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Wyoming's Amended Proposed Findings of Fact Volume IV

Attorney General, State of Wyoming

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BIG HORN ADJUDICATION

WYOMING'S AMENDED PROPOSED MASTER'S REPORT
CONCERNING WATER RIGHTS FOR THE
WIND RIVER INDIAN RESERVATION
1982

VOLUME IV

Amended Proposed Findings of Fact
(Series 27 through 47)

FILED _____

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case # 4993

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IN THE DISTRICT COURT OF THE
FIFTH JUDICIAL DISTRICT
STATE OF WYOMING

IN RE: THE GENERAL ADJUDICATION)
OF ALL RIGHTS TO USE WATER IN)
THE BIG HORN RIVER SYSTEM AND)
ALL OTHER SOURCES, STATE OF)
WYOMING)

CIVIL NO. 4993

REPORT OF THE SPECIAL MASTER CONCERNING THE
RESERVED WATER RIGHT CLAIMS BY AND ON BEHALF OF THE
TRIBES OF THE WIND RIVER INDIAN RESERVATION, WYOMING

VOLUME 4

This volume contains Wyoming's Amended Proposed Findings of Fact, sections 27-1 through 47-1, inclusive, as more fully described on p. ii of the Table of Contents immediately following.

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Concerning
Water Supply and Availability

27-1 Water is an essential element of "PIA"

The Court finds that, in classifying land as practicably irrigable, there must be a showing that the lands possess a reliable source of irrigation water. The Court concludes that a determination of water availability is essential to establishing the existence of practicably irrigable acres.

27-1 See Findings of Fact 15-24 through 15-26, supra.

27-2 United States' Experts

Mr. Robert Toedter, Mr. Michael Keene and Mr. Ronald Billstein testified for the United States with respect to the availability of water to meet all the claims made by the United States on behalf of the Tribes. Mr. Toedter was admitted as an expert in agricultural engineering specializing in drainage although he lacked experience in performing depletion analyses. Mr. Keene was admitted as an expert in natural flows although this was the first natural flow analysis he had completed. Mr. Billstein was admitted as a water resources planner, relying upon inputs and assumptions of other experts for the United States in performing system operation studies and water budget analyses.

27-2 See tr. 6909-7736; tr. 3729-3732; tr. 7733-7734 and tr. 7031-7033 regarding Mr. Toedter's expertise and tr. 7053-7055 concerning Mr. Keene's qualifications; tr. 7214. Mr. Toedter performed a depletion analysis, the results of which served as input for the virgin flow analysis carried out by Mr. Keene, the results of which served as input into the Systems Operation Study directed by Mr. Billstein. Mr. Toedter also prepared a return flow study with Mr. Billstein which was also included in the Systems Operation Study. Mr. Keene's final natural flow study results were also in turn supplied to Mr. Billstein for inclusion into the Systems Operation Study performed under his direction.

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27-3 United States admits insufficient water to satisfy its claims

Based on the systems operations study testified to by Mr. Billstein with support information from Mr. Stetson, Dr. Mesghinna, Mr. Toedter, and Mr. Keene, the United States admitted that there is not enough water available, arising from the watersheds within and upstream of the Wind River Indian Reservation, to meet all or portions of the claims of the United States on behalf of the Tribes, given an 1868 priority date for all claims, unless numerous agricultural claims have significantly increased operation and irrigation efficiencies.

27-3 Prior to the testimony of Mr. Toedter, Mr. Keene and Mr. Billstein, Mr. Clear stated that the testimony of these three witnesses would show that there is sufficient water on the Wind River Indian Reservation to satisfy the claims made by the United States on behalf of the Indians. (Tr. 6909). Despite Mr. Clear's optimism and United States' advocacy on behalf of the Tribes, the testimony of Mr. Billstein showed that quite the contrary was true. Mr. Billstein admitted that there were numerous claims that would in fact be water-short (Tr. 7277-7278). Although admitting these shortages, Mr. Billstein concluded that these shortages could be easily overcome simply by increasing (and sometimes doubling) the operation, maintenance and irrigation efficiencies associated with the agricultural claims, a concept Mr. Billstein refers to as "manageable shortage" (Tr. 7277-7283, 7303-7304, 7320-7325).

In essence, the United States adjusts its efficiencies as required depending on the issue. However, even the concept of manageable shortage doesn't eliminate the water availability problem or conflicts associated with the non-agricultural claims admitted to by Mr. Billstein (Tr. 7390-7398).

27-4 Tribes' Experts

Mr. Keith Higginson and Mr. Ron Bliesner testified for the Tribes with respect to the availability of water to meet the Tribes' additional claims, i.e., those made in addition to those submitted by the United States, for the irrigation of Indian fee lands and for the two additional future irrigation projects. Mr. Higginson was admitted as an expert in water resources -engineering although his experience over the past 25 years has been largely administrative and he has no demonstrated detailed expertise in water supply and hydrology analyses. Mr. Bliesner was admitted as an expert in irrigation engineering and has no demonstrated professional experience in water supply, depletions, economic feasibility or river system operations studies or analyses.

27-4 Tr. 8084-8085, 8090-8093 (Higginson); tr. 8386-8416 (Bliesner); see tr. 8044-8055 concerning Mr. Higginson's credentials and tr. 8251-8260 regarding Mr. Bliesner's qualifications. Mr. Higginson's water supply study dealt with Indian-owned fee land on the Little Wind River and Owl Creek areas only and included no independent water supply analysis other than a review of data, results and analyses testified to by Mr. Billstein for the United States (Tr. 8090-8093). Mr. Bliesner's study included only a review and modification the HEC-3 Big Wind System Study, originally prepared and testified to by Mr. Billstein for the United States, and dealt with the two future projects and the Indian-owned fee land located in the Big Wind System Study alone. (Tr. 8386, 8408-8415).

27-5 Tribes admit insufficient water available to satisfy their claims

Based on the water availability reviews testified to by Mr. Higginson and Mr. Bliesner, the Tribes admitted that there is not enough water available on the Wind River Indian Reservation to meet all the United States' claims and the additional Tribal claims unless many agricultural users significantly increase their operation and irrigation efficiencies to overcome shortages.

27-5 Tr. 8403-8408, 8412-8416; Tr. 8090-8093. Similar to Mr. Billstein's testimony (see Finding of Fact 27-3), Mr. Bliesner and Mr. Higginson admitted that there were numerous claims that would be water-short at times. In fact, as the result of these additional Tribal claims the number and magnitude of the water shortages increased, in some areas quite substantially. Despite these admissions, both Mr. Bliesner and Mr. Higginson theoretically overcame the problem simply by adopting the concept of "manageable shortage" created by Mr. Billstein and increased the irrigation efficiencies in the locations and amounts necessary to eliminate the shortages and meet the full duty of water claimed. (Tr. 8092-8093; tr. 8400-8405; 8408-8413; tr. 8543-8545). Mr. Bliesner suggested that management and irrigation efficiency increases can make up a 30% shortfall in water supply but was unable to provide information on additional costs entailed in achieving the increased efficiencies. (Tr. 8543-8545).

27-6 Wyoming's Experts

Mr. Leonard Rice, Mr. Gordon Fassett and Mr. George Christopulos testified for the State of Wyoming with respect to the availability of water to meet the claims of the United States and the Tribes for the Indians of the Wind River Indian Reservation. Mr. Rice was admitted as an expert in water resources engineering and is a registered engineer in the State of Wyoming, as well as other states, with a demonstrated expertise in the development and use of hydraulic and hydrologic models. Mr. Fassett was admitted as an expert in water resources engineering and is a registered engineer in the State of Wyoming, as well as others, with a demonstrated expertise in water supply studies and river basin system operations analyses. Mr. Christopulos is the State Engineer for Wyoming and the chief administrator of water rights in the State of Wyoming. Mr. Christopulos has personal knowledge and experience regarding the State of Wyoming's water rights permit and adjudication proceedings as well as responsibility for detailed day-to-day administration and operation of water rights throughout the State.

27-6 See tr. 9360-9365 regarding Mr. Rice's qualifications and tr. 9536-9541 concerning Mr. Fassett's expertise; Tr. 9360 through 10518. Mr. Christopoulos has testified before the Special Master in this litigation on many occasions beginning on November 26, 1979 (Tr., Hearings of November 26 and 27, 1979, p. 114), and has testified as the State Engineer, the highest water administrator in the State of Wyoming, regarding water rights administration and operation from his personal knowledge and over 26 years of experience with the Wyoming State Engineer's Office.

27-7 Wyoming agrees insufficient water available to satisfy federal and Tribal claims

Based on the comprehensive integrated river systems operation study prepared and utilized for the Wind River Indian Reservation, as well as the remaining portions of Water Division No. 3 testified to by Mr. Rice, Mr. Fassett and Mr. Christopulos, the State of Wyoming concluded that there is not nearly enough water available arising from the watersheds on and upstream of the Wind River Indian Reservation to satisfy the claims of the United States and the Tribes, operating under the assumption of the claimed priority date of July 3, 1868 asserted by the United States and Tribes for all claims.

27-7 Wyo. Exhs. WRIR-MF 16A, 16B, 17A, 17B, 18A, 18B, 19A, 19B, 20A, 20B, 21A and 21B all list the name, type, location and the amount of various United States' and Tribal claims that cannot be satisfied assuming the United States and the Tribes are decreed and exercise all water rights they claim with an 1868 priority date. The claim name selected for identification in the model study shown in the above exhibits can be cross-referenced with exhibit MF-15 for a description of the specific claim, as well as exhibits MF-14-1 through MF-14-44 and overlay maps attached thereto, for the location of the specific claim not receiving water. Wyoming's conclusions represented by these exhibits is supported by the conclusions testified to by the experts for the United States and Tribes concerning the lack of a reliable water supply for all claims. See Findings of Fact 27-3 and 27-5.

27-8 Deficiencies in United States' water supply analysis

The Court finds that it is unable to accept the conclusions of the United States with respect to the availability of water to satisfy the claims of the United States for the Wind River Indian Reservation for the following reasons:

1) System Operation Study Deficiencies

(a) In many cases, the return flows from agricultural diversions were identified and accounted for upstream of the diversion to which they were associated.

