Q. Please state your name, business address and present position with PacifiCorp ("Company").

A. My name is Cindy A. Crane. My business address is 1407 West North Temple, Suite 310, Salt Lake City, Utah 84116. My position is Vice President, Interwest Mining Company and Fuel Resources for PacifiCorp Energy.

Q. Briefly describe your business experience.

A. I joined PacifiCorp in 1990 and have held positions of increasing responsibility, including Director of Business Systems Integration, Managing Director of Business Planning and Strategic Analysis and Vice President of Strategy and Division Services. My responsibilities have included the management and development of PacifiCorp's ten-year business plan, assessing individual business strategies for PacifiCorp Energy, managing the construction of the Company's Wyoming wind plants and assessing the feasibility of a nuclear power plant. In March 2009, I was appointed to my present position as Vice President of Interwest Mining Company and Fuel Resources. In my position I am responsible for the operations of Energy West Mining Company and Bridger Coal Company as well as overall coal supply acquisition and fuel management for PacifiCorp's coal plants.

Q. Have you previously filed testimony in this proceeding?

A. No. I did not file direct testimony in this proceeding.

Q. What is the purpose of your rebuttal testimony?

A. The purpose of my rebuttal testimony is to:

- Present the Company's update to coal prices utilized in rebuttal;

- Discuss the Company's fuel cost update to the base case, four-unit operation as well as the two -unit operation;
- Respond to the testimony of Division of Public Utilities witness Mr. Croft requesting the Company provide a sinking fund calculation for the underground and surface mine for the base case that extends through the life of the mine;
- Respond to Mr. Croft's recommendation that post-2030 mine reclamation trust contribution costs be a component of the Company's analysis;
- Respond to the Office of Consumer Services witness Mr. Falkenberg's claim that the Company has created a mismatch between recovery of the final reclamation costs in the selective catalytic reduction ("SCR") and gas firing cases;
- Address the testimony of Division of Public Utilities witness Mr. Evans regarding the demand for Bridger Coal and describe the overall supply and demand for coal in Southwest Wyoming as well as the current fuel supply arrangements and transportation options for the Company plants;
- Rebut the contention of Sierra Club witness Dr. Fischer and DPU's witness Mr. Evans that the Company could feasibly sell coal to other facilities, sell coal to other Company coal plants and explore other markets and avoid immediate reclamation of the mine.
- Rebut Dr. Fischer's contention that if Black Butte coal can be delivered economically, then the Bridger mine could be delivered to other PacifiCorp locations at a competitive price; and

- Rebut the Western Resource Advocates witness Ms. Kelly's claim that it appears the Bridger Coal surface mine would remain competitive and that the timing and purpose of the reclamation costs for beginning reclamation in 2012, prior to beginning installation of the SCR retrofit, does not seem reasonable.

Company Updates to Coal Costs

Q. Has the Company updated coal costs as part of the Company's rebuttal?

A. Yes. The Company has updated its long-term price projections for the coal fleet. The coal update reflects the Company's most recent coal price projections of mine operating costs for the captive mines as well as forward market and transportation prices for purchased coal.

Q. Does the Company's rebuttal testimony include updated coal price projections for both the Jim Bridger plant four-unit and two-unit operations?

A. Yes. Bridger Coal's mine operating costs and mine capital, as well as third party coal costs, have been updated to reflect both plant operating scenarios.

Q. Please explain the nature of the updates and the change in assumptions associated with the Jim Bridger plant scenarios.

A. Subsequent to the original filing, Bridger Coal Company completed extensive life of mine planning and cost analysis, and as a result, the Company has more current and detailed mine plans to rely on as part of this analysis. Consistent with the Company's direct testimony, the two-unit coal operations scenario still reflects the closure of the Bridger Coal surface mine in connection with conversion to gas

of Jim Bridger Units 3 and 4. The base case continues to reflect a two dragline operation, but due to the new mine plan, the draglines are no longer both deployed in the southern part of the surface mine. Instead, one of the draglines will be uncovering coal in [redacted], a previously undisturbed mining area. By placing the second dragline in [redacted], Bridger Coal dramatically reduces the increasing overburden required to be removed in mining the deeper seams in the southern portion of the mine.

