Surface Water Model Narrative
Powder River Gas – Coal Creek POD

Purpose of Model

This model was prepared in order to compare the direct, indirect and cumulative impacts to surface water quality and quantity from 3 different alternatives for the Powder River Gas (PRG) Coal Creek development. The three alternatives are the No Action by Any Agency, the No Federal Action, and the Proposed Action Alternatives. These alternatives are described in greater detail in the main body of this Hydrology Technical Report, and in the PRG-Coal Creek EA which this technical report supports. A summary of the inputs for these different scenarios is shown in Table A1.

Electrical Conductivity (EC) and Sodium Adsorption Ratio (SAR) are the parameters considered to be the water quality parameters most likely to be affected by CBNG development (BLM, 2003). For this reason only these parameters are modeled. This assumption is also consistent with the FEIS and conclusions of the MDEQ as stated in their Record of Decision (ROD) for this FEIS which states that "Water produced from coal bed methane development contains a number of constituents. Of major concern is the electrical conductivity (EC) and sodium adsorption ratio (SAR) of this water because high EC and SAR impairs the usefulness of water for irrigation." The Statement of Basis prepared by the MDEQ for the MPDES permit needed for this project considers the complete set of parameters for which surface water standards exist. This statement is contained in Appendix B of this report. The MPDES permit for this project also includes requirements for whole effluent toxicity (WET) testing of the produced water to evaluate effects on aquatic life.

Model Overview:

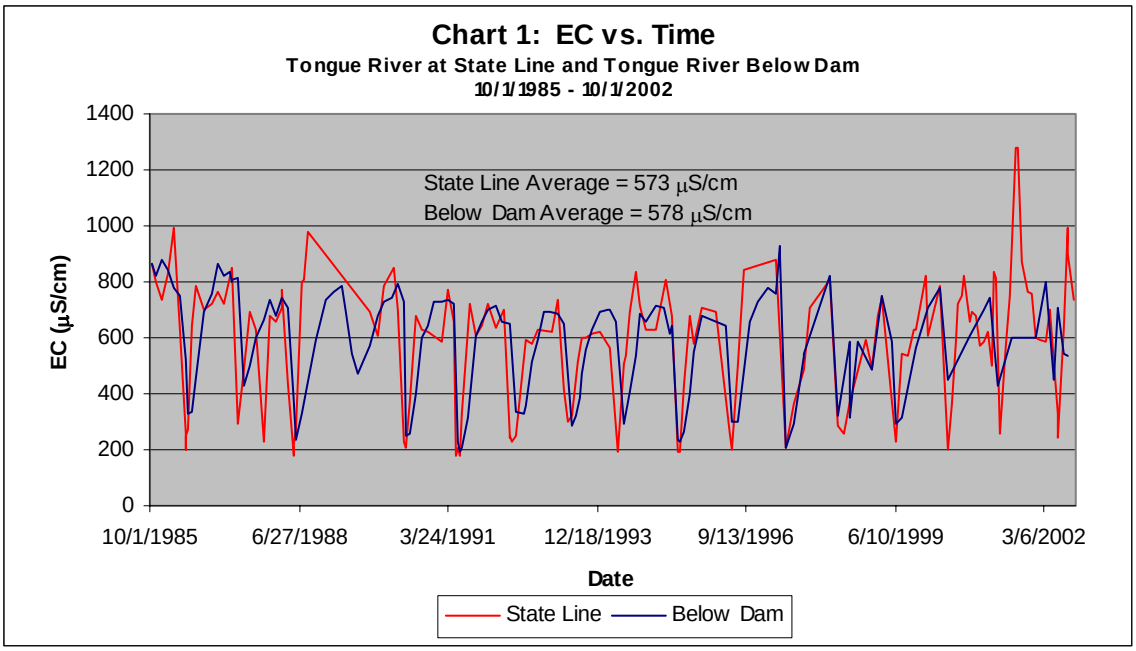
A mass balance type surface water model was prepared for the analysis of the Coal Creek POD. This model conducts mixing of the Tongue River water and other applicable inputs into the Tongue River Reservoir to determine the quality of the water that will flow out of the Dam, and the quality of the water when it reaches the Birney Day School station. Depending on the scenario being analyzed inputs into the Reservoir may include the quality and quantity of water entering the Reservoir from the Tongue River, from the Decker Coal Mines, from untreated MT CBNG discharges, and from treated MT CBNG discharge. The model considers the Tongue River Reservoir by assuming complete mixing of all upstream inputs, and discharging the volume that is recorded at the USGS station downstream from the dam.