(b) In many cases the diversions and return flow control points utilized by the HEC-3 model were selected locationally for simplicity, convenience and ease of presentation, and admittedly may not have coincided with the actual field conditions. Mr. Billstein and Mr. Toedter dismissed this problem arguing that for their studies, precision wasn't necessary to show water availability and it in fact did not add to the accuracy to their results. However, since a more detailed approach was never tested, this conclusion is unsubstantiated.

- (c) The United States' experts utilized, with minor modifications, the existing HEC-3 model developed by Corps of Engineers for reservoir operation studies and not for water availability analyses for litigation. This model operates on a sequential stepwise basis, accounting for diversion, storage and return flows from upstream to downstream without regard to a priority system. The HEC-3 model does not have the capability and was not adopted to analyze water availability under the priority date system as water is administered in Wyoming.
- (d) In utilizing the HEC-3 program, Mr. Billstein assumed equilibrium already exists in the return flow patterns, locations, timing and amounts even though he admitted it would require many years to establish equilibrium on newly irrigated lands.
- (e) By failing to include in his model other water rights in the basin, Mr. Billstein was unable to reflect in his conclusions the effect on return flow patterns, location, timing and amounts resulting from the drying up of presently irrigated land.

- (f) Mr. Billstein included in his study lands acquired in 1941, 1946 and 1948 which now comprise part of Arapahoe Ranch but assigned them an 1868 priority date.
- (g) Mr. Billstein failed to perform an integrated river system and water availability analysis, i.e., he failed to include the Tribes' additional separate claims for Indian fee land and future projects, even though they also claimed an 1868 priority date, he performed separate studies for the Big Wind Study Area, the Little Wind Study area, the Popo-Agie/Little Wind/Big Horn River Area, the Owl Creek Watershed and the minor tributaries and made no attempt to tie these areas together in a single comprehensive study to analyze the interaction of all river operations in the basin, and he failed to include any non-Indian water rights whatsoever. Mr. Billstein's study addresses only a narrow single purpose review of claims for lands held in trust for the Indians, as if no other lands or water uses existed.

In addition, the computerized HEC-3 studies as well as the water budget studies testified to by Mr. Billstein failed to account for the non-agricultural water claims such as mineral development, livestock, and municipal, domestic and commercial uses. These were reviewed by hand on a case-by-case basis utilizing the results of the agricultural water availability studies, without the benefit of additional computer runs.

(h) The HEC-3 studies were not verified by Mr. Billstein or any other expert for the United States. The Court finds that no evidence was presented that the mathematical computations carried out by the modified HEC-3 computer program were being completed accurately. In addition, no verification was undertaken to determine whether the results predicted were related to real world conditions existing on or near the Wind River Indian Reservation.

2) The Court finds the following deficiencies with input information utilized by Mr. Billstein in the water availability and system operation studies:

- (a) In performing his systems operation study, Mr. Billstein required input from Mr. Stetson and Dr. Mesghinna on water demands, Mr. Toedter on depletions and return flow locations and distribution and Mr. Keene on natural flows. As previously indicated in the Findings of Fact concerning engineering, the Court has elected to rely on the water demand figures testified to by Mr. Bishop. Mr. Billstein did not make alternative runs with Mr. Bishop's water demand figures.
- (b) Only agricultural depletions and evaporation depletions from Bull Lake were considered in extrapolating the virgin flows and therefore flow figures in various locations are probably inflated above their actual values.
- (c) Mr. Billstein relied upon and utilized a single temporal return flow distribution for all agricultural claimed diversions throughout the Wind River Indian Reservation, developed by Mr. Toedter. One of the justifications for the use of a single pattern was that the system is in equilibrium (see Finding of Fact 27-8(1)(d)) and

that the water demands are constant from year to year, a fact admitted by Mr. Billstein not to occur in the real world. The results of Mr. Billstein's studies indicated that water shortages did occur and that consequently the amounts of water demand and return flow change from year to year, thus conflicting with the United States' position in support of a single temporal return flow distribution.

(d) The water availability studies specifically exclude and operate as if Boysen Reservoir, Anchor Reservoir and Bull Lake did not exist. Not only are the operations of these facilities excluded but no adjustments for evaporation losses have been considered in the river system operation study in relation to water supply for various agricultural and non-agricultural claims by the United States.

(e) The Court finds that Mr. Toedter in part made use of and took measurements from the same set of aerial photography utilized by Mr. Billstein in his analysis of unadjudicated in-use lands on the Wind River Indian Reservation, which had

scale-rectification problems, rendering portions of the depletion study results in error. The Court concludes that any changes or discrepancies in the depletions study would likewise introduce error into Mr. Keene's natural flow studies and Mr. Billstein's System Operations Study.

3) The Court further finds the following general deficiencies in portions of the United States' water availability studies, in support of general Finding of Fact 28-8.

(a) No return flow study was completed by Mr. Toedter for any areas outside of the Big Wind and Little Wind Study Boundaries analyzed by the HEC-3 model. These excluded areas include: Owl Creek basin, the minor tributary areas and the Popo-Agie/Little Wind/Big Horn Study area.

(b) Most of segments of streams claimed for fishery purposes were analyzed by Mr. Billstein, under conditions that did not account for the municipal and industrial diversions prior to reviewing the results for water availability regarding the fishery flows.

(c) No return flows were accounted for from the non-agricultural claims.

- 4) Despite all the questionable assumptions and omissions of important data, the model still showed many areas where the United States' claims completely dried up the river. Mr. Billstein's solution here was to simply assume the people in these areas could increase their efficiencies up to 50% even though the United States' own engineers determined the maximum efficiencies to be between 16% and 35%.

27-8 The reasons supporting this Finding of Fact follow:

- 1(a) In designing the system operations model, Mr. Billstein in consultation with Mr. Toedter, in many cases, had the return flows returning upstream of the diversions to which they were associated, (Tr. 7725-7729), a physical impossibility under gravity irrigation conditions. (Tr. 7725-7729; tr. 7451-7457).
- (b) The consideration given to selection of control modes was a joint effort by Mr. Billstein and Mr. Toedter based on the needs of the simplified accounting procedures utilized in the HEC-3 model study areas. Upon questioning, both Mr. Billstein and Mr. Toedter indicated several times that precise locational accounting was not necessary for their work. (Tr. 7451-7457; tr. 7507-7508; tr. 7517; tr. 7693-7695; tr. 7725-7729).
- (c) Mr. Billstein used the HEC-3 model developed by the Corps of Engineers. This model relies on a sequential program going upstream to downstream and is unable to analyze water use in a priority system (Tr. 7436-7437). Mr. Billstein dismisses this problem since he assumes an 1868 priority date for all

the United States' claims. Unfortunately, Mr. Billstein's system operation study is only able to simulate river operations under a single priority date. This is an unrealistic assumption based on the complex ownership considerations on the Wind River Indian Reservation. (Tr. 7462-7468; tr. 7290).

- (d) Mr. Billstein also stated in addition to assuming equilibrium conditions, that if no return flows from the future project lands were accounted for, the results of his analysis would be the same, indicating the lack of realism in the model's operation, particularly as related to non-agricultural claims. (Tr. 7526-7527).
- (e) By failing to include in his model all other asserted water rights in the basin, Mr. Billstein was unable to reflect in his conclusions the effect on return flow patterns, location, timing and amounts resulting from the drying up of presently irrigated non-Indian land (Tr. 7532-7539).
- (f) Mr. Billstein included in his study lands acquired in 1941, 1946 and 1948 which now comprise part of Arapahoe Ranch but still gave them an 1868 priority date, again because he had no other way of analyzing

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their water availability under a priority system, should he so desire. (Tr. 7600-7605).

- (g) Billstein failed to perform an integrated analysis, i.e., he did not include the Tribes' additional separate claims (Tr. 7612-7613), he did separate studies for the Big Wind Study Area, the Little Wind Study area, the Popo Agie/Little Wind/Big Horn Study Area, the Owl Creek Watershed and the minor tributaries and made no attempt to tie these areas and all of the claims together to evaluate intricate river operations and the interaction of all water rights and claims. (Tr. 7228; Tr. 7461). He also failed to include any non-Indian water rights (Tr. 7539), as well as an analysis of the fishery claims of the United States. (Tr. 7393-7394; Tr. 7635-7636).
- (h) Mr. Billstein gave no indication that he even attempted to verify the workings of the model or the results in any way. In light of all the previously discussed problems, this is a fatal omission.
- 2(a) See Finding of Fact 27-2 for a description of relationship of experts in support of Mr. Billstein's work as well as Tr. 7215 for additional input information provided by other experts testifying for the United States.

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- (b) Mr. Keene, during his natural flow studies, only considered historical agricultural depletions and incremental depletions from Bull Lake Enlargement in extrapolating the natural flows and therefore his flow figures in various locations are probably inflated above those actual values. (Tr. 6920-6921; 7067).
- (c) Mr. Billstein utilized a single return flow distribution provided to him by Mr. Toedter for all diversions in each of his HEC-3 study areas, even though the irrigation practices, drainage characteristics, soils and geology differ across the Wind River Indian Reservation. (Tr. 7503). See also Tr. 7519-7520; Tr. 7723-7724 for further discussion regarding return flow distribution and the associated diversion demands.
- (d) The exclusion and operation of certain major water storage facilities are discussed for Boysen Reservoir (Tr. 7531) and for Anchor Reservoir and Bull Lake (Tr. 7570-7573).
- (e) Tr. 6935. Mr. Toedter indicated he utilized portions of the set of aerial photographs taken of the Wind River Indian Reservation and utilized by Mr. Billstein for his testimony. (Tr. 7500).

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- 3(a) Mr. Toedter discussed in detail those areas of the reservation where he did and did not perform a return flow analysis in support of Mr. Billstein's System Operations Study work. (Tr. 7686-7692).
- (b) See Tr. 7393-7394 for Mr. Billstein's discussion regarding the fishery study and his review of available water only after adjusting for agricultural claims.
- (c) Mr. Billstein testified that for his analysis, the accounting of return flows from the non-agricultural claims was not considered upon advice of the other experts working for the United States (Tr. 7596-7598).
- 4) Despite all the questionable assumptions and omission of important data, the HEC-3 model still showed many areas where the United States' claims completely dried up the river. Mr. Billstein's solution here was to simply assume the people in these areas could increase their efficiencies up to 50% even though the United States' own engineers determined the maximum efficiencies for its new claims to be between 16% and 35%. (Tr. 7277-7283, 7303-7304, 7320-7325).