. **Coal Cost Update**

Q. Please explain the coal cost updates to the Jim Bridger plant fuel options included in the Company's rebuttal filing.

A. As shown in Mr. Link's Confidential Exhibit RMP__(RTL-1R), coal costs in the four-unit operation increased. Measured on a price related basis, cash coal costs increased by approximately [redacted] on a net present value ("NPV") basis. The increase incorporates updated third party coal prices and transportation costs for Black Butte coal as well as updated cash operating costs for Bridger Coal Company.

Coal costs in the two-unit operation decreased, which is also shown in Mr. Link's Confidential Exhibit RMP__(RTL-1R). On a price related basis, Jim Bridger plant cash coal costs decreased by approximately [redacted] on a NPV basis and also incorporate updated third party coal prices and transportation costs for Black Butte coal and Bridger Coal cash operating costs.

Q. Have the final reclamation trust contributions and sinking fund analyses been updated for Bridger Coal Company?

A. Yes. As reflected in Mr. Link's Confidential Exhibit RMP__ (RTL-3R), the Company updated its sinking fund analysis and final reclamation trust contribution rates. The Company's share of annual contributions to the final reclamation trust in the base case increased from [redacted] in the original filing to [redacted] in the update. In the two-unit scenario, final reclamation trust contributions decreased slightly through 2017 and increased thereafter.

Coal Cost Update – Four-Unit Operation (Base Case)

Q. Can you please identify the primary drivers which resulted in the estimated [redacted] coal cost related increase for the base case between the original filing and rebuttal?

A. Yes. The table below lists the major cost related variances from the original filing.

Source	NPV Millions
Black Butte Coal Costs	[redacted]
Union Pacific Rail Costs	[redacted]
Bridger Coal Operating Costs	[redacted]
Change in Supply Mix	[redacted]

Approximately [redacted] million of the [redacted] million increase in Bridger Coal operating costs is associated with the increased final reclamation contribution trust levels identified above. The remainder of the increase is primarily associated with higher mine operating costs during the 2015 - 2017 period while [redacted] is being permitted and developed. During this period both draglines continue to operate in the southern portion of the surface mine; however, each dragline is

operating on a single shift per day rather than two shifts per day**.**

Q. What is causing the [redacted] increase for Change in Supply Mix in the base case?

A. The change in supply mix reflects the increase in supply cost for the Jim Bridger plant primarily during the development of the [redacted] Wash reserves. The increase principally occurs during the 2015 – 2017 timeframe and reflects the additional cost associated with replacement of Bridger Coal Company with Black Butte deliveries during the 2015-2017 timeframe while the [redacted] reserves are being developed.

Q. Why are both Black Butte coal costs and Union Pacific rail costs projected to increase in the base case?

A. [redacted]

Coal Cost Update – Two-Unit Operation

Q. Please identify the primary drivers of the approximate [redacted] cost related decrease (NPV), between the original filing and rebuttal.

A. There is approximately a [redacted] decrease in Bridger Coal cash operating costs and an [redacted] increase in plant coal costs due to a change in supply mix between Bridger Coal Company and Black Butte coal supplies. The decrease in Bridger Coal Company cash operating costs reflects reduced underground mine operating costs starting in 2017 partially offset by an increase associated with higher final reclamation costs starting in 2019.

Q. Have mine capital projections been updated?

A. Yes, as provided in Mr. Link's Confidential Exhibit RMP__(RTL-2R), mine capital expenditures have increased in both the base case and two-unit operation scenarios. The increase reflects additional surface and underground mine reserve acquisition costs as well as additional mine extension costs and longwall system rebuild/replacement costs.

Division of Public Utilities/Sinking Fund Calculation

Q. Please explain the purpose of Bridger Coal Company's sinking fund calculation.

A. The Bridger Coal Company owners established a final reclamation trust in 1989 to fund actual final reclamation work. The purpose of the sinking fund calculation is to determine the appropriate contribution rate and ensure sufficient funds exist in the trust to support final reclamation work once coal production ceases. Contributions to the final reclamation trust are included as part of Jim

Bridger plant coal costs and are a component of net power costs for ratemaking purposes.