This model does not consider evaporation or infiltration in either the reservoir or the river. Effects of the reservoir were modeled as simple mixing. In this model the inflows are mixed such that the outflow is an average of the inflows, and is less variable over time (i.e. the peaks are lower, troughs are higher, and changes are slower). The average EC, Na, Ca, and Mg values at the two stations would be comparable if no other inflows were occurring. This corresponds with what is observed when comparing water quality data from above and below the dam over the long term (Chart 1) and when evaluating

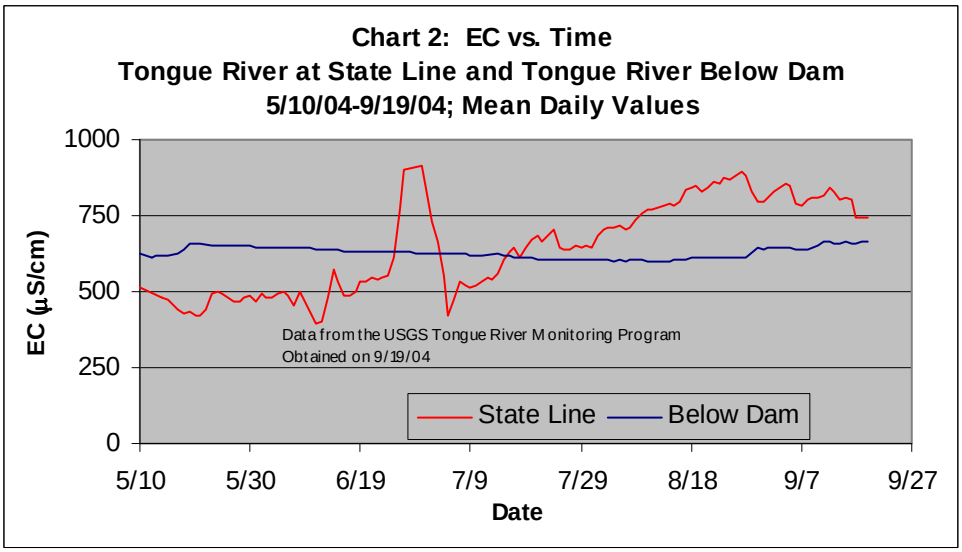
Table A1: Scenario Inputs

	Tongue River Water	East Decker	West Decker	Fidelity Untreated (existing)	Fidelity Treated (proposed)	PRG Coal Creek
Flow/Discharge Rate (cfs)	From State Line Station Data	2.66	1.08	3.57	3.79	variable (see below)
EC (μS/cm)	"	2621	2129	1987	742	742
SAR	"	20.9	8.8	53.8	3.0	3.0
Existing Environment	y	y	y	y	n	n
Foreseeable Conditions	y	y	y	y	y	n
Direct and Indirect Impacts						
No Action	y	y	y	y	n	n
No Federal Action	y	y	y	y	n	0.56 cfs
Proposed Action	y	y	y	y	n	1.0 cfs
Cumulative Impacts						
No Action	y	y	y	y	y	n
No Federal Action	y	y	y	y	y	1.39 cfs
Proposed Action	y	y	y	y	y	2.5 cfs

y = yes
n = no
cfs = cubic feet per second
μS/cm = microsiemens per centimeter



short term high resolution data (Chart 2). This approach does not take into account potential chemical reactions that may occur due to mixing. Equilibrium modeling of the mixed discharges was not conducted since such a model would be highly sensitive to the mineralogy of the bed and bank materials. Since the mineralogy of the materials that would come into contact with the mixed water would be quite varied due to the variations in geology, and difficult to predict on a watershed scale, such modeling was not conducted. It is felt that the simple mixing approach used is appropriate for the purpose of this analysis.



This model assesses EC, Na, Ca, and Mg as conservative elements. SAR is calculated from the resultant cation concentrations. The spreadsheet model used employs a steady-

state, mass-balance approach to estimate values for EC, Na, Ca, and Mg after two or more inflows are mixed. This steady state approach is commonly used by states in EPA Region VIII to predict possible effects of point-source discharges on receiving waters. This approach has been endorsed in EPA guidance (EPA, 1991).

Actual variations in surface water chemistry will be monitored through the MPDES permitting process, and the USGS gauging stations on the Tongue River. If adverse monitoring results are observed, appropriate action will be taken via the MPDES process to ensure that approved surface water quality standards are met. It should also be noted that the TMDL process for the Tongue River is ongoing, and any waste load allocation developed in that process will be incorporated into existing discharge permits as necessary.

This surface water model uses existing USGS data from the State Line, Below Dam, and Birney Day School (BDS) stations on the Tongue River, along with EPA discharge data from the East and West Decker coal mines. Water quality data for the coal mines is obtained from the coal seam monitoring well data submitted to the BLM in the Decker Coal Company Annual Hydrologic Permit Report, 2002 Water Year. The quality of the water discharged from the Fidelity outfalls was obtained from the Badger Hills POD book, and Fidelity's MPDES permit application for the proposed treated discharges. Data on water quality and quantity for the Powder River Gas-Coal Creek POD were obtained from the Powder River Gas- Coal Creek POD book.

There are currently 1 existing and 2 proposed CBNG discharge permits to the Tongue River. These permits are summarized on Table A2. The one existing permit (MT0030457) is for untreated discharge, while the draft permit for this project (MT0030660) and the pending application (MT0030724) are both for treated discharges. The Draft permit MT0030660 will become final upon completion of this EA. The existing and proposed Fidelity discharges are, or are proposed to be, located upstream of the Tongue River Reservoir.

