

CBNG IAWG Hydrology Task Group Update

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June 1, 2005

Assigned Tasks

1. Develop a surface water monitoring plan
2. Develop an integrated groundwater monitoring plan
3. Prepare an ongoing list of studies being conducted, and provide recommendations on additional studies that are needed.
4. Function as a forum for the development of TMDLs.

TASK 1 - Surface Water Monitoring

- Developed Plan for 5 Watersheds
 - Rosebud Creek watershed
 - Tongue River watershed
 - Powder River watershed
 - Cheyenne River watershed
 - Belle Fourche River watershed

Priority (Shape)

- High
- ▲ Medium
- Low

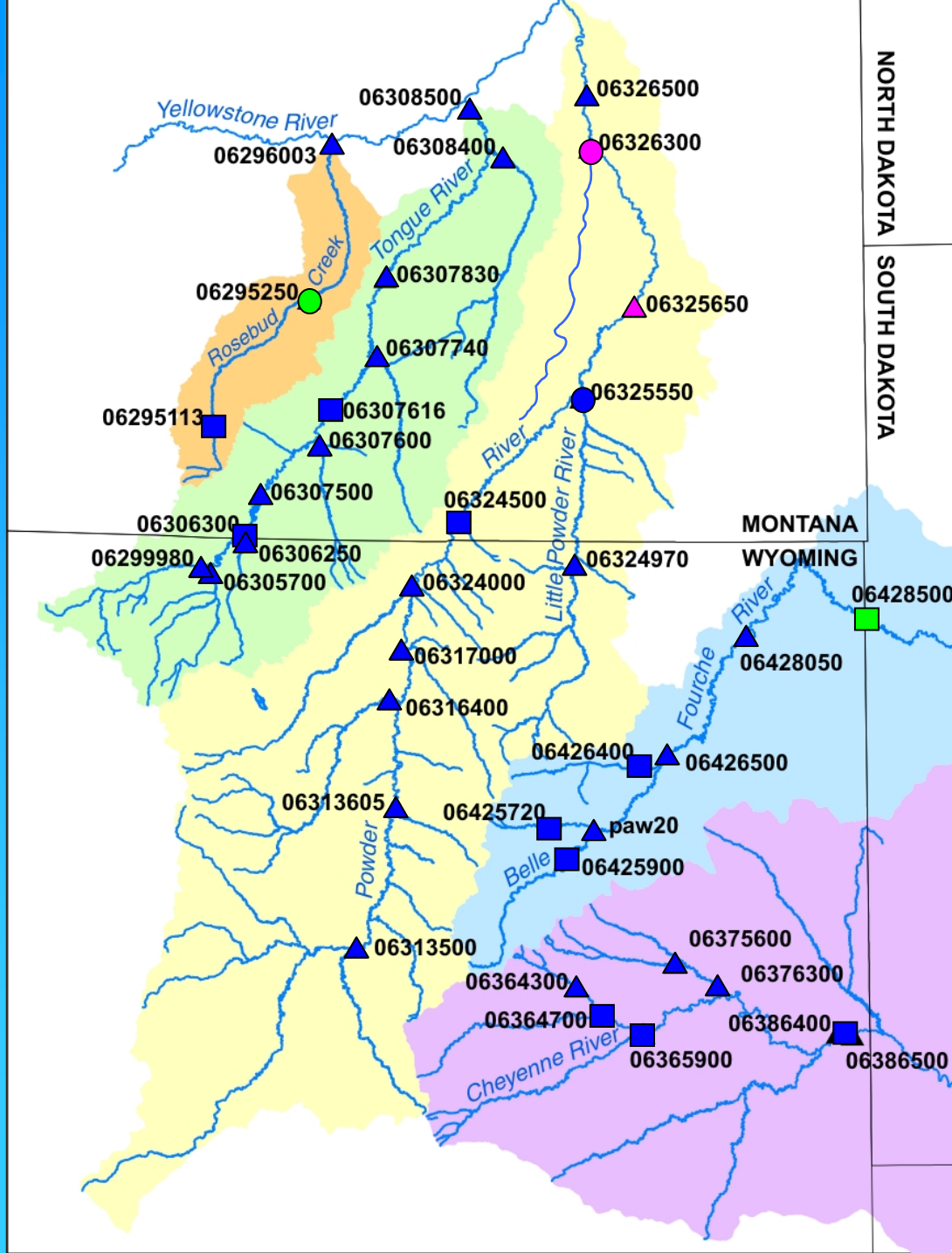
Status (Color)