To quantify its agricultural claims for irrigation water, the United States relies on very low efficiencies thus increasing the size of the claims. But to determine water supply, the United States relies on high efficiencies to ensure that its claims qualify as having a reasonable and reliable source of water and thus meet the previously agreed upon water availability requirement of practicably irrigable acreage. The United States simply can't have it both ways.

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27-9 United States' claims not considered by federal water supply analysis

The Court finds that no evidence was presented by the United States concerning water availability, in support of their claims listed below:

- (1) Maintenance of reservoir levels. Mr. Billstein testified that the results of his HEC-3 studies indicated varying reservoir levels for Washakie Reservoir and Ray Lake which is in direct conflict with the United States' Statement of Claims.
- (2) Maintenance of natural lake levels. No testimony was heard with regard to water availability to maintain the natural level of all lakes on the Wind River Indian Reservation.
- (3) Aesthetic and Wildlife instream flow claims. No testimony was heard with regard to water availability to maintain the requested aesthetic and wildlife needs on the Wind River Indian Reservation.
- (4) Livestock. No testimony was heard with regard to water availability to fill stock reservoirs from any source of water on the Wind River Indian Reservation.

27-9

- (1) Mr. Billstein testified that he did not build in an operational parameter to keep the level of Washakie Reservoir and Ray Lake at capacity (Tr. 7562).
- (2) Mr. Billstein also testified that he did not catalog all of the natural lakes on the Wind River Indian Reservation nor establish whether the water levels in each lake was maintained from the available waters (Tr. 7562).
- (3) No evidence regarding water availability to meet the instream flow requirements of the aesthetic and wildlife claims were submitted by the United States.
- (4) No evidence regarding water availability to meet the livestock water requirements to sustain the estimated numbers of stock and fill stock reservoirs was presented to the court. No evidence of the location and specific source of water for each diversion and storage pond was provided.

27-10 Deficiencies in Tribes' water supply analysis

The Court finds that it is unable to accept the conclusions of the Tribes with respect to the availability of water to satisfy all the additional separate claims of the Tribes for the Wind River Indian Reservation.

- (1) Both Mr. Higginson and Mr. Bliesner relied on Mr. Billstein's systems operation study to reach their conclusions on water availability. For the reasons stated in Finding of Fact 27-8, this is an unacceptable source upon which to rely.
- (2) Mr. Bliesner failed to consider non-Indian water rights and even excluded the United States' and Tribes' fisheries and aesthetics claims in reaching his conclusions on water availability. Despite this, Mr. Bliesner's results indicated increased shortages with the addition of the separate tribal claims but again Mr. Bliesner concluded that these shortages were manageable.
- (3) Mr. Bliesner made specific changes in the control point accounting locations and procedures utilized by Mr. Billstein in his HEC-3 studies, to model the physical field situation more realistically.

- (4) Mr. Bliesner discussed the fact that he did not specifically tie down each parcel of land to certain ditches because they were not secure in the location of the serving ditch. He consequently selected regional control points in Mr. Billstein's study that were near the servicing land for modeling purposes.
- (5) Neither Mr. Higginson nor Mr. Bliesner addressed the water availability for the Indian-owned fee lands that are located outside of Mr. Billstein's Big Wind and Little Wind Study Areas and his water budget analysis for Owl Creek. This would specifically exclude any parcels on the minor tributaries north of the Big Wind River Study Area.
- (6) Neither Mr. Higginson nor Mr. Bleisner or any other witness testifying on the behalf of the Tribes addressed the water availability to meet any of the contingency claims set forth by the Tribes. No evidence regarding specific diversions or impoundments, their locations, proposed uses or the sources of water that may be available to meet the contingency claims was provided.

27-10

- (1) Both Mr. Higginson and Mr. Bliesner relied on Mr. Billstein's systems operation study to reach their conclusions on water availability (Tr. 8090-8093; Tr. 8386-8390). For the reasons stated in Finding of Fact 27-8, this is an unacceptable source upon which to rely.
- (2) Mr. Bliesner failed to consider non-Indian water rights. In addition, Mr. Bliesner used Mr. Billstein's HEC-3 computer output which had no adjustments for United States' fisheries and aesthetics claims. See Finding of Fact 27-8. (Tr. 8422; 8541, 8556-8557). Despite this, Mr. Bliesner's results indicated increased shortages with the addition of the separate tribal claims but again Mr. Bliesner concluded that these shortages were manageable. (Tr. 8412-16; Tr. 8543-8544). The procedure followed by Mr. Bliesner in his water supply study may well be a reflection of his lack of experience in this highly specialized area (Tr. 8386-8388; Tr. 8556-8557).
- (3) Mr. Bliesner's changes included the use of a different equation than that of Mr. Billstein for esti-

mating recoverable return flows (Tr. 8393-8397) and an assumption in Mr. Billstein's study of how Dinwoody canal operates (Tr. 8405-8408) to reflect accurately the real world conditions in the field. Additional control points as seen in Tribes' Exhibit 14 were also added, indicating a deficiency in the Billstein System Operation work.

- (4) Parcels of land were not tied down to certain ditches (Tr. 8409-8410), because these were unknown.
- (5) No evidence was presented of a water availability study performed on Indian-owned fee parcels on the minor tributaries to the Wind River north of the Big Wind River Study area. Mr. Higginson studied the Little Wind and Owl Creek areas only. (Tr. 8089-8092). Mr. Bliesner studied the minor tributaries to the Wind River south of the Big Wind River Study area and future projects (Tr. 8403-8410).
- (6) No evidence was presented to the Court regarding specific or general water availability to meet any portion of the so-called "contingency" claims submitted by the Tribes. In fact, Mr. Rogers actually criticized Mr. Fassett's analysis of water availability to meet the contingency claims, which was unusual

since the Tribes made no attempt to show it themselves and no specific evidence regarding this claim exists in the record.

27-11 State's river systems operation model, created for this litigation, is realistic, flexible and accurate

The Court finds that the Wyoming Integrated River Systems Operations Study Model prepared by Mr. Fassett under the general direction of Mr. Rice utilizing the water-rights administration operations practiced by Mr. Christopulos' office, possesses the reliability and flexibility necessary to accurately predict water availability anywhere within the Wind River Indian Reservation and the remaining portions of the Big Horn River drainage under any set of variable acreages, water requirements, return flow characteristics, and priority dates and thus relies on the evidence presented through Mr. Fassett which resulted from the operation of the model. The Court concludes and bases the foregoing general finding on the following detailed findings:

- (1) The Wyoming Model was developed specifically for this litigation rather than being a packaged program, and represents the state of the art for analyzing comprehensive river basin operations under the prior appropriation doctrine. The operating logic and model development were prepared by Mr. Rice and Mr. Fassett, with computer programming assistance from an appropriate, qualified computer programmer.

- (2) The Wyoming Model covers the entire Big Horn River Basin rather than being limited to certain portions of the Wind River Indian Reservation, as presented by the United States and Tribes;
- (3) The Wyoming Model includes the operation of a majority of the state-awarded rights within the Basin as well as all of the federal and Indian claims for surface water on the reservation, including all agricultural, non-agricultural, non-consumptive and contingency claims, in a single integrated river basin study. This includes all historic and future irrigation claims as well as those for fisheries, municipal, industrial, aesthetics and wildlife presented, testified to or claimed by the United States and Tribes, since the Tribes' claims incorporated the United States' claims and made certain additions. This includes an extensive network of minor streams and major rivers throughout the Wind River Indian Reservation, as required to actually depict the diversion amounts, stream flows, water right location and analyze the site specific interaction of all rights and claims on the stream from which their water is supplied;

- (4) The Wyoming model operates under the prior appropriations doctrine as administered in Wyoming. A set of water rights administrative assumptions were utilized by the model. Mr. Christopoulos, the top administrative official for water rights in Wyoming, testified that those assumptions accurately describe what is done by water officials in Water Division No. 3. As a result, the model operates basin-wide in order of priority regardless of location and is not limited to working in an upstream-to-downstream direction only. The results reflect the intricate complications and interactions of water rights be they diversions, storage facilities, contract agreements, exchanges, transfers or non-consumptive rights with respect to complicated river operations such as the rebounding call doctrine;
- (5) The Wyoming Model includes a number of temporal return flow distribution schedules, the schedule utilized by the model for any one location being dependent on certain site specific key factors associated with each particular diversion and watershed under operation. These schedules include not only a series of varying distributions for the agricultural

diversions but for municipal and industrial return flow patterns as well;

- (6) The Wyoming model allows return flows associated with each diversion to enter at numerous points along any stream as the conditions may exist in the field rather than one regional specified point for many diversions;
- (7) The Wyoming model can operate on a monthly and annual basis under any stream flow condition, be it long term average, dry or a specific study period of actual records or statistically derived stream flows used for comparative studies,
- (8) The Wyoming model relies on diversion schedules developed with the use of hydrologic concepts, available records and through consultation with residents and water commissioners in Water Division 3;
- (9) The Wyoming model utilizes virgin flows determined by Mr. Fassett which in fact had an overall variation from the United States' virgin flow analysis of only (+) to (-) 4% for the entire Wind River drainage basin.
- (10) The Wyoming model was developed and structured in such a way that it can operate under virtually any

series of assumptions with respect to diversion or demand schedules, return flow schedules, priority dates, exercise of the claims in combination or separately, administration or other factors.

- (11) The Wyoming model operates not only hundreds of small stock and irrigation reservoirs but all of the major storage facilities on the Wind River Indian Reservation and in the entire Big Horn River drainage. These operations incorporate the administrative rules testified to by Mr. Christopulos, and include detailed operations and accounting of inflows, outflows, releases for supplemental water, power generation and evaporation as required at each specific facility. Some of the facilities modeled included not only Washakie Reservoir and Ray Lake claimed by the United States, but Bull Lake, Boysen Reservoir, Buffalo Bill Reservoir, and Yellowtail Reservoir to name a few.
- (12) Typical computer output information resulting from the Wyoming model identifies not only that shortages exist but a detailed listing on a monthly basis of what rights or claims are curtailed from diversions, their location, priority date, amounts required and

obtained and the reason for the shortage, be it water availability or a senior appropriator calling for its legal right to water.