Table A2: CBNG Tongue River Discharge Permits

Permit Number	Owner/Operator	Permit Status	Volume (gpm)	Treated (Y/N)
MT0030660	Powder River Gas, LLC	Draft	1,120	Y
MT0030457	Fidelity Exploration & Production Company	Issued, in review	1,600	N
MT0030724	Fidelity Exploration & Production Company	Application Pending	1,700	Y

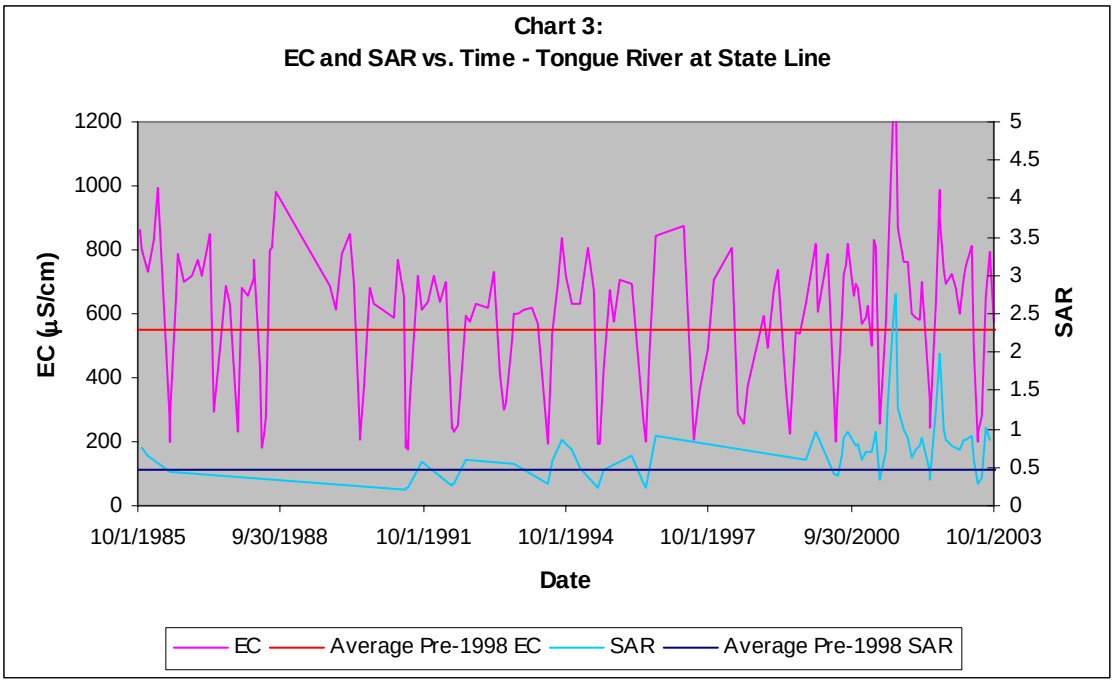
The existing environment was established by using historical stream flows and water chemistry, and adding in the existing permitted untreated CBNG discharge upstream from the reservoir of approximately 1040 gpm (MT0030457). Based upon data from the CX Field this untreated water would have an EC of approximately 1987 and an SAR of approximately 54. Additionally, the foreseeable conditions were determined by analyzing the existing and reasonably foreseeable discharges into the Tongue River, not

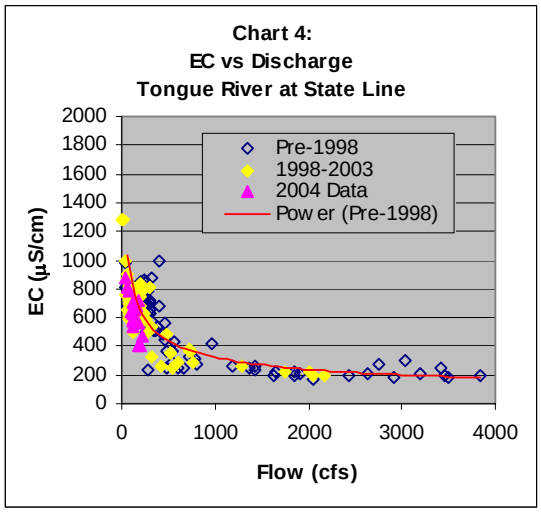
including the potential discharges from this project. This includes the permitted 3.57 cfs (1600 gpm) discharge of untreated water upstream from the reservoir (MT0030457), and the proposed discharge of 3.79 cfs (1,700 gpm) of treated water upstream from the reservoir (MT0030724). Based upon the MPDES permit application for treated discharge, and mixing with untreated water up to the surface water standard for SAR, this water would have an EC of approximately 742 μS/cm and an SAR of approximately 3.

