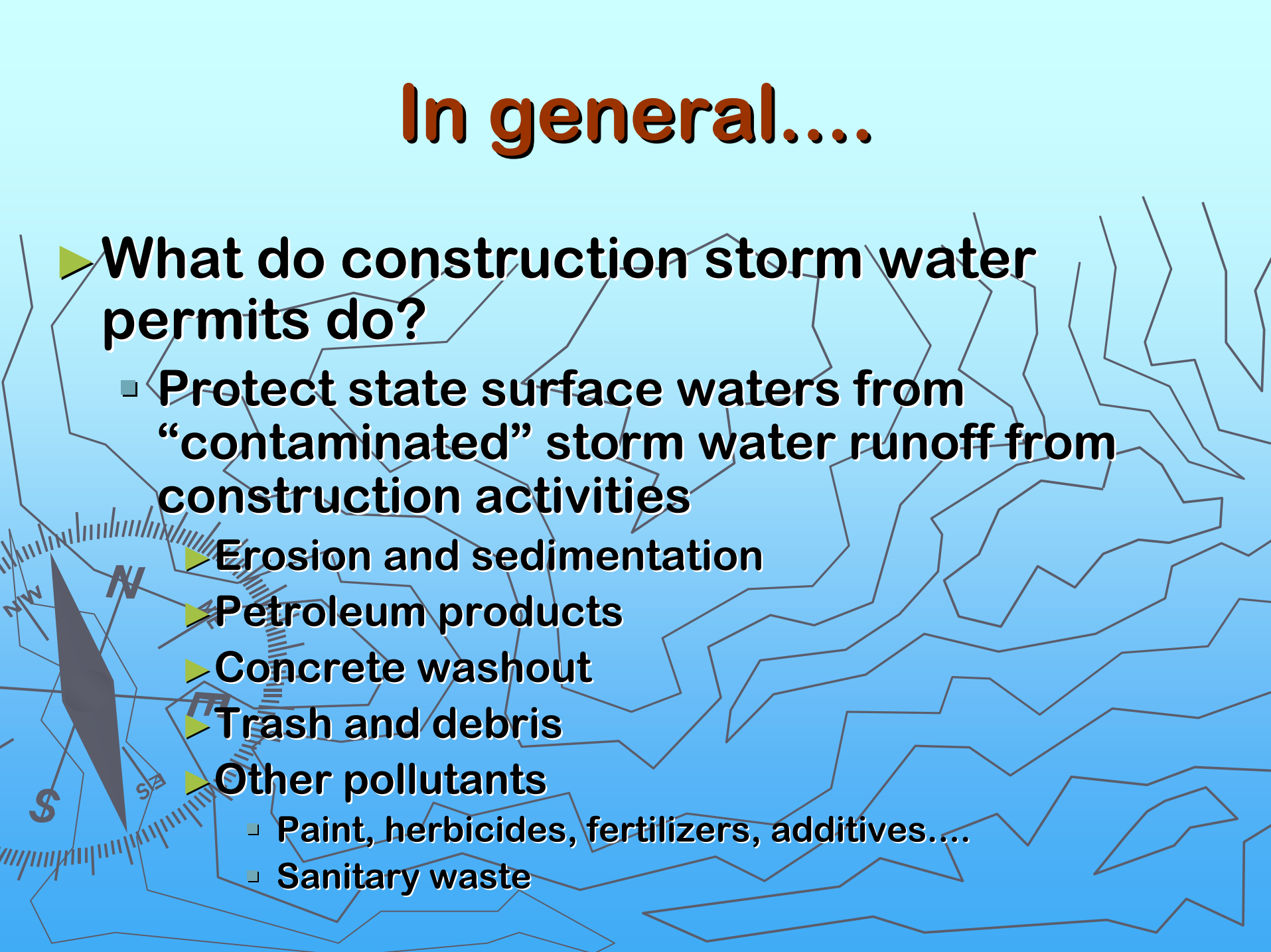
- ▶ Non-Adverse recommendations frequently include a recommended note to be added to the plat and included in all other sales literature.
- ▶ Sewage Systems: The notes may restrict locations of the leachfields or specify specific types of construction. Enhanced or advanced systems will be recommended only if satisfactory 3rd party maintenance procedures can be guaranteed. If centralized treatment is to be provided, a note restricting all lot owners to use of the centralized system will be included.
- ▶ Water Supply Systems: If centralized supply is proposed, a note restricting all lot owners to use of the centralized system will be recommended. If on-lot wells are proposed, the notes may restrict spacing, specify depths and well construction, or require point of use water treatment.
- ▶ Notes added to the plat are effective only if the County has a building permit program with a certificate of occupancy required.

Construction and Storm Water Permits

Department of Environmental Quality/
Water Quality Division



In general....