- (13) Finally, the accuracy of the "Fassett" model, as it came to be known during trial, was tested by two different forms of verification. First, during the development phases several sample sets of data were hand-calculated and then run through the model to insure that the model was both mathematically and procedurally correct. The results of these calculations were identical, indicating that the model operated correctly. Second, sample runs were made through the model under current water rights and administrative conditions and the river flows predicted at various points were compared to actual United States Geological Survey gauged records at those same points on the streams throughout the basin and Wind River Indian Reservation. The simulated flows computed in the model varied from the actual measured flows anywhere from less than 1% up to 6%. This indicates a very reliable simulation of real world conditions, upon which proposed future demands and conditions could be placed for accurate analysis

of water availability for all or any combination of individual specific rights and claims in the Big Horn River drainage.

27-11 The Wyoming Integrated River Systems Operation Model: (1) was developed specifically for this case rather than being a packaged program; (2) covers the entire Big Horn River Basin rather than being limited to certain portions of the Wind River Indian Reservation; (3) includes the operation of the majority of surface water claims to water within the Basin not just the federal and Indian claims for the reservation; (4) operates under the prior appropriation system; (5) includes a number of return flow schedules, the schedule selected by Mr. Fassett for any one location being dependent on certain site specific key factors; (6) allows return flows to enter at numerous points rather than one specified point; (7) operates basin-wide and is not limited to working in an upstream to downstream direction only and did operate based on a statistically derived dry stream flow period, a long term average stream flow period, the 1970 to 1979 period or, could be used for any other study period selected; (8) relies on diversion schedules developed in part through extensive consultation with residents and water commissioners in Water Division 3, as well as existing diversion records and consumptive use computations; (9) utilizes virgin flows determined by Mr. Fassett which in fact have an overall variation from

Mr. Keene's virgin flow analysis of only (+) to (-) 4% and (10) is constructed in such a way that it can make virtually any series of assumptions with respect to priority dates, exercise of the claims, administration, water requirements, acreage or other factors. (Tr. 9365-9378; 9405-9406; tr. 9566-9567; tr. 10,024).

In reference to finding 27-11(11), Mr. Fassett used many administrative assumptions in setting up the Wyoming Integrated River Systems Operation Study model. These assumptions are listed in Wyoming Exhibit WRIR MC-2 and Mr. Christopulos, the Wyoming State Engineer, testified that they accurately describe what is done by administrative officials in Water Division No. 3 (Tr. 9702-9705).

In reference to finding 27-11(12), an example of the flexible detailed analysis and information resulting from the Wyoming River Basin Model was demonstrated upon cross-examination of Mr. Fassett regarding a site-specific right that was called out by the imposition of the United States' and Tribes' claims which resulted in an explanation for the shortage its location and amounts of curtailment caused. (Tr. 10375-10411).

Finally, the accuracy of the "Fassett" model was tested by two different forms of verification. First,

during the model development phases, several sample sets of data were first hand-calculated and then operated by the model to insure that the model correctly completed the mathematics and procedures as designed. The results of the two tests were the same. Second, sample runs were made with the model utilizing current development conditions and the river flows computed at various points were compared to actual United States Geological Survey gauged records at those points. The resultant flows varied from the actual flows anywhere from less than 1% up to 6%. This indicates a very reliable prediction of real life conditions. (Tr. 9568-9569; tr. 9442-9443; tr. 9619-9621).

The Master on several occasions realized the analysis potential afforded by the use of the Wyoming model. The flexibility to analyze any combination of claimed amounts and priority dates is extremely important when dealing with massive stream networks, and millions of acre-feet of water in a realistic, intricate method reflecting actual operating history. (Tr. 15176-15179; tr. 15183-15184; tr. 9563-9567).

27-12 Many lands in United States' and Tribes' Claims were
water short and thus not practicably irrigable

The Court finds that if the totality of the United States' and the Tribes' claims were decreed with an 1868 priority date, a substantial number of those agricultural claims would be significantly water-short and thus not practicably irrigable acreage. In addition, the Court finds that numerous conflicts exist for available water supplies on the Wind River Indian Reservation between the claims of the United States and those submitted by the Tribes. The Court further concludes that competition for available water to meet the claims of the United States and Tribes also results in conflicts and shortages between the diversion, storage and instream flow claims, as well as between agricultural and non-agricultural uses on selected creeks throughout the Wind River Indian Reservation.

27-12 Wyo. Exhs. WRIR MF-16A, 16B, 17A, 17B, 18A, 18B, 19A, 19B, 20A, 20B, 21A and 21B all identify the United States' and Tribal claims that would be water-short according to the State's model under varying administrative assumptions and stream flow conditions, assuming an 1868 priority date. The conflicts between the claims for the available supplies are highlighted by comparing the exhibits listed above between the MF-16, MF-17, and MF-18 groups and the MF-19, MF-20 and MF-21 series, where the only administrative change between the model runs was to allow the instream flow claims to take preference over the diversionary claims. (Tr. 9622-9645; tr. 9828-9833). See also Finding of Fact 27-11. Wyo. Exhs. MF-15 and MF-14-1 through MF-14-44 identify the name, location and amounts of the claims under analysis.

27-13 Insufficient water to satisfy United States' and Tribes'
non-irrigation claims

The Court finds that if the totality of the United States' and Tribes' claims were decreed and given an 1868 priority date, a substantial number of the non-agricultural claims (aesthetic and wildlife, fisheries, industrial) would be significantly water-short under varying stream flow conditions.

27-13 Wyo. Exhs. WRIR MF-16A, 16B, 17A, 17B, 18A, 18B, 19A, 19B, 20A, 20B, 21A, and 21B, all illustrate that many portions of the United States' and Tribal claims for non-agricultural water on the Wind River Indian Reservation could be water-short, according to the results of Wyoming's integrated system operations study. (Tr. 9622-9645; tr. 9828-9833). See also Findings of Fact 27-12 and 27-11. Wyo. Exhs. MF-15 and MF-14-1 through MF-14-44 identify the name, location and amounts of the numerous claims under analysis.

27-14 Sufficient water is available to satisfy needs in Wyoming's alternative proposal

The Court finds that the water available to the numerous alternative evaluations of the United States' and Tribes' claims as testified to by experts for the State of Wyoming, is limited in some areas resulting in water shortages to portions of the acreage under analysis. The Court concludes that the evidence, supported with the results of additional Wyoming river system operation study model runs, shows many claims for water are limited by water availability, however, many of the internal conflicts between claims have been minimized.

27-14 Portions of Wyo. Exhs. MF-2001, 2001A, 2001B, 2002, 2002A, 2002B, 2003, 2003A, 2003B, 2004, 2004A and 2004B identify those United States' and Tribes' claims on behalf of the Tribes on the Wind River Indian Reservation as analyzed by Wyoming under varying assumptions and criteria relating to amounts and priority dates that would be water-short under average stream flow conditions. (Tr. 15177-15216). It should be noted that neither the United States nor the Tribes cross-examined with respect to this portion of Mr. Fassett's testimony (Tr. 15221).

Findings of Fact
Relating to
Land Status and Priority Dates

28-1 Priority dates dependent on land status.

The Court, in addition to determining the amounts of water to be assigned to any reserved right for a specific purpose, must also establish a priority date for the reserved right as quantified for each purpose. Priority dates, as well as the very existence of a reserved right in some instances, are dependent on the present status as well as the ownership history of the reservation lands for which a reserved right is claimed.

28-2 Summary finding - Land status and priority dates - Non-irrigation claims.

With respect to the non-irrigation claims asserted by the United States and Tribes, for which the Court has granted no reserved right and, in light of the plethora of land categories (reacquired, restored, private ownership, etc.) through which the claimed streams and rivers pass or over which the claimed areas lie, as well as the innumerable dates associated therewith, the Court declines, at this time, to make any findings with respect to potential priority dates therefor.

28-3 Findings made with regard to all lands claimed as PIA.

Although the Court has elsewhere determined that the reserved right, if it exists, may be associated only with unallotted lands which have been continuously held in trust by the United States, these detailed Findings are made with respect to all those lands for which the Court has found:

1. is irrigable, before the application of an economic analysis, or
2. enjoys the status of "PIA" after the application of an economic analysis using a 7 1/8% discount rate.

The Court has done so in order to facilitate the entry of a decree in accordance with any differing legal conclusions reached by any reviewing court, without the necessity for additional factual hearings and findings of fact.

28-4 Land status categories established by the Court.

Because of the multitude of variations in land status on the reservation, the Court has established the following land status categories set forth below:

<u>Category</u>	<u>Explanation</u>
00	Unallotted trust land which has been in continuous trust since July 3, 1868, for which a reserved right has been granted with a priority date of July 3, 1868.
01	Land which has been in trust and individual Indian ownership continuously since July 3, 1868. This category includes allotted lands but does not include land in the diminished portion of the reservation which has been returned to tribal trust from ownership by individual Indians.
02	Unrestored land in the ceded portion of the Reservation for which no evidence as to ownership has been introduced but which has been claimed to be trust lands by the United States and Tribes.
03	Allotted, unrestored lands in the ceded portion of the Reservation for which a trust patent was issued <u>prior to</u> March 3, 1905.
04	Allotted unrestored lands in the ceded portion of the reservation for which a trust patent was issued on or <u>after</u> March 3, 1905.
05	Unrestored ceded land which remains in non-Indian ownership.
06	Unrestored ceded land which has been reacquired in trust by individual Indians.
07	Unrestored ceded land which was reacquired in trust by the Tribes.
08	Unallotted, unrestored ceded land which has been reacquired in trust by individual Indians.
09	Unallotted, unrestored ceded lands which have been reacquired in trust by the Tribes.

- 10 Land restored by Acts of Congress or Orders of the Secretary of Interior.
- 11 Land claimed by the Tribes to be Indian-owned fee land in the ceded portion for which no evidence to determine current ownership has been introduced.
- 12 Land claimed by the United States and Tribes to be in trust or Indian-owned fee land in the diminished portion for which no evidence to determine ownership history has been introduced.
- 13 Lands in the diminished portion of the Reservation which has been returned to tribal trust from Indian ownership.
- 14 Land in the diminished portion of the Reservation which has been conveyed to non-Indian ownership and remains non-Indian.
- 15 Land in the diminished portion of the Reservation conveyed to non-Indian ownership which has been reacquired in trust by individual Indians.
- 16 Land in the diminished portion of the Reservation conveyed to non-Indian ownership which has been reacquired by the Tribes in trust.

28-5 Broad land types within the land status categories.