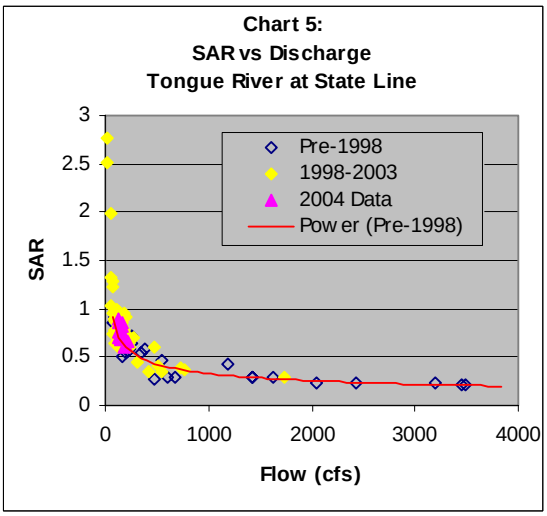
The direct impacts from the alternatives would results from the discharge of treated CBNG water to the Tongue River downstream from the Tongue River Dam. For the No Action alternative, no water would be discharged from the PRG Coal Creek POD. For the No Federal Action alternative 0.56 cfs (250 gpm) of treated CBNG water would be discharged. For the Proposed Action 1.0 cfs (450 gpm) of treated CBNG water would be discharged. Based upon the MPDES permit application for this discharge (MT0030660), and mixing with untreated water up to the surface water standard for SAR, this water would have an EC of approximately 742 μS/cm and an SAR of approximately 3. These results are compared to the existing conditions.

The cumulative impacts of the proposed PRG Coal Creek Project were determined by adding in the PRG Coal Creek discharge under each alternative to the Tongue River downstream from the Dam. With No Federal Action the fee wells within the Coal Creek Project (10 of the 18 total proposed wells) would be drilled and tested. It is also reasonably foreseeable that that portion of the MPDES permit relating to the fee wells would be used. Since the total MPDES permit application is for 2.5 cfs, it is assumed that a total of 1.39 cfs of treated CBNG water from the PRG Coal Creek Project would be discharged cumulatively. The proposed action is for the discharge of 2.5 cfs of treated CBNG water under the proposed MPDES permit. These results were compared to the foreseeable conditions.

CBNG development is Wyoming is not treated in this model. There are two main reasons for this. Monitoring data since 1998 (post-CBNG values) have shown that EC and SAR values have been above average (see Chart 3) at the State Line Station on the Tongue River; however when these values are assessed in relation to stream flow there does not appear to be an appreciable increase in either EC or SAR (See Charts 4 and 5). Rather, the high values observed are in line with expected values given the ongoing drought. Secondly, the position that the WY-DEQ has taken in the Tongue River watershed has been to not allow any discharge into the Tongue River. For these reasons it is considered to be appropriate to treat CBNG development in the Tongue River watershed in Wyoming as non-discharging, and therefore not having an appreciable effect on the EC or SAR of the Tongue River.







Surface Water Standards

The Montana Board of Environmental Quality has established surface water standards for EC and SAR. These standards have been reviewed and approved by the EPA, and therefore have Clean Water Act standing. The Northern Cheyenne Tribe has also adopted surface water quality standards for EC and SAR. The Northern Cheyenne Tribe has not currently been granted Treatment as a State (TAS) status by the EPA, and therefore the EPA has not reviewed these standards. As such the Northern Cheyenne numerical standards do not have Clean Water Act standing; however they do set out the Tribe's considered determination of the water quality needed to protect irrigated agriculture on the Reservation (BLM, 2003). Therefore the Northern Cheyenne standards provide reasonable criteria against which to compare the resulting water quality at the southern boundary of the Northern Cheyenne Reservation. These various standards are

summarized in Table A3 below. The standards are in terms of monthly mean values or instantaneous maximum values.

Table A3: Surface Water Standards for the Tongue River

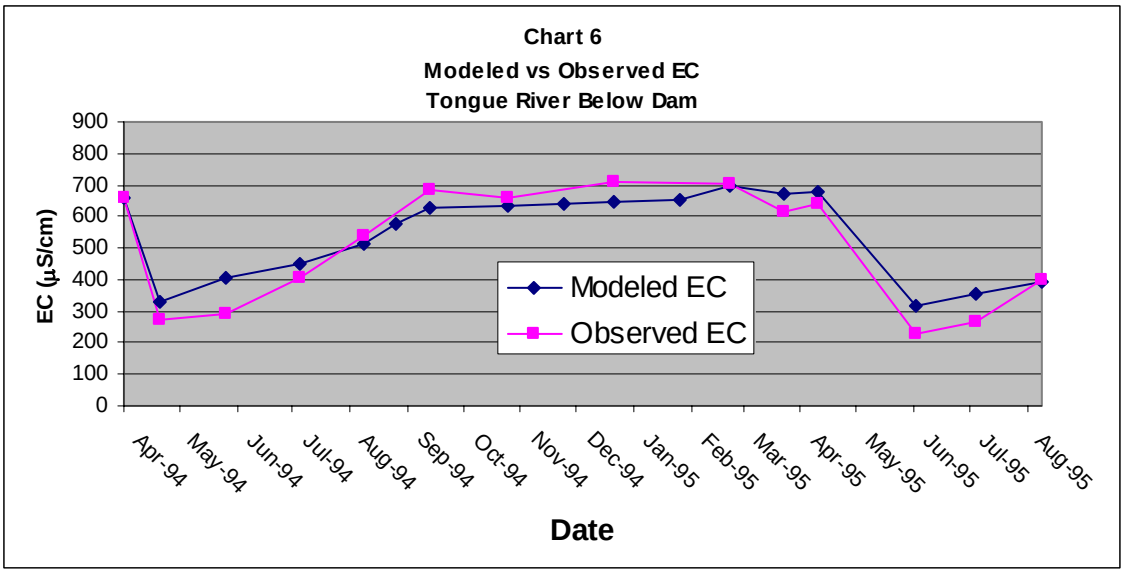
	Monthly Mean SAR	Inst. Max SAR	Monthly Mean EC (μS/cm)	Inst. Max EC (μS/cm)
MDEQ Irrigation Season Standards	3.0	4.5	1000	1500
MDEQ Non-Irrigation Season Standards	5.0	7.5	1500	2500
Northern Cheyenne Irrigation Season Standards-Southern Boundary	---	2.0	1000	2000
Northern Cheyenne Non-Irrigation Season Standards-Southern Boundary	---	2.0	1000	2000