- 
- The background of the slide is a topographic map with brown contour lines on a light blue background. A compass rose is visible on the left side, showing cardinal directions (N, S, E, W) and intermediate directions (NE, SE, SW, NW).
- ▶ **What do construction storm water permits do?**
 - **Protect state surface waters from “contaminated” storm water runoff from construction activities**
 - ▶ **Erosion and sedimentation**
 - ▶ **Petroleum products**
 - ▶ **Concrete washout**
 - ▶ **Trash and debris**
 - ▶ **Other pollutants**
 - **Paint, herbicides, fertilizers, additives....**
 - **Sanitary waste**

In general....

- ▶ **Who needs a CGP (construction general permit)?**
 - **Any construction that will disturb 1 or more acres needs permit coverage**



In general....

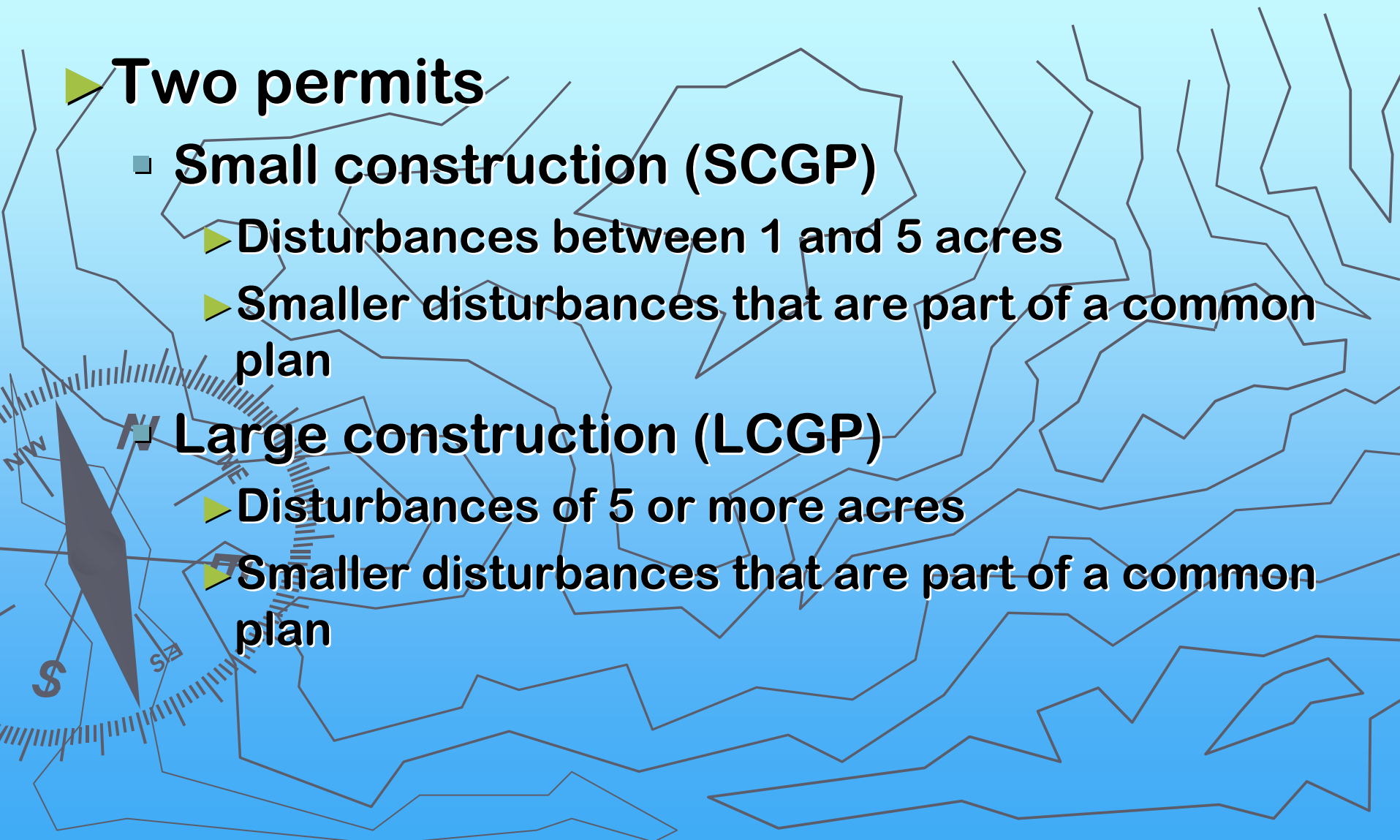
▶ Two permits

■ Small construction (SCGP)

- ▶ Disturbances between 1 and 5 acres
- ▶ Smaller disturbances that are part of a common plan

■ Large construction (LCGP)

- ▶ Disturbances of 5 or more acres
- ▶ Smaller disturbances that are part of a common plan



In general....