Within most of the above land categories, established by the Court, are found many of the broad, general land types of irrigated land for which the parties presented evidence. Seven broad types of land have been utilized by the various parties. These are divided into three types of future land claims and four types of broad historic land claims. Brief descriptions of these land types follows:

a. Future Lands -

These lands have never been irrigated.

1. Future Projects - United States' and Tribes' Claims

These allegedly trust lands are large units of claimed irrigable acres asserted by the United States and/or Tribes, each unit to be served in a common geographical area, generally from one diversion and conveyance system. The land type is referred to as "Future."

2. Type VIII Lands

These allegedly trust lands are relatively small tracts of claimed irrigable land within the boundaries of existing Federal Irrigation Projects on the Reservation. These lands are claimed by the United States. The land type is referred to as "VIII."

3. Indian-Owned Fee "p" Lands

These lands are allegedly "potentially irrigable" acres occurring in specific tracts asserted to be Indian-owned fee. These lands are claimed by the Tribes. The land type is referred to as "Potential" or "p."

b. Historic Lands

These lands fall into four major groups: (1) land alleged to be held in trust, to be currently irrigated, for the most part, and to be the subject of a permit issued by the Wyoming State Engineer; (2) allegedly trust land, claimed to have been previously irrigated but which is now idle; (3) land alleged to be owned by individual Indians and currently irrigated; and (4) allegedly trust land which is the subject of a Certificate of Appropriation issued by the State of Wyoming.

1. Unadjudicated In-Use Lands

These purported trust lands are alleged to be currently irrigated for the most part having a State permit but being without the benefit of an adjudicated state-awarded water right. This broad land type is further subdivided into the narrow irrigated land types used by the United States herein and described in Finding of Fact 28-6.

2. Type VII Lands

These purported trust lands are allegedly irrigable tracts which are claimed to have been previously irrigated but which are now idle.

3. Indian-Owned Fee "I" Lands

These lands are allegedly currently irrigated acres asserted to be Indian-owned fee, as claimed by the Tribes.

4. Adjudicated Lands

These purported trust lands are asserted to be subject to an adjudicated, state-awarded water right and to be wholly or partially under current irrigation, previously irrigated but now idle, or never irrigated, as claimed by the United States. Adjudicated lands can also be described in the narrow irrigated land types "I, II, III, IV, V, or VI," described below.

28-6 Narrow Irrigated Land Types

The United States identified six narrow irrigated land types (I through VI) characterizing the type or extent of irrigation. The United States used these irrigated land types to characterize unadjudicated in-use lands. The State of Wyoming also adopted the types to characterize not only unadjudicated in-use land but also adjudicated lands. The definitions of those irrigated land types can be found in Wyoming Exhibit WRIR HB-8.

28-7 Summary finding - Land status and priority dates -
Irrigable Acres and Practicably Irrigable Acres ("PIA").

a. Application of land status to two different analyses.

As mentioned previously in these Findings, the Court has made two determinations with respect to lands claimed as "practicably irrigable acres" (PIA). Based on the foregoing analyses of the United States' and Tribes' claims to water for irrigation, the Court finds that (1) prior to (or without) an economic analysis, certain lands comprise irrigable acres and that (2) after (or with) an economic analysis, certain lands comprise practicably irrigable acres.

b. Summary of irrigable and practicably irrigable acres. The following tables indicate those lands, described above, which the Court has found to be irrigable (without economics) and practicably irrigable (with economics):

WITHOUT ECONOMICS

<u>Future Lands</u>	<u>Irrigable Acres</u>	<u>Diversion Requirement (acre-feet)</u>	<u>Net-Irrigation Requirement (acre-feet)</u>
A. U.S. five future projects	29,943.2	108,424.3	54,213.1
B. Tribes' 2 additional projects	7,028.1	23,925.9	11,963.1
C. Type VIII lands	985.0	3,566.2	1,783.1
D. Indian-owned potentially irrigable lands	191.0	549.4	324.7
SUBTOTAL	<u>38,147.3</u>	<u>136,565.8</u>	<u>68,284.0</u>
<u>Historic Lands</u>			
A. Type VII	4,245.9	10,080.8	5,045.5
B. Unadjudicated-in-use	17,724.1	53,796.7	26,893.7
C. Indian-owned irrigated lands	5,046.0	18,218.8	9,109.8
D. Adjudicated lands	4,261.6	9,644.7	4,822.8
SUBTOTAL	<u>31,277.6</u>	<u>91,741.0</u>	<u>45,871.8</u>
GRAND TOTAL	69,424.9	228,306.8	114,155.8

WITH ECONOMICS

<u>Future Lands</u>	<u>Practicably Irrigable Acres</u>	<u>Diversion Requirement (acre-feet)</u>	<u>Net-Irrigation Requirement (acre-feet)</u>
A. U.S. five future projects	0	0	0
B. Tribes' 2 additional projects	0	0	0
C. Type VIII lands	0	0	0
D. Indian-owned potentially irrigable lands	0	0	0
SUBTOTAL	<u>0</u>	<u>0</u>	<u>0</u>
<u>Historic Lands</u>			
A. Type VII	2,503.5	6,585.4	3,292.7
*B. Unadjudicated-in-use	17,724.1	53,796.7	26,893.7
*C. Indian-owned irrigated lands	5,046.0	18,218.8	9,109.8
*D. Adjudicated lands	4,261.6	9,644.7	4,822.8
SUBTOTAL	<u>29,535.2</u>	<u>88,245.6</u>	<u>44,119.0</u>
GRAND TOTAL	29,535.2	88,245.6	44,119.0

* For the unadjudicated in-use, Indian-owned irrigated and adjudicated lands, previous findings have determined that none of these lands are practicably irrigable because of the failure of the United States and Tribes to demonstrate their economic feasibility of irrigation. As a result, if economic feasibility is a condition of PIA, the acreages and acre-foot amounts listed in this finding for those land types should be zero and corresponding reductions should be accounted for in the historic lands subtotal as well as the Grand Total.

28-7.b. The acreages and water requirements, based on the State's without economics analysis, are a summary of information from the findings indicated below:

<u>Land Type</u>	<u>Finding of Fact</u>
Future:	
U.S. five future projects	18-16, 18-21
Tribes' two projects	19-4, 19-12
Type VIII	20-6, 20-10
Indian-owned potentially irrigable	21-6
Historic:	
Type VII	23-13
Unadjudicated in-use	24-11
Indian-owned irrigated lands	25-6
Adjudicated lands	26-15

The acreages and water requirements, based on the State's with economics analysis, are a summary of information from the findings indicated below:

<u>Land Type</u>	<u>Finding of Fact</u>
Future:	
U.S. five future projects	18-35
Tribes' two projects	19-16
Type VIII	20-14
Indian-owned potentially irrigable	21-7
Historic:	
Type VII	23-17, Wyo. Exh. WRIR EJ-16
Unadjudicated in-use	24-11
Indian-owned irrigated lands	25-6
Adjudicated lands	26-15

28-8 Summary Finding - Irrigable Acres and PIA - Application of land status categories.

After determining those acres which are irrigable or practicably irrigable, the Court then reviewed each of those acres to determine to which land category it should be assigned.

a. Assumptions concerning PIA.

The Court determined two sets of acreages with two varying assumptions:

1. Irrigable lands, based on the application of no economic considerations (hereinafter "without economics"),
2. Practicably irrigable lands, based on the application of economics, using a 7-1/8% discount rate (hereinafter "with economics" or "after economics").

b. IRRIGABLE Lands - WITHOUT ECONOMICS - tabulation of land status, diversion requirements and net irrigation requirements, by category.

The following table summarizes the indicated information which is also contained in the narrative, detailed Findings of Fact 28-10 for each category:

IRRIGABLE ACRES WITHOUT ECONOMICS

LAND TYPES

CATEGORY	Adjudicated	Unadjudicated in-Use	Type VII	Type VIII	Futures	Indian Owned		Subtotal
						Fee 1	Fee 2	
00								
Acres		469.0	75.6	17.2	3636.3			5619.3
Diversion (AF)		1592.6	1224.0	64.3	19603.3			22484.7
Net Irr.Req.(AF)		796.3	612.0	32.2	9801.7			12242.2
01								
Acres	317.7	14233.9	3574.6	915.2	13043.0	753.0		33247.4
Diversion (AF)	2670.2	43451.3	3694.6	2946.3	46274.4	2529.5		108666.3
Net Irr.Req.(AF)	1335.2	22720.5	4332.3	1473.2	23137.9	1315.0		54334.1
02								0
Acres								0
Diversion (AF)								0
Net Irr.Req.(AF)								0
03								0
Acres								0
Diversion (AF)								0
Net Irr.Req.(AF)								0
04								
Acres	58.0	1390.0	198.0		385.7			2051.7
Diversion (AF)	193.9	4258.7	342.6		1433.1			5438.3
Net Irr.Req.(AF)	92.0	2229.5	271.3		726.6			3219.4
05								
Acres		12.0						12.0
Diversion (AF)		128.4						128.4
Net Irr.Req.(AF)		64.2						64.2
06								
Acres		11.0						11.0
Diversion (AF)		6.0						6.0
Net Irr.Req.(AF)		3.0						3.0
07								
Acres	494.6	135.3	35.0			23.0		688.4
Diversion (AF)	986.2	204.3	48.4			37.3		1326.3
Net Irr.Req.(AF)	493.3	102.3	24.2			43.9		603.7
08								
Acres								0
Diversion (AF)								0
Net Irr.Req.(AF)								0
09								
Acres	2246.0	329.3	262.0		1261.4			3998.4
Diversion (AF)	4044.4	140.4	421.6		4615.7			9522.1
Net Irr.Req.(AF)	2022.2	220.3	210.7		2308.0			4761.0
10								
Acres	12.0	943.0	146.1	147.0	32191.3			33439.3
Diversion (AF)	26.0	1350.3	268.4	532.2	79604.1			81781.0
Net Irr.Req.(AF)	13.0	675.5	134.3	266.1	39802.2			40891.0
11								
Acres						2919.0		2919.0
Diversion (AF)						10310.5		10310.5
Net Irr.Req.(AF)						5153.3		5153.3
12								
Acres	44.0	30.2	7.2		39.3	1442.0	191.0	1964.5
Diversion (AF)	34.0	214.5	20.2		402.9	3130.9	649.4	5551.1
Net Irr.Req.(AF)	12.0	107.3	10.1		201.5	2595.5	324.7	3291.2
13								
Acres	15.0	27.2						42.2
Diversion (AF)	38.3	43.2						81.5
Net Irr.Req.(AF)	19.2	21.5						40.7
14								
Acres		79.3	10.0	9.3				99.3
Diversion (AF)		297.2	25.0	36.7				358.9
Net Irr.Req.(AF)		148.5	12.5	18.0				189.0
15								
Acres	114.3	151.4	11.0	13.0				289.7
Diversion (AF)	339.5	377.1	27.5	27.3				791.4
Net Irr.Req.(AF)	169.3	138.6	13.3	23.3				396.5
16								
Acres	430.0	400.3	12.0					842.3
Diversion (AF)	1271.5	2024.1	33.5					3329.1
Net Irr.Req.(AF)	635.3	912.7	17.3					1250.0
TOTALS								
Acres	4261.5	17724.1	4245.9	395.0	36971.2	3046.0	191.0	69424.7
Diversion (AF)	7644.7	33796.7	10084.0	3593.0	132350.2	13213.3	649.4	159306.3
Net Irr.Req.(AF)	4322.3	26893.7	5047.0	1791.5	66179.2	9109.3	324.7	124155.7

- c. "PIA" - WITH ECONOMICS (7-1/8% discount rate)-
tabulation of land status, diversion requirement and
net irrigation requirements, by category.