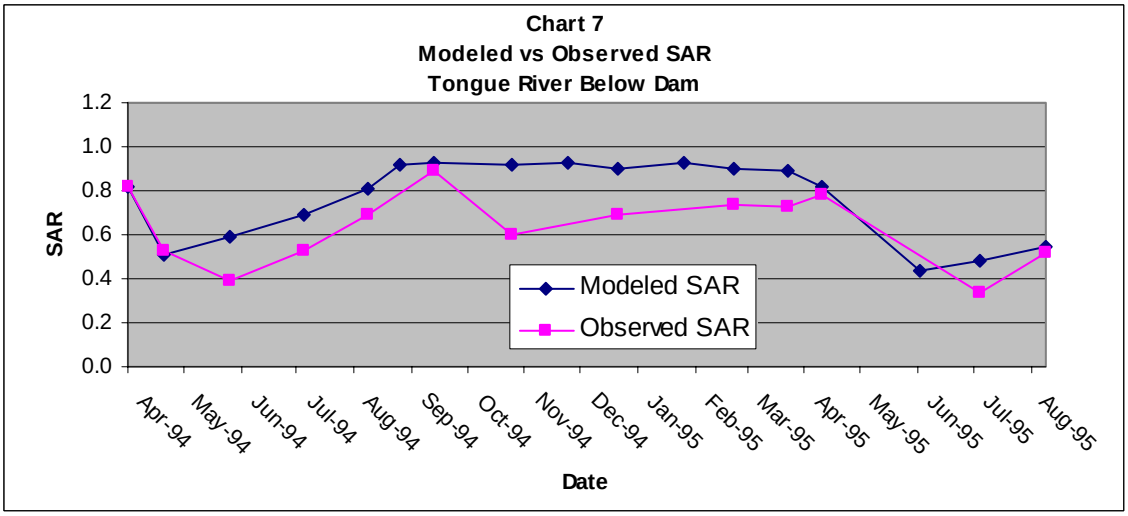
The irrigation season specified by the MDEQ is from March 1 to October 31 while the irrigation season specified by the Northern Cheyenne is from April 1 to November 15.

For the purposes of this impact analysis the high mean monthly and low mean monthly results will be compared to the mean monthly standards, while the 7Q10 result will be compared to the instantaneous maximum standards. This is appropriate since the 7Q10 is the lowest flow that would be expected to occur for 7 consecutive days over any 10 year period. The 7Q10 flow value is much less than the mean monthly values. For example, in the Tongue River at the state line station, the 7Q10 flow is 35 cfs while the Low Monthly Mean flow is 176 cfs and the High Monthly Mean flow is 1,638 cfs. It should also be noted that this is an impact analysis, not a regulatory determination. From a regulatory point of view the instantaneous standard applies to the maximum allowable concentration from the analysis of any discrete or composite sample collected, independent of the flow rate and duration of the sampling event. The 7Q10 analysis merely gives standard low flow numbers with which an analysis can be conducted.

Model Calibration Using Historical Values, Calculation of Existing Conditions, and Calculation of Foreseeable Conditions:

This mass balance model was first run for the time period from April 1994 to September 1995, and comparing to the actual values measured during this time. Inflows during this time period include the Tongue River, the East Decker Mine, and the West Decker Mine. An initial volume in the reservoir of 38,870 Ac-ft was assumed. This is the average value reported by the MT-DEQ in the Tongue River TMDL status report. Results for the station below the dam are assumed to be the same as the reservoir water chemistry (assumes complete mixing). The results of this run matched reasonably well with observed data (see charts 6 and 7 below), and therefore no further adjustments were made to this portion of the model.





The model results were then graphed as EC vs. Discharge and SAR vs. Discharge graphs. A power trend line was determined for the modeled data, and this trend line was used to determine the EC and SAR values at 7Q10 (the lowest flow that would be expected to be seen for seven consecutive days over any ten year period) LMM (low mean monthly flow) and HMM (high mean monthly) flows. The discharge values and ambient water quality parameters used for this analysis are shown on Table A1. The modeled values were compared to the EC and SAR values for these flows based upon the overall pre-98 USGS data, and the analysis contained in the MDEQ's Statement of Basis for the PRG Coal Creek MPDES permit (See Appendix B). The results at the Birney Day School Station were determined by adding the known increases in EC and SAR to the results from the station below the dam during the flows in question. The EC and SAR values were adjusted at this stage in order to match historical values at these flows. At this point the constant correction factors needed to have the modeled time period match the overall historical record were set as constants for the future scenarios.