Q. On page 10, lines 186-189, of his direct testimony, Mr. Croft recommends that the Company be required to provide a surface and underground reclamation sinking fund analysis related to the four-unit operation. Has the Company updated its sinking fund analysis for theJim Bridger plant fueling operations as part of its rebuttal?

A. Yes. As discussed earlier, the Company has updated its sinking fund analysis for each fueling operations scenario and final reclamation trust contribution rates have been updated accordingly.

Q. A sinking fund analysis was provided in discovery for the different operational scenarios. Was a sinking fund analysis previously prepared for the four-unit operation base case in the Company's original filing?

A. Yes. A final reclamation plan for the base case was originally prepared in 2009 and utilized in development of a sinking fund analysis and final reclamation trust contributions. That final reclamation plan, however,was not updated prior to the original filing and therefore no longer reflectedthe final reclamation trust contributions necessary to support future final reclamation expenses.

Q. On page 11, lines 211-212, of his direct testimony, Mr. Croft recommends that the post-2030 surface mine reclamation costs be a final component in the Company's analysis. Has the Company incorporated the post-2030 final reclamation contribution costs in its analysis?

A. Yes. As described in the rebuttal testimony of Company witness Mr. Link, the Company's rebuttal analysis now includes the impact of the different final reclamation trust contributions through 2037, when coal production ceases and the Jim Bridger plant is assumed to retire at the end of its book life.

Office of Consumer Services/Mismatch of Final Reclamation Funds

Q. Mr. Falkenberg states on page 15, lines 410-411, of his direct testimony that the Company has created a mismatch between the recovery of the costs associated with the final reclamation in the SCR and gas-firing cases because in the continued coal operation case, some of the reclamation costs are not recovered until the period after the study horizon, while full recovery occurs in the gas conversion case. Is this correct?

A. Yes. In the Company's original filing, contributions to the final reclamation trust were included through 2030 as a component of cash costs used in the System Optimizer model ("SO Model"). The Company's rebuttal analysis now includes reclamation costs contributions through 2037.

Bridger Coal Company Surface Mine - Supply and Demand

Q. With respect to the shutdown of the Bridger surface mine, Mr. Evans, on page 14 of his direct testimony, and Dr. Fischer, on page 24 of his direct testimony, both contend that the Company has not seriously considered the international market or the possibility that other Company coal plants could utilize the excess Bridger coal. Further, Mr. Evans contends that the Company could continue to extract small quantities of coal through surface mining. Please comment.

A. Mr. Evans and Dr. Fischer intimate that the Company has not considered other options for Bridger surface coal. As the Company previously communicated in its responses to data requests DPU 8.7 and OCS 15.1, there is already a significant imbalance between supply and demand for coal in Southwest Wyoming. With the impending gas conversion of Naughton 3, that imbalance surges. The Company believes that under a two-unit coal operation at the Bridger plant at least one other mine in Southwest Wyoming would be shuttered. Southwest Wyoming is a niche market with limited participants. The relatively low heat content in comparison to Colorado and Utah coals and the high ash content relative to Powder River Basin coals confines Southwest Wyoming coal largely to the local area.

Q. Mr. Evans suggests that the coal produced by the Bridger mine can be shipped to other Company plants. Do you agree?

A. No, not with the current infrastructure. Significant capital investments by Bridger Coal Company would be required for the construction of a rail loadout facility and a spur to the Union Pacific mainline, and attainment of any necessary permits. Besides ignoring the lack of a rail loadout facility at Bridger Coal Company, Mr. Evans and Dr. Fischer disregard the fact that most of the Company plants are not capable of receiving coal by rail. There are only two Company operated plants that can accept coal delivery by rail: Jim Bridger and Dave Johnston. Dave Johnston is the lowest cost coal resource in the system and served by the Burlington Northern Railway not the Union Pacific, the rail line closest to Bridger Coal Company. Both the Naughton and Wyodak plants receive their coal via overland conveyor. The Utah plants receive all of their coal either via conveyor

from Deer Creek or trucked from local mines; neither the Hunter plant nor the Huntington plant are located near enough to the Union Pacific mainline to make coal deliveries feasible.