(May 2005)

Flow and Quality

Flow Only

Not Monitored



Monitoring Status

- High Priority Sites (11/11)
 - All Are Being Monitored
 - Belle Fourche at WY-SD state line is flow only
- Medium Priority Sites (23/24)
 - Powder River at Powderville is not being Monitored
- Low Priority Sites (2/3)
 - Mizpah at Mizpah is not being Monitored
 - Rosebud at Colstrip is flow only

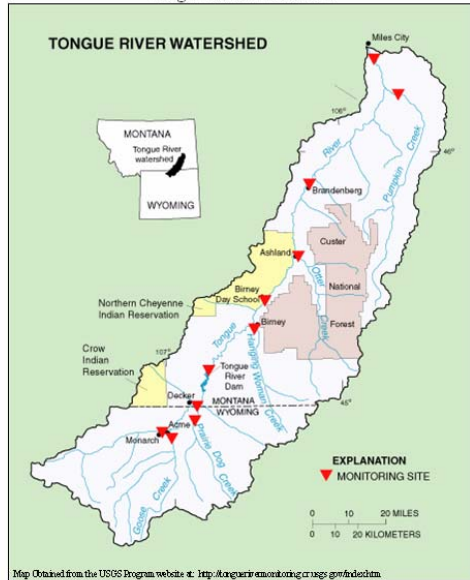
Surface Water Monitoring Products

- Sample analyses are electronically available to stakeholders via USGS website
- Streamflow is available in real-time on USGS website
- SC, and estimated SAR are available in real-time on USGS website for selected sites
- Annual Regional Summary Report
 - EPA Funding (2004-2005 Report)
- Plan for Interpretive Report After 3 years & Every Other Year thereafter
 - Relation to Conservation Fund Report?

Monitoring Reports

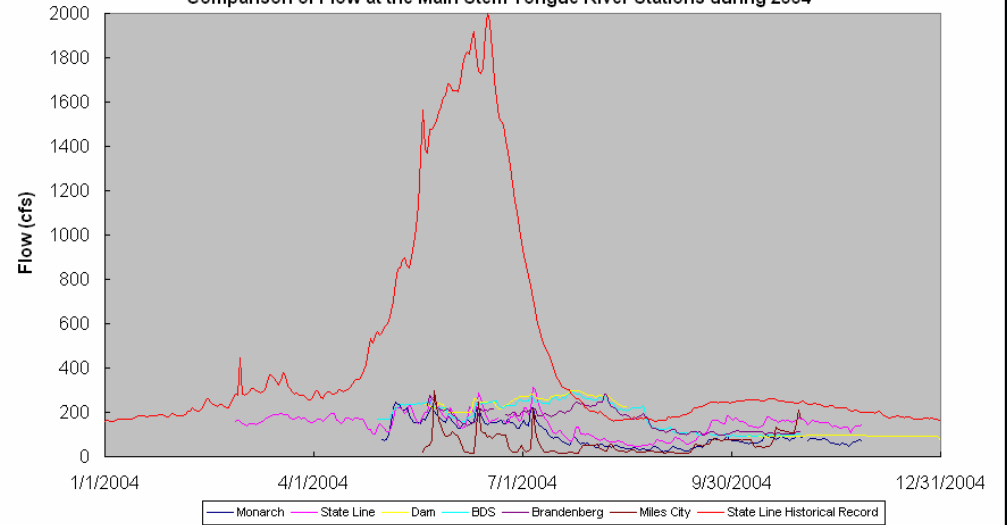
- Annual Report to include Introduction, basin conditions, summary, appendix of tabulated data
 - Discussion by basin to include:
 - 1) Summary statistics for selected constituents,
 - 2) Comparisons to State water-quality criteria,
 - 3) Time-series plot
 - 4) Comparison to FEIS projections
- Interpretive Reports Designed to be compatible with State 305(b) reports