It should be noted that this approach is not a regulatory compliance analysis, but rather an impact analysis. The standards in this analysis provide a context with which to gauge significance. A regulatory compliance analysis would use median chemistry with a degree of variability, not the chemistry at particular flows.

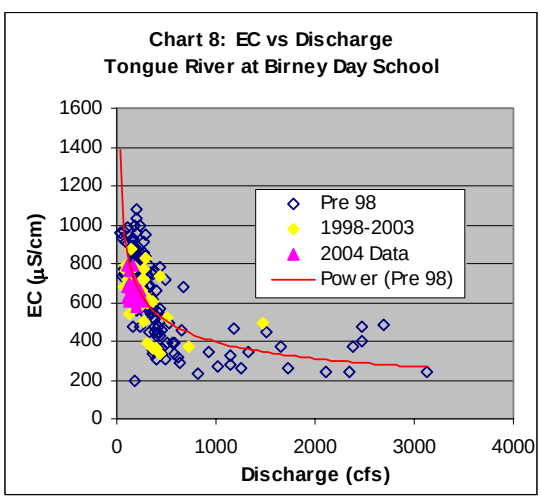
Once the model had been calibrated vs. historical values the existing untreated discharge of CBNG water was added in. The discharge is currently at a rate of approximately 1040 gpm of water with an EC of 1987 µS/cm and an SAR of 54. The results of this addition are shown in Table A4. These results provide for comparison to the direct impacts. It should be noted that despite these calculations, a noticeable increase in either EC or SAR have not been observed in USGS monitoring data since the start of CBNG production when values are plotted vs. flow (see Charts 6 and 7 below). Baseline data for all parameters for which surface water criteria exist are included in the SOB in Appendix B of the Hydrology Technical Report for this project.

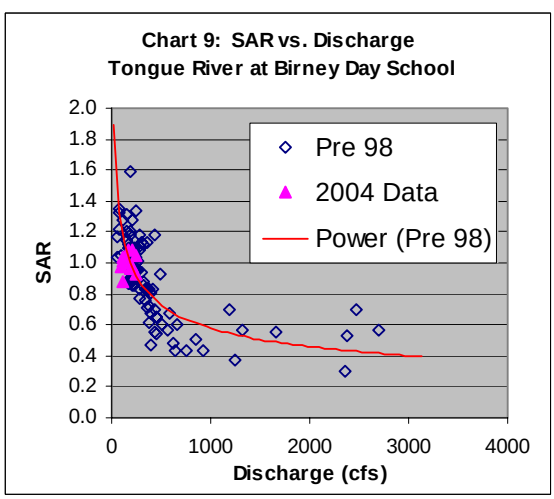
Table A4: Comparison of Historical Surface Water Conditions to Modeled Existing Conditions

		Historical Conditions+			**Modeled Existing Conditions***		
	Flow Conditions	Discharge (cfs)	EC (µS/cm)	SAR	Discharge (cfs)	EC (µS/cm)	SAR
Tongue River Below Dam	7Q10	70.0	809	0.97	73.6	832	1.27
	LMM	179.0	646	0.78	182.6	664	0.98
	HMM	1429.0	392	0.49	1432.6	398	0.55
Tongue River at Birney Day School	7Q10	49.0	1134	1.56	52.6	1157	1.87
	LMM	173.0	719	1.02	176.6	737	1.23
	HMM	1119.0	377	0.56	1122.6	383	0.62

+ The historical conditions for the station Below the Dam were determined from USGS data collected from 1975-1998. Birney Day School historical conditions were determined from USGS data collected from 1978-1998.

* The modeled existing conditions include historical values, plus modeled effects from the existing 3.57 cfs discharge of untreated CBNG water upstream from the Tongue River Reservoir.





Once the existing conditions had been established the foreseeable conditions also needed to be established in order to compare to potential cumulative impacts. These foreseeable conditions include the existing untreated discharge at its full permitted limit (1600 gpm) and the proposed treated discharge upstream from the reservoir at its full proposed limit (1700 gpm).

Results:

Direct Impacts:

The direct impacts of the proposed Powder River Gas (PRG) Coal Creek Project were determined by adding in the Coal Creek discharge under each alternative to the Modeled Existing Conditions. Based upon the statement of basis prepared by the MDEQ, the PRG discharges would have an SAR of approximately 3 and an EC of approximately 742 μS/cm. The direct impacts under the No Action alternative the would be the same as the Modeled Existing Conditions conditions, since no additional discharge would occur. With No Federal Action the state and fee wells within the Coal Creek Project (10 of the 18 total proposed wells) would be drilled and produced. Based upon the information contained within the POD book for this proposal, these wells would account for 0.56 cfs (250 gpm) of CBNG discharge. The proposed action with all 18 wells would account for 1.0 cfs (450 gpm) of discharge. It should be noted here that the MPDES application is for 2.5 cfs, however since this total volume would not be produced by the wells that are the subject of this proposal, this additional volume will be addressed in the cumulative impacts section rather than as a direct impact. The results for these different alternatives are shown on Table A5.