▶ For both permits

- Develop a storm water pollution prevention plan (SWPPP)

- ▶ Plan to prevent exposure of pollutants to storm water or

- ▶ Plan to minimize transport of pollutants off site

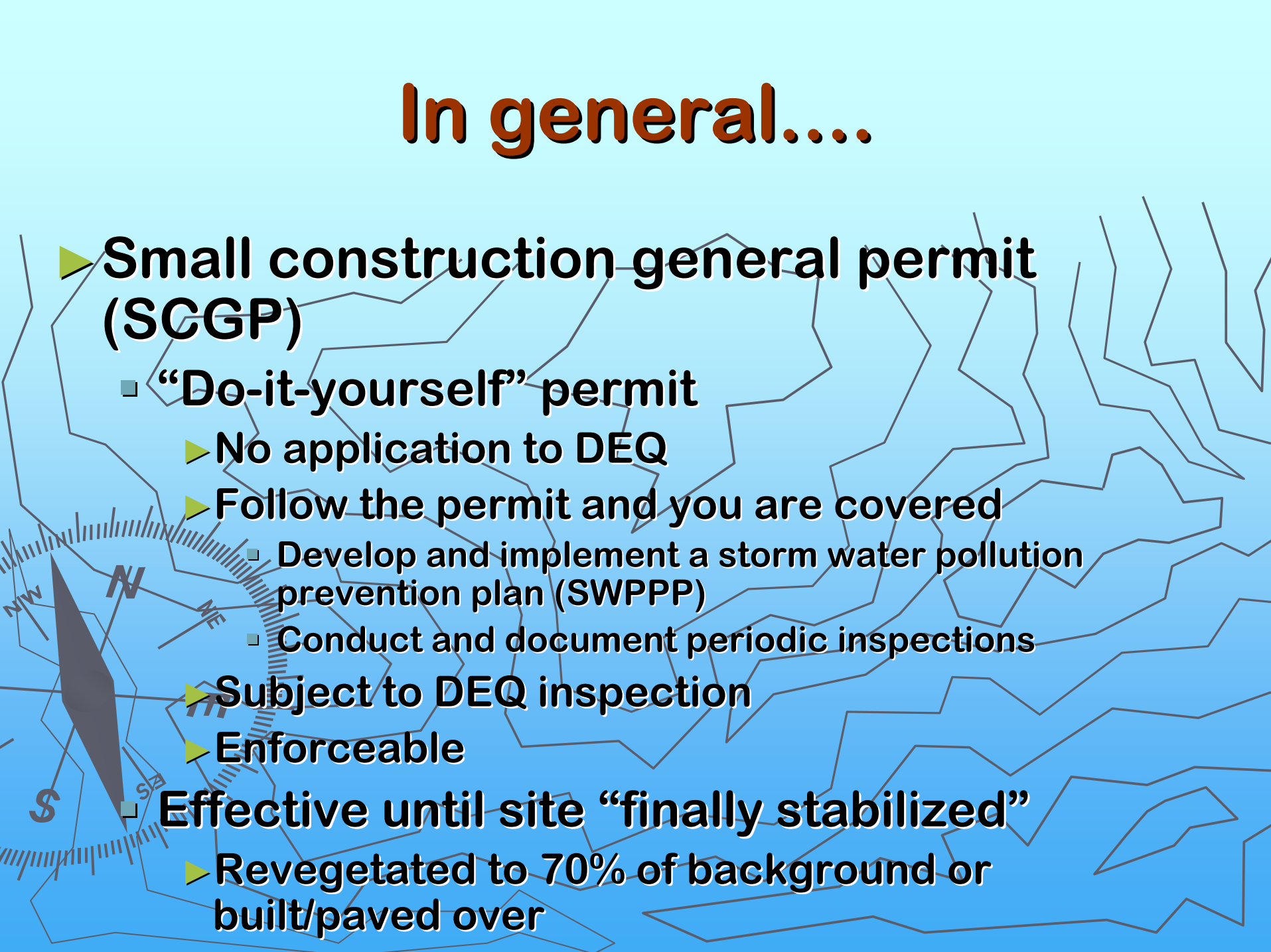
- A combination of various best management practices (BMPs)

- ▶ Limit exposure: clearing, storage, materials handling

- ▶ Structural practices: check dams, settling ponds, blankets, diversions

- ▶ Non-structural: site selection, employee training

In general....