2004
Overview of Surface Water
Monitoring Data for EC and SAR in the
Tongue River Watershed

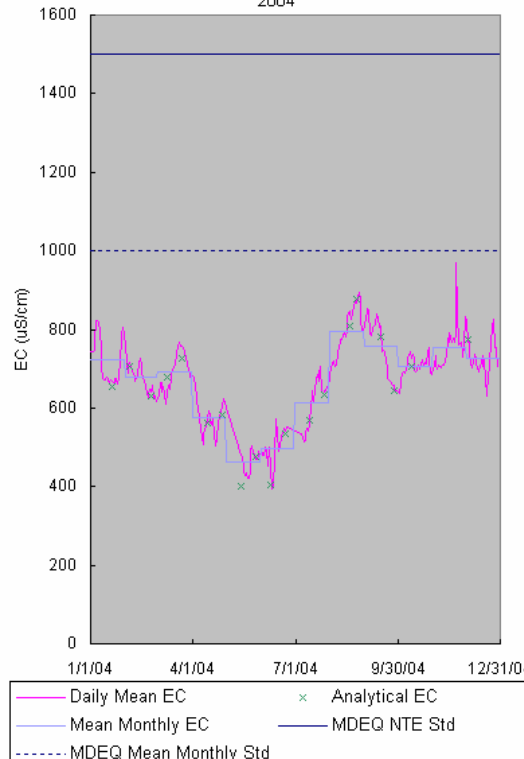


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March 11, 2005

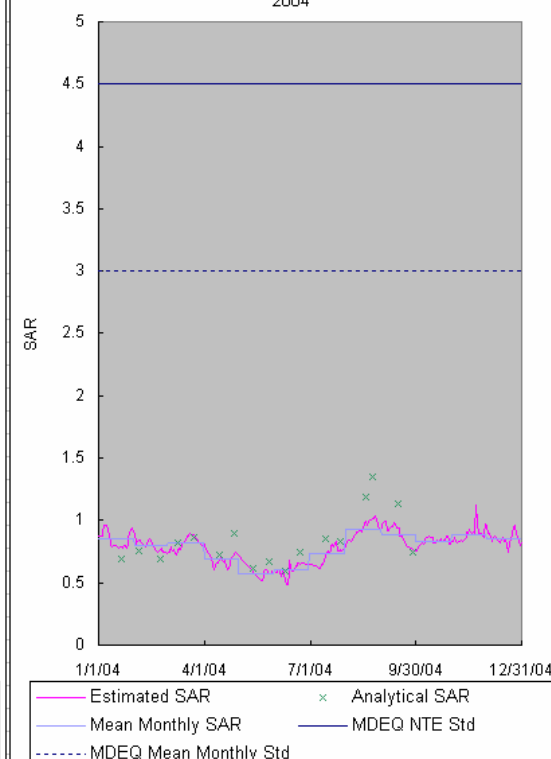
Comparison of Flow at the Main Stem Tongue River Stations during 2004



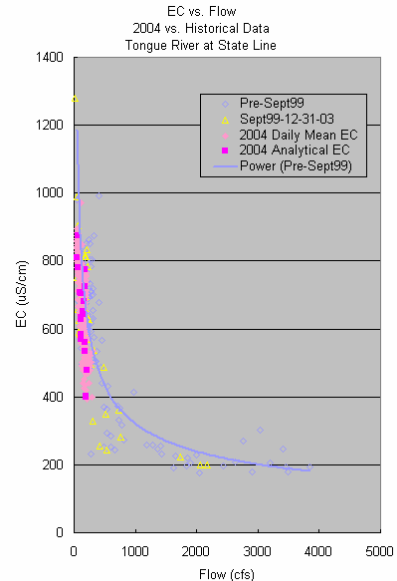
EC vs. Time
Tongue River at State Line
2004



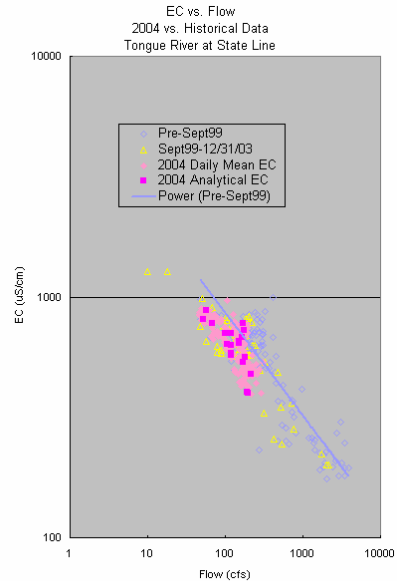
SAR vs. Time
Tongue River at State Line
2004