<u>No Federal Action:</u>

The direct impacts from the No Federal Action alternative result from the discharge of 0.56 cfs of CBNG water with an EC of approximately 742 μS/cm, and an SAR of 3.0. During LMM flows below the Dam the flow of the Tongue River would increase from 181.3 cfs to 181.9 cfs, the EC would increase slightly from 658 μS/cm to 659 μS/cm, and the SAR would increase from 0.91 to 0.92 (SAR is unitless). At the Birney Day School station during LMM flow this alternative would increase flow from 175.3 cfs to 175.9 cfs, the EC would increase slightly from 730.6 to 731.5 μS/cm (both of which round to 731), and the SAR would increase slightly from 1.15 to 1.16.

Neither the MDEQ nor Northern Cheyenne Standards instantaneous surface water standards are exceeded as a direct result of the PRG Coal Creak Project for 7Q10 flows under the No Federal Action Alternative. The mean monthly standards are also not exceeded during mean monthly flows. Since these EC and SAR standards were expressly developed in order to protect the beneficial uses of the Tongue River, the direct impacts under this alternative are not anticipated to impact the beneficial uses of the Tongue River due to increases in EC or SAR.

The MDEQ has also conducted an analysis of this discharge in relation to the MPDES permit. This analysis is documented in the SOB, which is included in Appendix B of the Hydrology Technical Report. This analysis included consideration of a wide range of parameters, and the conclusion of this analysis was that the discharge would not cause

exceedance of any surface water quality criteria. Chemical monitoring of the discharge, and in stream water quality, are also required in the permit. If monitoring shows that any standards are exceeded the MPDES permit may be reopened by the MDEQ. The MPDES permit also requires chronic whole effluent toxicity (WET) testing of the CBNG discharge water from this project to ensure that adverse impacts to aquatic life will not result from this discharge. According to the EPA one sample of CBNG water from the Big George coal seam in Wyoming has failed the EPA WET protocol. The MDEQ may require additional monitoring, a toxicity identification evaluation (TIE) analysis, and may reopen the permit, if WET testing demonstrates toxicity of the effluent.

Proposed Action:
The direct impacts from the Proposed Action alternative result from the discharge of 1.0 cfs of CBNG water with an EC of approximately 742 μS/cm, and an SAR of 3.0. During LMM flows below the Dam the flow of the Tongue River would increase from 181.3 cfs to 182.3 cfs, the EC would increase from 658 μS/cm to 659 μS/cm, and the SAR would increase from 0.91 to 0.92. At the Birney Day School station during LMM flow this alternative would increase flow from 175.3 cfs to 176.3 cfs, the EC would increase from 731 μS/cm to 732 μS/cm, and the SAR would increase from 1.15 to 1.17.

Neither the MDEQ nor Northern Cheyenne Standards instantaneous surface water standards are exceeded as a direct result of the PRG Coal Creek Project for 7Q10 flows under the Proposed Action Alternative. The mean monthly standards are also not exceeded during mean monthly flows. Since these EC and SAR standards were expressly developed in order to protect the beneficial uses of the Tongue River, the direct impacts under this alternative are not anticipated to impact the beneficial uses of the Tongue River due to increases in EC or SAR.

As noted above, the MDEQ has also conducted an analysis of this discharge in relation to the MPDES permit (See SOB in Appendix B), and the conclusion of this analysis was that the discharge would not cause exceedance of any surface water quality criteria.

Cumulative Impacts:
The cumulative impacts of the proposed PRG Coal Creek Project were determined by including the proposed treated CBNG discharge upstream from the reservoir into the surface water model, and then adding in the PRG Coal Creek discharge under each alternative to the Tongue River downstream from the Dam. With No Federal Action it is assumed that a total of 1.39 cfs of treated CBNG water would be discharged from the PRG Coal Creek Project. The results of these scenarios will be compared to the Foreseeable Conditions. The results of the No Action alternative will be the same as the Foreseeable Conditions since no additional discharge would occur. With the proposed action the discharge would be 2.5 cfs. The results of these analysis are shown on Table A6.

No Federal Action:
The cumulative impacts from the No Federal Action alternative result from the discharge of 1.39 cfs of CBNG water with an EC of approximately 742 μS/cm, and an SAR of 3.0.

During LMM flows below the Dam the flow of the Tongue River would increase from 186.4 cfs to 187.8 cfs, the EC would increase from 664 μS/cm to 665 μS/cm, and the SAR would increase from 1.01 to 1.03. At the Birney Day School station during LMM flow this alternative would increase discharge from 180.4 cfs to 181.8 cfs, the EC would increase from 736 μS/cm to 738 μS/cm, and the SAR would increase from 1.25 to 1.27.