Q. Besides the lack of rail infrastructure, are there other obstacles to shipping coal from Bridger Coal's surface mine?

A. Yes. Both Mr. Evans and Dr. Fischer ignore the coal quality characteristics particular to the Bridger Coal surface mine. Relative to other Southwest Wyoming mines, Bridger surface coal is a relatively low heat content, high ash coal and would be problematic for the Naughton plant resulting in increased opacity levels. Bridger surface coal's low heat content and low ash fusion temperature are incompatible with the quality specifications for the Utah plants and result in boiler slagging. The high ash content would likely cause increased opacity levels at the Dave Johnston plant.

In addition to the coal quality challenges discussed above, Mr. Evans and Dr. Fischer also ignore the Company's contractual obligations under its long-term coal supply agreements. With the exception of the Dave Johnston plant, the Company-operated plants have long-term supply commitments that extend through 2020 and failure to take the minimum contract obligations would result in liquidated damages.

Q. Would Bridger Coal shipments to Company non-operated plants face similar obstacles?

A. Yes. With the exception of Colstrip, the Company non-operated plants all have rail unloading facilities. However, the current coal supply arrangements for

Cholla extend through 2024; Hayden through 2027 and Craig through 2020 and failure to take the minimum contract obligations would result in liquidated damages. The jointly owned plants require all coal supplies to meet plant quality specifications. These quality specifications are collectively set and agreed to by the plant owners; the Company cannot arbitrarily elect to consume Bridger coal on its own account in any of the joint owned plants.

Q. Can the Bridger surface mine operate at a reduced level in the two-unit scenario?

A. No. This could not be done economically and not without increasing the production risk of Bridger Coal's underground mine and potentially the safety of its employees. Operation of the surface mine at a reduced level in a two-unit operation would necessitate a further reduction in the underground mine production. Due to the geological characteristics of the roof for the underground mine, the Company cannot shutdown the longwall machine, the main piece of mining equipment for the underground mine, for an extended period of time once longwall mining has commenced in a panel. Once a longwall panel is depleted and the longwall machine is relocated to a new panel and setup face, the Company may be able to idle the longwall machine depending on geologic conditions in the localized area and the propensity for convergence. However, idling the longwall system which produces typically 80-85% of underground mine's coal production would create significant disruptions to the efficient utilization of resources and result in higher costs.

Q. In his direct testimony on page 26, lines 4 through 11, Dr. Fischer states:

In 2011, Black Butte delivered coal to Jim Bridger at an average price of $1.87/MMBtu and to Valmy at $2.87/MMBtu. If the differential here of approximately $1/MMBtu is due to transportation cost alone, evidence indicates that Bridger mine could be delivered to other PacifiCorp locations at a competitive price to their anticipated supply costs.

Has Dr. Fischer presented any evidence to support this claim?

A. No. Dr. Fischer has not provided any evidence nor is Dr. Fischer entitled to his own set of facts. Whether the $1/MMBtu differential for the Valmy plant is related to transportation costs is entirely irrelevant to the Company's options for Bridger Coal. The actual facts cannot be misconstrued. Black Butte has a rail loadout facility; Bridger Coal does not. Valmy has a rail unloading facility; Dave Johnston is the only Company operated plant, other than Jim Bridger, with a rail unloading facility. Valmy can consume Black Butte coal without any coal quality challenges; the Company-operated plants cannot. The Company would incur contract liquidated damages associated with taking Bridger coal to its coal plants; at this time Valmy would not.

Q. On page 14 of his direct testimony, Mr. Evans suggests that the Company has not seriously considered the international market for excess Bridger coal. Please comment.

A. Mr. Evans does not specify which export terminals or international markets the Company can access. Historically, and due to its coking properties, metallurgical coal has constituted the majority of the United States exports rather than steam coal like Bridger coal. With the demise of the LAXT (Los Angeles) coal terminal in 2003 there ceased to be a domestic outlet in the western United States for coal. Almost all of the steam exports today are shipped through terminal facilities in

Houston, Louisiana, Virginia and Maryland. Transportation rates to these eastern and gulf coal terminals would be prohibitive for Bridger Coal production. Furthermore, even if there were a rail loadout facility in place at Bridger Coal mine, both the cost structure of Bridger Coal coupled with its lower heat content does not allow Bridger coal to compete with the much larger Powder River Basin mines and the higher heat content of coal from the Utah and Colorado coal regions.