EC vs. Flow
2004 vs. Historical Data
Tongue River at State Line






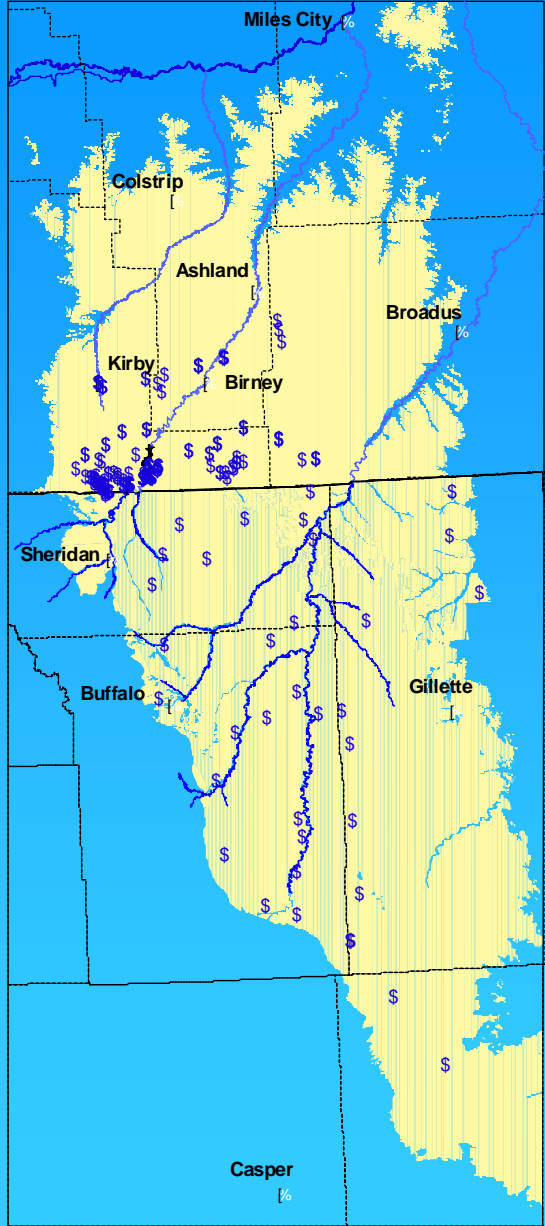
EC vs. Flow
2004 vs. Historical Data
Tongue River at State Line



Task 2 - Groundwater Monitoring

- Working to tie nomenclature across state line
- Exchange of information on well locations and aquifers within 10 miles of state line (reduce edge effects)
- Develop pdf type Maps of the different regional monitoring sites (Data to be compiled by MBMG)
 - Plan to post on the CBM Clearinghouse website (WY-BLM)
- Also plan to construct coverage of “study sites” where ponds, alluvium, sandstone above coals etc. are being monitored (all to go on the Clearinghouse)