Neither the MDEQ nor Northern Cheyenne Standards instantaneous surface water standards are exceeded as a cumulative result of the PRG Coal Creek Project for 7Q10 flows under the No Federal Action Alternative. The mean monthly standards are also not exceeded during mean monthly flows. Since these EC and SAR standards were expressly developed in order to protect the beneficial uses of the Tongue River, the direct impacts under this alternative are not anticipated to impact the beneficial uses of the Tongue River due to increases in EC or SAR.

As noted above, the MDEQ has also conducted an analysis of this discharge in relation to the MPDES permit (See SOB in Appendix B), and the conclusion of this analysis was that the discharge would not cause exceedance of any surface water quality criteria.

Proposed Action:
The cumulative impacts from the Proposed Action alternative result from the discharge of 2.5 cfs of CBNG water with an EC of approximately 742 μS/cm, and an SAR of 3.0. During LMM flows below the Dam the flow of the Tongue River would increase from 186.4 cfs to 188.9 cfs, the EC would increase from 664 μS/cm to 667 μS/cm, and the SAR would increase from 1.01 to 1.04. At the Birney Day School station during LMM flow this alternative would increase flow from 180.4 cfs to 182.9 cfs, the EC would increase from 736 μS/cm to 740 μS/cm, and the SAR would increase from 1.25 to 1.28.

Neither the MDEQ nor Northern Cheyenne Standards instantaneous surface water standards are exceeded as a cumulative result of the PRG Coal Creek Project for 7Q10 flows under the Proposed Action Alternative. The mean monthly standards are also not exceeded during mean monthly flows. Since these EC and SAR standards were expressly developed in order to protect the beneficial uses of the Tongue River, the direct impacts under this alternative are not anticipated to impact the beneficial uses of the Tongue River due to increases in EC or SAR.

As noted above, the MDEQ has also conducted an analysis of this discharge in relation to the MPDES permit (See SOB in Appendix B), and the conclusion of this analysis was that the discharge would not cause exceedance of any surface water quality criteria.

Summary:
The No Action Alternative would have the least impacts to surface water quality while the Proposed Action Alternative would have the greatest impact. This is due to the increased volume of discharge under this alternative. None of the analyzed alternatives would cause exceedance of the surface water standards for EC or SAR. As a result it is not anticipated that the beneficial uses of the Tongue River to be impacted due to increases in EC and SAR.

The MDEQ has also analyzed the effects of the Powder River Gas - Coal Creek POD discharge for all numerical, narrative, and non-degradation surface water standards. The MDEQ has determined that the 2.5 cfs discharge will not cause exceedences of any surface water quality criteria. A full copy of the MDEQ's the Statement of Basis, the MPDES permit, and Decision Letter are included in Appendix B of this technical report. The MDEQ must review permits to discharge at least once every 5 years. There is also a reopener prevision in all permits which allows the MDEQ to alter the terms of the permit if properly documented adverse monitoring results are recorded, or if the ongoing TMDL process requires changes in existing permits.

Table A5: Comparison of Direct Impacts to Surface Water from the Alternatives

		Modeled Existing Conditions			No Federal Action (250 gpm from PRG)			Proposed Action (450 gpm from PRG)		
	Flow Conditions	Flow (cfs)	EC (µS/cm)	SAR	Flow (cfs)	EC (µS/cm)	SAR	Flow (cfs)	EC (µS/cm)	SAR
Tongue River Below Dam	7Q10	72.3	824.6	1.17	72.9	825.0	1.18	73.3	825	1.18
	LMM	181.3	658	0.91	181.9	659	0.92	182.3	659	0.92
	HMM	1431.3	396	0.53	1431.9	397	0.53	1432.3	397	0.53
Tongue River at Birney Day School	7Q10	51.3	1149	1.76	51.9	1150	1.77	52.3	1150	1.78
	LMM	175.3	731	1.15	175.9	731	1.16	176.3	732	1.17
	HMM	1121.3	381	0.60	1121.9	381	0.60	1122.3	381	0.60

Note: The Direct result of the No Action alternative would be no discharge, thus the result would be no different than existing conditions.

Table A6: Comparison of Cumulative Impacts to Surface Water from the Alternatives

		Foreseeable Conditions (Non-Project) (0 gpm from PRG)			No Federal Action (624 gpm from PRG)			Proposed Action (1,122 gpm from PRG)		
	Flow Conditions	Flow (cfs)	EC (µS/cm)	SAR	Flow (cfs)	EC (µS/cm)	SAR	Flow (cfs)	EC (µS/cm)	SAR
Tongue River Below Dam	7Q10	77.4	824	1.30	78.8	825	1.32	79.9	826	1.34
	LMM	186.4	664	1.01	187.8	665	1.03	188.9	667	1.04
	HMM	1436.4	401	0.56	1437.8	402	0.56	1438.9	402	0.57
Tongue River at Birney Day School	7Q10	56.4	1149	1.90	57.8	1150	1.92	58.9	1150	1.93
	LMM	180.4	736	1.25	181.8	738	1.27	182.9	740	1.28
	HMM	1126.4	386	0.63	1127.8	386	0.64	1128.9	387	0.64

Note: The Cumulative result of the No Action alternative would be no discharge, thus the result would be no different than foreseeable conditions.