Q. Are there any proposed domestic coal terminals in the western United States?

A. Yes. There are several proposed coal export terminals in Oregon and Washington. All of these projects are still in the preliminary stage of the permitting process and each project requires permits and approvals from a myriad of regulatory agencies. There is, however, significant public resistance to exporting coal in the Northwest. Both the governors of Oregon and Washington, native tribes and many cities and counties have raised concerns about the potential environmental and health impacts of these projects.

At this time, the Company can only speculate whether any of these terminals will ever be built; the Company cannot make long-term decisions regarding Bridger Coal's surface operation based on speculation of whether these export facilities will ever be constructed.

Western Resource Advocates - Bridger Coal surface mine

Q. On page 14, lines 259-266, of her direct testimony, Ms. Kelly states:

> **[I]t appears to me from information contained within the confidential workpapers that the mine would remain**

competitive from a cost perspective. WRCA Confidential Exhibit (NLK-2) displays the comparative coal costs and coal cost forecasts from 2007 to 2021 measured in $/ton for the Bridger surface mine, the underground mine, and the current third party provider. The exhibit demonstrates that the surface mine will remain cost competitive.

Does this exhibit demonstrate that the surface mine will remain cost competitive?

A. No. First, Ms. Kelly grossly understates Bridger surface and underground costs by failing to include any mine capital for either the Bridger surface or the Bridger underground in her analysis. Comparatively, all of Black Butte's capital expenditures would have been amortized as part of the purchase price; therefore, the Company would not incur any mine capital expenses under a purchase contract with Black Butte.

Q. What is the magnitude of the capital expenditures for the Bridger surface and underground mines that Ms. Kelly omitted?

A. Mr. Link's testimony provides the capital expenditures, on a nominal basis in Confidential Exhibit RMP (RTL-2R). Updated mine capital expenditures over the period 2013 through 2030 average $26 million per year in the 4-unit operation scenario and $19 million per year in the 2-unit operation scenario.

Q. Are there additional problems with Ms. Kelly's conclusion?

A. Yes, Ms. Kelly ignores the impact of coal production volumes on costs. For instance, WRCA Confidential Exhibit (NLK-2) depicts Bridger surface coal costs dramatically decreasing in 2015 and Black Butte costs significantly increasing at the same time. This sudden shift in Bridger Coal and Black Butte costs is not coincidental.

Q. Please explain.

A. The Company's long-term coal supply agreement with Black Butte extends through 2014 with a provision for a limited amount of carryover tonnage into 2015. The decrease in costs for the Bridger surface mine coincide with Bridger Coal's ramping up surface production. With an increase in Bridger's surface production the Company's requirements for coal purchases from Black Butte dramatically decrease. The shift in the Black Butte price reflects a projection of the impact on Black Butte costs of reduced coal production.

Q. Can you identify coal deliveries from the Bridger surface mine and Black Butte in the original filing during this period?

A. The table below reflects the Company's tonnage from the original filing.

	Annual Tonnage	
Year	Bridger Surface	Black Butte
2012	[redacted]	
2013		
2014		
2015		
2016		
2017		
2018		
2019		
2020		
2021		

Q. Do you have any other thoughts about Ms. Kelly's exhibit?

A. Yes. Besides Ms. Kelly's failure to address mine capital, WRCA Confidential Exhibit (NLK-2) is illustrative of how reduced coal production can impact Bridger surface mine's costs. The years with the highest cash mine operating costs, 2013 – 2014, coincide with the years with the lowest production. Long-

term operation of the Bridger surface mine under a Jim Bridger two-unit operation would result in excessive costs of the surface mine and increased costs and risks for the underground mine.

Summary

Q. Please summarize your testimony.

A. The updated coal costs and assumptions reflect the Company's most recent coal price projections of mine operating costs and capital costs for the captive mines as well as forward market and transportation prices. Cash operating costs have been revised to reflect updated final reclamation expenditures. Finally, these updated costs have been incorporated into the rebuttal testimony of Mr. Link.

Q. Does this conclude your testimony?

A. Yes, it does.