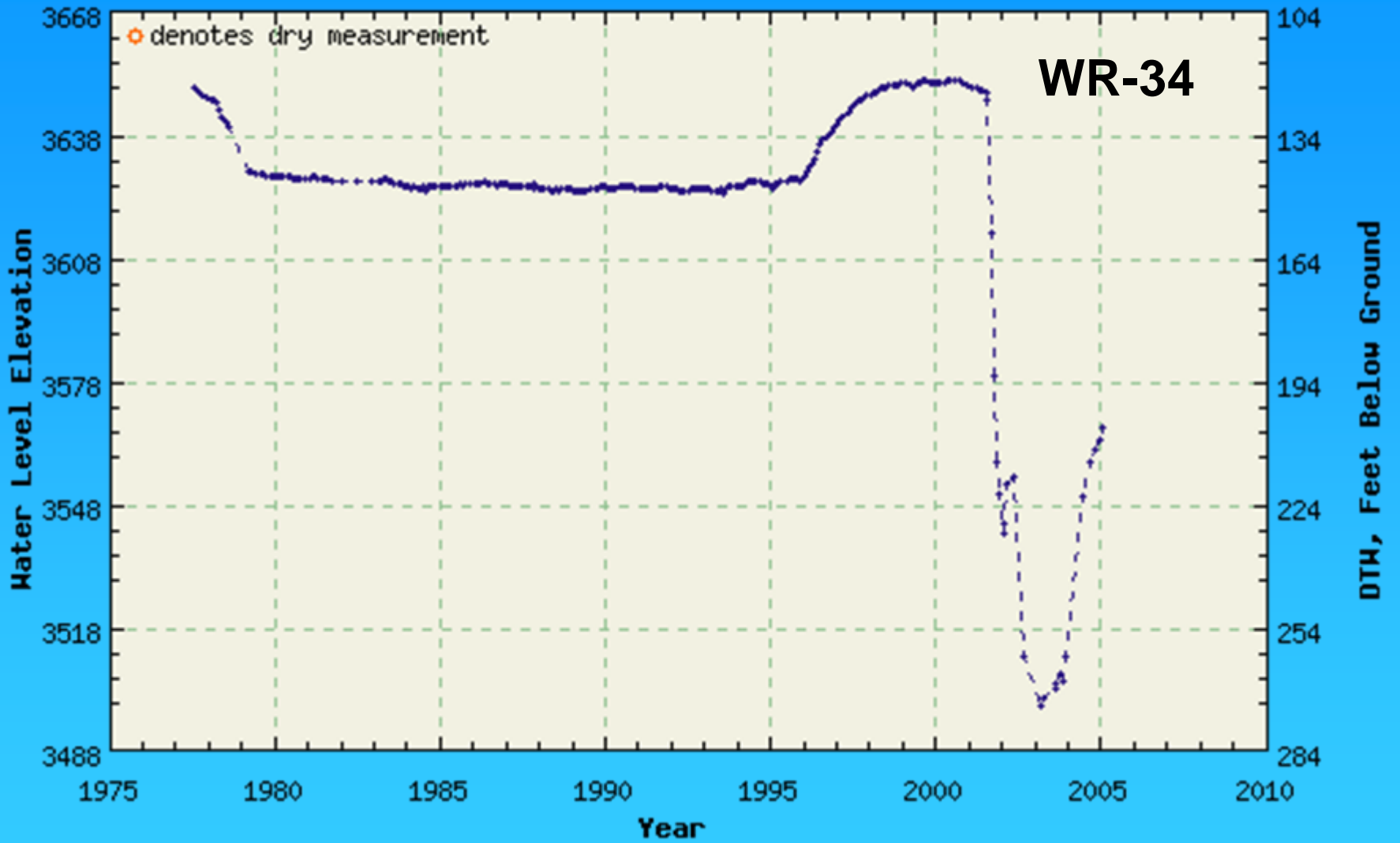
 **CBM Monitor Well**
 **Powder River Basin**
 **County outline**