The following table summarizes the indicated information which is also contained in the narrative, detailed Findings of Fact shown for each category: .

P.L.A. WITH ECONOMICS

LAND TYPE

CATEGORY	Adjudicated	Unadjudicated In-Use	LAND TYPE			Indian Owned		Subtotal
			Type VII	Type VIII	Futures	Fee 1	Fee 2	
00 Acres Diversion (AF) Net Irr.Req.(AF)		469.0 1592.6 796.3	348.6 909.1 454.6					317.6 2501.7 2280.3
01 Acres Diversion (AF) Net Irr.Req.(AF)	917.7 2670.2 1335.2	14233.9 45431.2 22720.3	2291.3 5995.0 2997.3			763.0 2629.6 1313.0		18105.9 56746.6 28362.2
02 Acres Diversion (AF) Net Irr.Req.(AF)								0 0 0
03 Acres Diversion (AF) Net Irr.Req.(AF)								0 0 0
04 Acres Diversion (AF) Net Irr.Req.(AF)	88.0 183.9 92.0	1390.0 4258.7 2129.3	120.7 357.4 178.7					1598.7 4800.0 2400.2
05 Acres Diversion (AF) Net Irr.Req.(AF)		32.0 128.4 64.2						32.0 128.4 64.2
06 Acres Diversion (AF) Net Irr.Req.(AF)		11.0 6.0 3.0						11.0 6.0 3.0
07 Acres Diversion (AF) Net Irr.Req.(AF)	494.6 986.2 493.3	135.3 204.5 102.3				23.0 87.3 43.9		633.4 1278.3 639.3
08 Acres Diversion (AF) Net Irr.Req.(AF)								0 0 0
09 Acres Diversion (AF) Net Irr.Req.(AF)	2246.0 4044.4 2022.2	229.3 440.4 220.3	30.2 62.3 31.1					2505.5 4547.2 2273.5
10 Acres Diversion (AF) Net Irr.Req.(AF)	12.0 26.0 13.0	943.0 1350.8 675.5	33.1 97.9 49.0					988.1 1474.7 737.3
11 Acres Diversion (AF) Net Irr.Req.(AF)						2918.0 10310.5 5155.3		2519.0 10310.5 5155.3
12 Acres Diversion (AF) Net Irr.Req.(AF)	44.0 84.0 42.0	90.2 214.5 107.3	7.2 20.2 10.1			1442.0 5190.9 2895.6		1583.4 3309.5 2733.0
13 Acres Diversion (AF) Net Irr.Req.(AF)	15.0 38.8 19.4	27.2 43.2 21.6						42.2 82.0 41.0
14 Acres Diversion (AF) Net Irr.Req.(AF)		79.8 297.2 148.6	10.0 25.0 12.5					29.8 322.2 161.1
15 Acres Diversion (AF) Net Irr.Req.(AF)	114.3 339.6 169.3	151.4 377.1 188.6	11.0 27.6 13.8					276.7 744.3 372.2
16 Acres Diversion (AF) Net Irr.Req.(AF)	430.0 1271.6 635.9	400.5 1024.1 512.3						530.5 1295.7 635.9
TOTALS Acres Diversion (AF) Net Irr.Req.(AF)	4261.6 9644.7 4822.8	17724.1 33796.7 26893.7	2503.5 6585.4 3292.7	0 0 0	0 0 0	3046.0 18229.3 9109.3	0 0 0	29535.2 38245.6 22129.0

28-9 Summary Finding - Irrigable Lands and PIA - Evaluation of broad land types by categories and by date.

Using the same two economic approaches to the determination of Irrigable Acres and "PIA," the Court has set forth the appropriate dates, acres, diversion requirements and net irrigation requirements for each category of land within that broad type in the following tables:

1. Irrigable Acres tabulation -- WITHOUT economics

The following tables summarize the indicated information, which is also contained in the narrative detailed Findings of Fact shown for each broad land type. The acreages shown are irrigable acres, as opposed to practicably irrigable acres; in other words, the irrigable acres can be irrigated if cost is no object.

a. Future Projects WITHOUT Economics

<u>Cat.</u>	<u>Appropriate Date</u>	<u>Irrigable Acres</u>	<u>Diversion Requirement Acre Feet</u>	<u>Net Irrigation Requirement Acre Feet</u>
00	Reservation Date: 07/03/1868	5,656.5	19,603.8	9,801.7
01	Reservation Date: 07/03/1868	13,043.0	46,274.4	23,137.9
04	Patent Date: 05/06/1907	385.7	1,453.1	726.6
09	Reacquisition Date: 09/11/1940 11/23/1940 01/07/1941 01/27/1941 05/03/1941 10/14/1941 01/07/1942 01/08/1942 01/09/1942 02/04/1942 02/26/1942 12/19/1942	184.7 52.0 20.0 309.0 15.0 20.0 27.0 4.6 358.3 25.0 227.2 18.6	663.0 186.0 71.8 1,109.0 54.0 71.8 97.0 17.2 1,340.1 90.0 849.8 66.0	331.5 93.0 35.9 554.5 27.0 35.9 48.5 8.6 670.1 45.0 425.0 33.0
	CATEGORY TOTAL	<u>1,261.4</u>	<u>4,615.7</u>	<u>2,308.0</u>
10	Reservation Date: 04/17/1940 04/26/1943 04/12/1944 02/02/1945 08/15/1953	5,669.7 66.1 9,292.2 20.0 7,143.3	20,185.0 236.9 33,480.2 72.0 25,630.0	10,092.5 118.4 16,740.3 36.0 12,815.0
	CATEGORY TOTAL	<u>22,191.3</u>	<u>79,604.1</u>	<u>39,802.2</u>
12	No Date:	89.9	402.9	201.5
	GRAND TOTAL	<u>36,971.3</u>	<u>132,350.2</u>	<u>66,176.2</u>

b. Type VIII Future Lands WITHOUT economics

<u>Cat.</u>	<u>Appropriate Date</u>	<u>Irrigable Acres</u>	<u>Diversion Requirement Acre Feet</u>	<u>Net Irrigation Requirement Acre Feet</u>
00	Reservation Date: 07/03/1868	17.2	64.3	32.2
01	Reservation Date: 07/03/1868	815.2	2,946.3	1,473.2
10	Restoration Date: 04/12/1944	147.0	532.2	266.1
14	No Date:	9.8	36.7	18.4
15	Reacquisition Date: 12/02/1940	13.0	47.8	23.9
GRAND TOTAL		985.0	3,563.0	1,781.6

c. Indian-owned "Potential" future WITHOUT
economics

<u>Cat.</u>	<u>Appropriate Date</u>	<u>Irrigable Acres</u>	<u>Diversion Requirement Acre Feet</u>	<u>Net Irrigation Requirement Acre Feet</u>
12	Reservation Date: 07/03/1868	191.0	649.4	324.7
	GRAND TOTAL	191.0	649.4	324.7

d. Unadjudicated In-Use historic lands WITHOUT economics

Cat.	Acquisition Date	Irrigation Acres	Diversion Requirement Acre Feet	Net Irrigation Requirement Acre Feet
20	Reservation Date: 07/23/1868	469.3	1,592.8	794.3
21	Reservation Date: 07/03/1868	14,233.9	45,482.3	22,720.3
24	Patent Date: 05/06/1907 05/16/1907	1,386.0 24.0	4,229.3 10.2	1,114.4 13.2
	CATEGORY TOTAL	1,390.0	4,238.7	1,129.3
25	No Date:	12.0	128.4	44.2
26	Reacquisition Date: 08/28/1916	11.0	4.0	3.0
27	Reacquisition Date: 01/02/1941 04/10/1941 11/27/41 01/01/1942 02/20/1943 04/14/1943	1.0 116.0 2.8 6.0 2.0 6.0	4.0 152.3 11.3 3.3 3.0 7.2	3.0 12.4 5.3 4.4 4.0 3.6
	CATEGORY TOTAL	133.8	204.3	132.3
29	Reacquisition Date: 11/12/1940 12/14/1940 01/02/1941 01/08/1941 04/10/1941 11/19/1941 12/27/1941 01/08/1942 02/02/1942 03/10/1942 03/31/1942 04/14/1942 07/03/1942 09/11/1942 01/12/1943 04/18/1943 06/12/1949	17.0 1.0 7.0 10.0 13.0 4.0 1.0 10.9 1.0 1.0 15.0 11.3 7.1 3.0 1.0 15.0 14.0	19.2 2.0 12.4 11.2 17.3 7.2 4.2 20.0 4.2 2.0 44.6 39.3 13.6 3.6 4.0 29.4 173.4	14.3 1.0 8.3 3.4 8.3 1.3 3.1 13.0 2.1 1.0 62.3 30.0 8.3 4.0 4.0 14.7 39.2
	CATEGORY TOTAL	129.3	440.4	320.3
28	Reservation Date: 04/17/1940 08/29/1942 04/12/1944 02/02/1945 10/27/1948 08/19/1953 07/23/1974	138.0 105.0 401.0 1.0 2.0 23.0 1.0	413.3 44.0 151.3 16.3 1.2 36.3 1.2	309.3 12.0 274.0 1.4 2.4 48.4 0.8
	CATEGORY TOTAL	743.0	1,150.3	475.5
12	No Date:	30.2	214.3	137.3
13	Date Returned: 12/20/1941 08/25/1949 12/12/1977 12/13/1980	1.0 3.0 1.0 13.0	13.3 3.0 2.6 10.3	11.4 3.0 1.3 8.4
	CATEGORY TOTAL	17.2	43.2	21.4
14	No Date:	73.3	237.2	148.6
15	Reacquisition Date: 10/23/1940 12/02/1940 02/18/1941 09/07/1941 02/12/1948 02/13/1948	13.0 12.0 44.4 41.0 1.0 13.0	3.0 10.2 185.0 41.4 1.0 53.1	3.0 18.0 127.1 21.7 1.0 22.7
	CATEGORY TOTAL	132.4	377.1	138.5
16	Reacquisition Date: 12/20/1941 12/10/1942 12/27/1942 05/21/1942 16/27/1943 12/18/1945 12/10/1946 12/14/1940 16/24/1979	42.0 146.4 23.0 1.0 1.0 42.3 1.0 1.0 14.0	114.1 179.7 1.0 1.0 1.0 128.3 129.0 11.1 125.0	11.0 119.0 1.0 1.0 1.0 18.3 14.0 11.0 111.0
	CATEGORY TOTAL	420.8	1,024.0	512.0