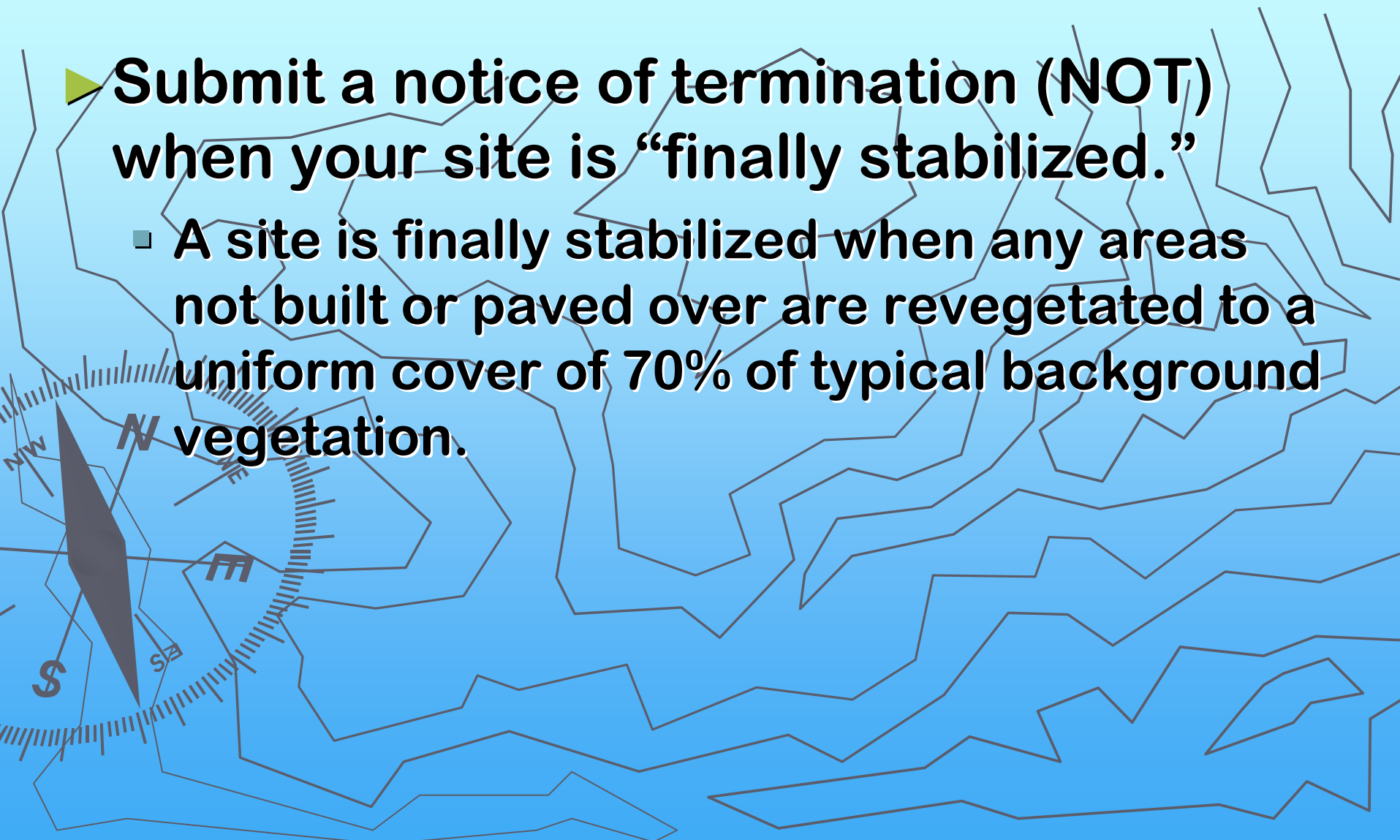
- 
- ▶ **Small construction general permit (SCGP)**
 - **“Do-it-yourself” permit**
 - ▶ No application to DEQ
 - ▶ Follow the permit and you are covered
 - Develop and implement a storm water pollution prevention plan (SWPPP)
 - Conduct and document periodic inspections
 - ▶ Subject to DEQ inspection
 - ▶ Enforceable
 - **Effective until site “finally stabilized”**
 - ▶ Revegetated to 70% of background or built/paved over

LCGP

- ▶ **Large Construction General Permit (LCGP)**
 - **For projects that disturb 5 or more acres (and smaller projects that are part of a common plan)**
 - **Must apply for coverage – Notice of Intent (NOI)**
 - ▶ **Coverage from first disturbance until final stabilization**
 - ▶ **Submit 30 days prior to disturbance**
 - ▶ **Include map with the NOI**
 - **SWPPP and periodic inspections required**
 - **Revised and reissued on 9/1/06**

LCGP - Terminations

- ▶ **Submit a notice of termination (NOT) when your site is “finally stabilized.”**
 - **A site is finally stabilized when any areas not built or paved over are revegetated to a uniform cover of 70% of typical background vegetation.**





Questions?????