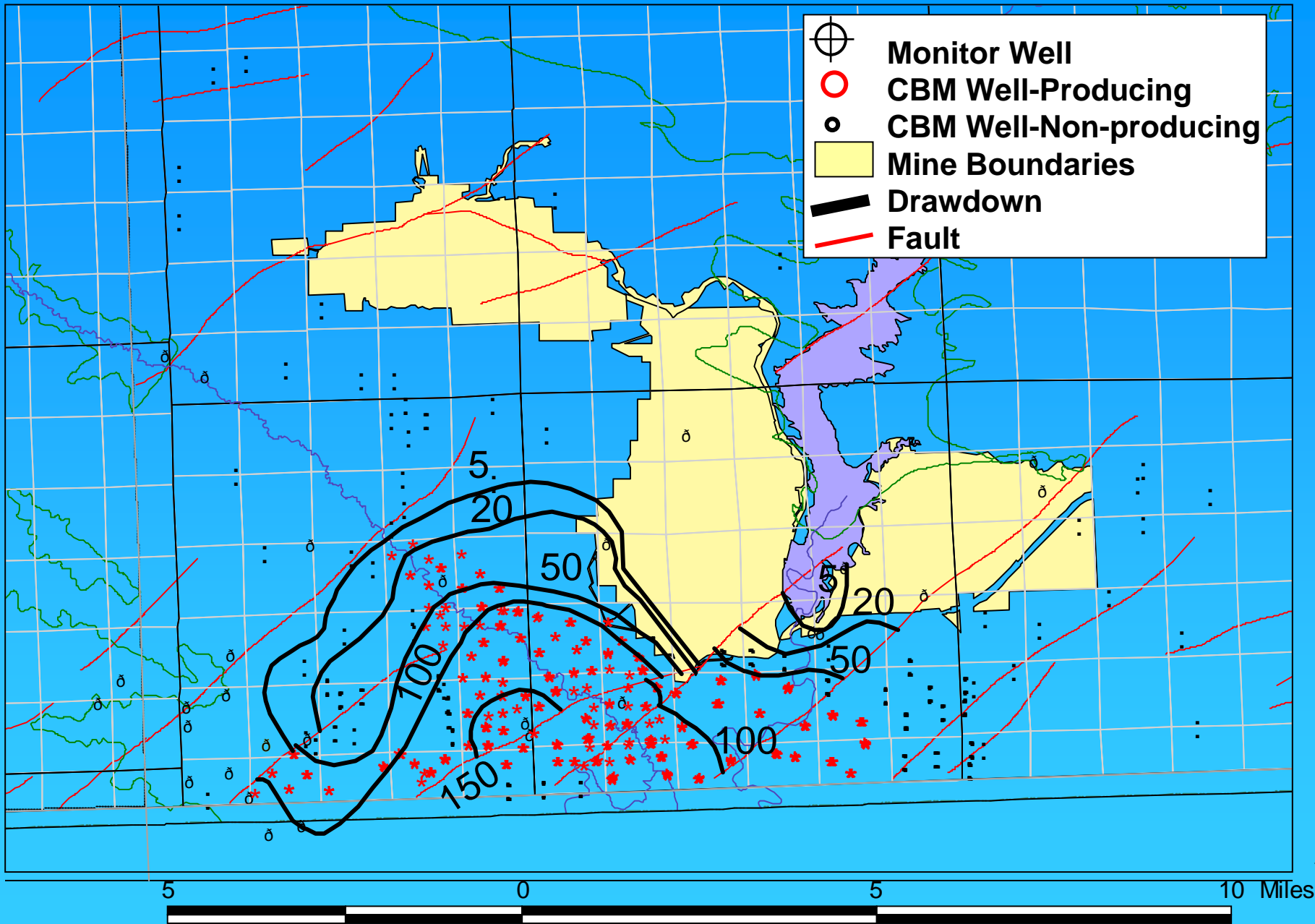
Montana
Wyoming



Current hydrograph for well 132909
Location (TRS): 09S39E33CBBB Td: 522 Aquifer: 125AND2



Source: Ground-Water Information Center -- Butte, MT



- ⊕ Monitor Well
- CBM Well-Producing
- CBM Well-Non-producing
- Mine Boundaries
- ▬ Drawdown
- ▬ Fault



5 0 5 10 Miles

Groundwater Monitoring Impoundments

- A sub-task group has been identified to address issues relating to Impoundments
 - Development of DEQ standards in both states for monitoring of impoundments
 - One report is in press, emphasis is ground-water quality changes at sites in Wyoming
 - One report is in preparation, emphasis is relationship between lithology and changes in ground-water quality and rates of infiltration

Task 3 - Studies

- Searchable Bibliographic databases in place for MT and WY.
- Discuss areas where additional data is needed, which is then used in formulation of study proposals

Ongoing Studies

- CBNG Ponds Land Application of CBNG Water
- Skewed Reservoir study
- Water Flux study on Wild Horse Creek
- Nutrient cycling in Burger Draw
- Ground-water study in Burger Draw
- Regional ground-water-quality sampling
- Conceptual plan for long-term surface water monitoring in Cheyenne and Belle Fourche Basins

Proposed Studies

- Injection Feasibility Study (USFS/BLM)
- CBNG Pond Siting and Monitoring Decision Matrix (BLM/MBMG/DOE)
- Land Application Guidance Document (BLM/DOE)

Task 4 - TMDLs

- Several members of the CBNG Water Task group are also on the Modeling Committee for the development of TMDLs for the Tongue River, Powder River and Rosebud Creek.
 - This is an ongoing effort
 - TMDL Models have been completed
 - Justification for Impairment is not clear
 - There is ongoing discussion concerning how these models will be used
 - Watershed based permitting?

Questions?