e. Type VII (Idle) historic WITHOUT economics

<u>Cat.</u>	<u>Appropriate Date</u>	<u>Irrigable Acres</u>	<u>Diversion Requirement Acre Feet</u>	<u>Net Irrigation Requirement Acre Feet</u>
00	Reservation Date: 07/03/1868	476.6	1,224.0	612.0
01	Reservation Date: 07/03/1868	3,574.6	8,694.6	4,352.3
04	Patent Date: 05/06/1907 10/19/1907	156.1 31.9	456.6 86.0	228.3 43.0
	CATEGORY TOTAL	188.0	542.6	271.3
07	Reacquisition Date: 07/14/1948	35.0	48.4	24.2
09	Reacquisition Date: 11/23/1940 03/31/1941 10/18/1941 11/25/1941 12/23/1941 02/13/1942 02/26/1942 04/14/1943 06/19/1943 11/26/1943 02/02/1946	8.0 3.0 21.2 53.9 43.3 9.4 13.0 13.0 50.0 17.2 30.0	11.0 4.0 57.4 82.0 59.8 26.4 38.5 18.0 63.0 23.8 37.7	5.5 2.0 28.7 41.0 29.9 13.2 19.2 9.0 31.5 11.9 18.8
	CATEGORY TOTAL	262.0	421.6	210.7
10	Restoration Date: 11/12/1942 04/12/1944	9.0 137.1	25.2 243.2	12.6 121.7
	CATEGORY TOTAL	146.1	268.4	134.3
12	No Date:	7.2	20.2	10.1
14	No Date:	10.0	25.0	12.5
15	Reacquisition Date: 05/10/1948	11.0	27.6	13.8
16	Reacquisition Date: 06/17/1943	12.0	35.6	17.8
	GRAND TOTAL	4,245.9	10,084.0	5,047.0

f. Indian-owned Fee "Irrigated" historic WITHOUT
economics

<u>Cat.</u>	<u>Appropriate Date</u>	<u>Irrigable Acres</u>	<u>Diversion Requirement Acre Feet</u>	<u>Net Irrigation Requirement Acre Feet</u>
01	Reservation Date: 07/03/1868	763.0	2,629.6	1,315.0
07	Reacquisition Date: 11/27/1941	23.0	87.8	43.9
11	No Date:	2,818.0	10,310.5	5,155.3
12	No Date:	1,442.0	5,190.9	2,595.6
GRAND TOTAL		5,046.0	18,218.8	9,109.8

G. Adjudicated historic lands WITHOUT economics

CAT.	ADJUSTABLE DATE	ADJUSTABLE ACRES	DIVERSION REQUIREMENT ACRES FEET	SEC. 1705 REQUIREMENT ACRES FEET
31	Reservation Date: 07/03/1368	327.7	1,670.2	1,133.2
34	Patent Date: 05/04/1307 05/20/1307	72.0 15.0	374.7 3.2	37.4 4.6
	CATEGORY TOTAL	38.0	131.9	32.0
37	Reacquisition Date: 01/02/1341 04/10/1341 11/27/1341 02/02/1342 04/25/1342 06/13/1342 07/23/1342 09/11/1342 02/20/1343	25.0 175.0 17.0 15.0 10.0 11.0 1.0 145.6 12.0	49.0 329.3 341.1 138.6 22.2 32.4 1.5 255.3 17.0	21.4 129.7 120.7 59.1 11.5 13.7 1.3 125.0 3.5
	CATEGORY TOTAL	494.6	386.2	493.1
39	Reacquisition Date: 09/10/1340 10/23/1340 11/15/1340 12/22/1340 12/23/1340 12/24/1340 12/25/1340 01/02/1341 01/08/1341 01/10/1341 03/11/1341 04/13/1341 07/08/1341 10/14/1341 12/13/1341 12/27/1341 12/22/1341 12/23/1341 01/08/1342 01/10/1342 02/03/1342 03/10/1342 04/24/1342 04/28/1342 07/03/1342 07/10/1342 01/12/1343 02/10/1343 04/14/1343 04/28/1343 11/25/1343 12/13/1344 02/20/1346 08/12/1368	14.0 19.0 4.0 75.0 15.0 12.0 10.0 157.0 453.0 33.0 44.0 34.0 10.0 43.0 32.0 40.0 73.0 13.0 17.0 140.0 25.0 128.0 37.0 11.0 24.0 1.0 20.0 35.0 7.0 106.0 13.0 20.0 12.0 40.0	94.2 101.4 145.0 121.3 48.4 32.3 15.2 249.3 750.0 23.5 37.0 151.4 37.8 38.2 174.5 152.3 139.2 3.0 43.3 20.0 48.0 139.4 154.8 15.4 42.3 11.3 122.3 148.4 41.3 20.0 12.6 49.4 4.4 93.4	48.0 10.0 10.0 40.0 14.0 11.0 3.0 114.0 138.0 13.0 13.0 10.0 18.0 18.0 13.0 14.0 14.0 0.0 12.0 100.0 24.0 109.0 77.4 7.0 22.4 1.0 19.0 74.2 10.0 10.0 1.0 24.0 1.0 46.0
	CATEGORY TOTAL	2,246.0	4,044.4	2,322.2
40	Restoration Date: 04/12/1344	12.0	25.0	13.0
42	No Date	44.0	34.0	42.0
43	Date Returned: 12/20/1341	13.0	13.3	13.4
45	Reacquisition Date: 02/25/1341 05/14/1341 02/12/1348 03/22/1351	45.0 40.0 1.0 22.0	129.4 141.5 12.1 22.1	79.7 70.3 12.3 4.4
	CATEGORY TOTAL	114.1	139.4	119.1
48	Reacquisition Date: 12/10/1341 12/20/1342 03/17/1343 05/03/1346 06/25/1379	117.0 132.0 10.0 19.0 122.0	443.4 330.4 424.2 24.4 133.2	221.7 142.0 11.0 11.0 130.4
	CATEGORY TOTAL	420.0	1,371.6	435.1
	GRAND TOTAL	1,241.4	1,111.7	1,111.7

2. PIA tabulation -- WITH economics

The following tables summarize the indicated information, which is also contained in the narrative detailed Findings of Fact 28-11 shown for each broad land type:

a. Future Projects with economics

There are no future project lands found to be PIA with economics.

b. Type VIII future lands with economics

There are no Type VIII future lands found to be PIA with economics.

c. Indian-owned "potential" future lands with economics

There are no Indian-owned "potential" future lands found to be PIA with economics.

d. Unadjudicated In-Use historic lands with economics

Cat.	Appropriate Date	Irrigable Acres	Diversion Requirement Acra Feet	% of Irrigation Requirement Acra Feet
10	Reservation Date: 07/23/1868	469.0	1,392.6	796.1
01	Reservation Date: 07/23/1868	14,233.9	43,451.8	22,720.3
34	Patent Date: 05/06/1907 05/16/1907	1,366.0 24.0	4,228.5 10.2	2,124.4 23.1
	CATEGORY TOTAL	1,190.0	4,258.7	2,129.3
35	No Date:	11.0	129.4	84.2
06	Reacquisition Date: 08/18/1936	11.0	6.0	1.0
37	Reacquisition Date: 01/02/1941 04/10/1941 11/27/41 01/01/1942 02/10/1943 04/11/1943	1.0 118.0 1.8 6.0 2.0 6.0	6.0 162.8 11.8 3.8 8.0 7.1	1.0 11.4 5.3 4.4 4.0 1.8
	CATEGORY TOTAL	133.8	204.3	132.3
39	Reacquisition Date: 11/22/1940 12/14/1940 01/02/1941 01/08/1941 04/10/1941 11/19/1941 11/27/1941 01/08/1942 02/12/1942 03/10/1942 03/11/1942 04/24/1942 07/03/1942 09/11/1942 01/12/1943 04/28/1943 06/11/1949	17.0 1.0 7.0 10.0 13.0 4.0 1.0 10.0 1.0 1.0 15.0 11.1 7.1 5.0 1.0 15.0 84.0	29.2 1.0 12.5 1.2 17.8 7.8 4.2 20.0 4.2 2.0 44.8 19.8 13.8 7.8 4.0 29.4 173.4	11.4 1.0 5.1 3.4 3.9 1.9 2.1 12.0 2.1 1.0 22.1 10.0 5.3 4.8 2.0 14.7 19.2
	CATEGORY TOTAL	129.1	440.4	220.3
10	Restoration Date: 04/17/1940 08/18/1942 04/12/1944 02/02/1945 10/27/1948 08/13/1953 07/23/1974	138.0 105.0 601.0 1.0 1.0 28.0 1.0	618.9 44.0 151.3 26.8 1.2 78.8 1.2	109.5 32.0 278.0 3.4 1.8 48.4 7.8
	CATEGORY TOTAL	843.0	1,150.3	875.5
12	No Date:	30.0	224.3	137.3
13	Date Returned: 11/20/1941 08/25/1949 10/12/1977 11/13/1980	1.0 1.0 1.0 10.0	13.1 7.0 1.8 13.1	24.4 3.0 1.8 5.4
	CATEGORY TOTAL	17.1	43.2	22.6
14	No Date:	79.3	297.2	148.8
15	Reacquisition Date: 10/23/1940 11/22/1940 02/08/1941 05/07/1941 02/12/1948 02/13/1948	19.0 12.0 64.0 61.0 1.0 12.0	3.0 10.2 235.0 43.4 1.0 15.1	3.0 15.0 127.0 22.7 1.8 12.7
	CATEGORY TOTAL	131.4	377.1	138.8
16	Reacquisition Date: 11/20/1941 02/10/1942 11/07/1942 08/23/1942 06/17/1943 01/08/1948 12/17/1948 03/10/1940 06/28/1979	42.0 168.8 23.0 1.0 1.0 42.0 79.0 1.0 16.0	184.1 179.7 7.1 1.0 1.0 126.8 149.3 1.0 103.0	11.0 119.9 1.0 1.0 1.0 48.5 14.5 1.0 61.0
	CATEGORY TOTAL	430.3	1,024.2	522.3

