

Summary of Pinedale Anticline Chemical and Field Data 2000-2006

September 10, 2007

Sublette County Conservation District

The Sublette County Conservation District (SCCD) has been collecting surface water quality data on the New Fork River and its tributaries since 2000. The Pinedale Anticline (PA) surface water sites, NF4, NF19 and NF30, were established in 2001. NF40 was established in 2004 to monitor any effects of Sand Springs and Alkali Draws on the New Fork River. NF1 was added in 2006 to serve as a control site as it is downstream of New Fork Lake and upstream of any oil and gas exploration and development associated with the Pinedale Anticline Project Area.

Surface water samples collected at the Pinedale Anticline sites are analyzed at an Environmental Protection Agency (EPA) certified laboratory. Each sample is analyzed for the following parameters: Alkalinity, Bicarbonate, Calcium, Carbonate, Chloride, Magnesium, Nitrogen, (Nitrate + Nitrite as N), Phosphorus, Sodium, Sulfate, Hardness, and Total Suspended Solids. The Anions, Cations and Anion/Cation balance are calculated at the laboratory for quality assurance of data. BTEX parameters include: Benzene, Ethylbenzene, m+p-Xylenes, methyl tertbutyl ether, o-Xylene and Toluene. Duplicate samples are collected every 10th sample to ensure analysis is accurately conducted by the laboratory. Blank samples (using distilled water) are sent with every 10th sample as another quality control/quality assurance measure. Temperature blanks accompany every shipment of samples to ensure the samples remain under 4°C. (Sublette County Conservation District Pinedale Anticline Chemical Data 2000-2007).

Field data collected by Sublette County Conservation District staff include the following parameters: pH, Turbidity, Conductivity, Total Dissolved Solids (TDS), Temperature (C°) and Dissolved Oxygen (mg/L and %). Flows are measured when SCCD staff is able to safely do so. Photos are taken each time samples are collected as well as equipment used, personnel sampling, etc. Duplicate meter readings are collected every 10th sample collected. (Sublette County Conservation District Pinedale Anticline Field Data 2000-2007).

The Wyoming Department of Environmental Quality has established surface water quality standards for all streams in the state. No exceedance of these standards have been detected from the data collected by the SCCD from 2000-2007 at the Pinedale Anticline surface water sampling sites. Non-detections of all BTEX parameters were observed for the same time frame.

<u>Parameter</u>	<u>Wyoming DEQ Water Quality Standard</u>
Alkalinity	None available
Bicarbonate	None available
Calcium	None available
Carbonate	None available
Chloride	Aquatic Life Chronic Value (EPA) 230,000 mg/l
Conductivity	None available
Dissolved oxygen	Minimum 4mg/l Class I & II Streams 6.6 mg/l – 9.0 mg/l *
Hardness	None available
Magnesium	None available
Nitrate	10 mg/l
pH	6.6 – 9.0
Phosphorus	≤ 1.0 mg/l (Streams not flowing directly into lakes or reservoirs)
Sulfate	None available
Temperature	None available
Total Suspended Solids (TSS)	None available
Turbidity	None available

Please note: Generally surface water quality standards are based upon fresh water fishery limits.

Macroinvertebrates are collected at all PA surface water sites (NF1, NF4, NF19, NF30 and NF40) once per year in the fall. Three new sampling sites were established in 2007: NF50, NF60 and NF70. The Pinedale Anticline Water Task Group (PAWTG) determined that only macroinvertebrate samples would be collected at NF50, NF60 and NF70. Macroinvertebrates collected at each PA surface water site were sent onto a contract laboratory for identification. Replicate macroinvertebrate samples were collected at all PA sampling sites.

The macroinvertebrate data including data collected in 2007 at the PA sites is presented in the report entitled “An Assessment of the Biological Condition of the New Fork River, Near the Pinedale Anticline Project Area: 2007”.

References

http://deq.state.wy.us/wqd/watershed/surfacestandards/Downloads/Triennial/8-0464_Draft_%20Chapter_1.pdf
<http://www.epa.gov/waterscience/standards/>