e. Type VII (Idle) historic lands with economics

<u>Cat.</u>	<u>Appropriate Date</u>	<u>Practicably Irrigable Acres</u>	<u>Diversion Requirement Acre Feet</u>	<u>Net Irrigation Requirement Acre Feet</u>
00	Reservation Date: 07/03/1868	348.6	909.1	454.5
01	Reservation Date: 07/03/1868	2,291.3	5,995.0	2,997.5
04	Patent Date: 05/06/1907	120.7	357.4	178.7
09	Reacquisition Date: 02/26/1942 11/26/1943	13.0 17.2	38.5 23.8	19.2 11.9
	CATEGORY TOTAL	30.2	62.3	31.1
10	Restoration Date: 04/12/1944	33.1	97.9	49.0
12	No Date:	7.2	20.2	10.1
14	No Date:	10.0	25.0	12.5
15	Reacquisition Date: 05/10/1948	11.0	27.6	13.8
	GRAND TOTAL	2,503.5	6,585.4	3,292.7

f. Indian-owned Fee "Irrigated" historic lands
with economics

<u>Cat.</u>	<u>Appropriate Date</u>	<u>Practicably Irrigable Acres</u>	<u>Diversion Requirement Acre Feet</u>	<u>Net Irrigation Requirement Acre Feet</u>
01	Reservation Date: 07/03/1868	763.0	2,629.6	1,315.0
07	Reacquisition Date: 11/27/1941	23.0	87.8	43.9
11	No Date:	2,818.0	10,310.5	5,155.3
12	No Date:	1,442.0	5,190.9	2,595.6
GRAND TOTAL		5,046.0	18,218.8	9,109.8

g. Adjudicated historic lands with economics

Case	Appropriate Case	Intangible Acres	Conversion Requirement Acres Feet	Net Conversion Requirement Acres Feet
31	Reservation Case: 37/03/1868	327.7	2,570.2	2,338.2
34	Patent Case: 05/05/1907 05/20/1907	72.3 16.3	274.7 9.2	37.4 4.5
CATEGORY TOTAL		38.0	133.9	32.0
37	Reacquisition Case: 01/02/1941 04/10/1941 11/27/1941 02/02/1942 04/25/1942 06/13/1942 07/23/1942 09/11/1942 02/20/1943	25.3 175.3 37.3 35.0 40.0 21.0 1.3 145.6 22.0	49.3 319.1 142.1 138.6 23.2 38.4 1.5 253.9 27.0	24.8 129.7 70.7 49.3 12.5 19.2 1.3 128.0 3.8
CATEGORY TOTAL		494.8	386.2	493.1
39	Reacquisition Case: 09/13/1940 10/23/1940 11/18/1940 11/22/1940 12/23/1940 12/14/1940 12/21/1940 01/02/1941 01/08/1941 01/20/1941 03/31/1941 04/10/1941 07/08/1941 10/14/1941 11/19/1941 11/27/1941 12/22/1941 12/23/1941 01/08/1942 01/30/1942 02/03/1942 03/10/1942 04/24/1942 04/28/1942 07/03/1942 07/30/1942 01/12/1943 02/20/1943 04/14/1943 04/28/1943 11/15/1943 12/13/1944 02/20/1946 08/22/1968	34.3 19.3 74.3 74.3 15.3 15.3 10.3 157.3 453.3 13.3 44.3 34.3 10.3 45.3 32.3 40.3 73.3 13.3 17.3 140.3 25.3 123.3 17.3 13.3 24.3 1.3 20.3 33.3 148.4 12.3 128.3 13.3 20.3 2.3 20.3 20.3 20.3 1.3 20.3 20.3	35.2 137.4 145.0 121.3 32.4 32.4 34.2 249.8 770.2 20.6 37.0 112.4 37.4 38.2 175.4 152.1 239.2 3.0 43.3 201.0 48.3 219.4 154.3 14.4 42.3 11.3 79.2 148.4 41.3 201.0 10.6 49.4 4.4 93.4	48.1 30.7 72.3 60.9 14.3 12.1 2.1 124.9 235.0 10.5 23.5 30.7 28.3 44.3 38.7 44.4 114.8 3.0 32.9 220.4 24.0 123.7 7.7 22.4 3.3 19.4 74.2 20.3 100.3 2.1 34.3 1.2 46.7
CATEGORY TOTAL		2,216.3	4,044.4	3,022.2
41	Reservation Case: 04/12/1944	12.3	25.3	22.3
42	No Case	44.3	34.3	40.3
43	Case Returned: 12/20/1941	13.3	18.3	13.4
45	Reacquisition Case: 02/25/1941 05/24/1941 02/02/1946 03/13/1951	45.3 40.3 7.3 22.3	183.4 142.4 28.4 22.1	79.7 75.3 22.3 9.4
CATEGORY TOTAL		124.3	339.4	189.3
46	Reacquisition Case: 12/20/1941 12/20/1942 03/07/1942 03/23/1946 06/28/1979	127.3 131.3 10.3 13.3 120.3	483.4 390.4 128.1 21.4 121.2	331.7 325.3 121.1 14.4 121.2
CATEGORY TOTAL		430.3	1,071.4	733.3
GRAND TOTAL		4,128.4	7,444.4	5,322.2

28-10 Detailed land status and data analysis - irrigable lands without economic analysis.

a. Same definition of categories and types.

The land status categories referred to herein are identical to those set forth in Finding of Fact 28-4, supra; the broad land types used herein are identical to those contained in Finding of Fact 28-5, supra.

b. Specific analysis, by land category.

Each land status category 00 through 16 is discussed in detail in 28-10.B.1 through 17, infra.

1. Land status category 00.

Of those lands found to constitute irrigable acres as a result of the "without economics" analysis previously described, the Court finds that 6,619.3 acres, having a diversion requirement of 22,484.7 acre-feet and a net irrigation requirement of 11,242.7 acre-feet, constitute category 00 lands: Unallotted trust land which has been in continuous trust since July 3, 1868. Category 00 lands are summarized in the following table:

<u>Land Type</u>	<u>Irrigable Acres</u>	<u>Diversion Requirement Acre-Feet</u>	<u>Net Irrigation Requirement Acre-Feet</u>
(a) Unadjudicated In-Use	469.0	1,592.6	796.3
(b) Type VII	476.6	1,224.0	612.0
(c) Type VIII	17.2	64.3	32.2
(d) Future Projects	5,656.5	19,603.8	9,801.7
CATEGORY TOTAL	<u>6,619.3</u>	<u>22,484.7</u>	<u>11,242.2</u>

28-10.b.1(a)

Differences from claims of the United States and Tribes regarding arability of unadjudicated in-use land are derived from Wyoming Exhibit WRIR SS-1000. Acreage is from Wyoming Exhibit WRIR HSO-2A. Water requirements are from Wyoming Exhibit WRIR HFB-1. Land status of the acreage in this finding is derived from United States Exhibit WRIR C-317. Tracts included are listed below:

1-019
1-020
1-021
1-078
1-079
1-081
1-082
1-089
1-091
1-116
1-117
1-126
1-155
1-160
2-069
2-109
4-004
5-026
11-002
11-004
11-005
11-006
11-007
12-002
12-003
14-006
27-007
29-001
29-002
29-003
29-004

83
YELLOW PAPER

28-10.b.1(b)

Differences from claims of the United States and Tribes regarding arability of Type VII land are derived from Wyoming Exhibit WRIR SS-7 Revised. Irrigable acreage is from Wyoming Exhibit WRIR HSO-4. Water requirements are from Wyoming Exhibit WRIR HFB-2. Land status of the acreage in this finding is from United States Exhibit WRIR C-317. Tracts included are listed below:

1-016X
1-45X
1-049X
1-053X
1-056X
3-13X
5-020X
5-039X
19-004X
22-014X
25-13X

28-10.b.1(c)

Differences from claims of the United States and Tribes regarding arability of Type VIII land are derived from Wyoming Exhibit WRIR SS-8 Revised. Irrigable acreage is from Wyoming Exhibit WRIR FSO-14. Water requirements are from Wyoming Exhibit WRIR FFB-1. Land status of the acreage in this finding is derived from United States Exhibit WRIR C-317. Tracts included are listed below:

6-007X

28-10.b.1(d)

Differences from claims of the United States and Tribes regarding arability of proposed future project lands are derived from Wyoming Exhibit WRIR SS-255. Irrigable acreage is from Wyoming Exhibit WRIR FSO-3. Water requirements are from Wyoming Exhibit WRIR FFB-3. Land status of the acreage in this finding is derived from United States Exhibit WRIR C-317.

Tracts included are listed below:

Arapahoe Unit

Pump # 1
3
4
5
6
9

Big Horn Flats

Pump # 1
2
3

Big Horn Flats Extension

Pump # A
C
D
E
F
G
H
J
K

South Crowheart

Pump # 1
7
8
10
11

2. Land status category 01.

Of those lands found to constitute irrigable acres as a result of the "without economics" analysis previously described, the Court finds that 33,247.4 acres, having a diversion requirement of 108,666.9 acre-feet and a net irrigation requirement of 54,334.1 acre-feet, constitute category 01 lands: Land which has been in trust and individual Indian ownership continuously since July 3, 1868. This category includes allotted lands but does not include land in the diminished portion of the reservation which has been returned to tribal trust from ownership by individual Indians. Category 01 lands are summarized in the following table:

<u>Land Type</u>	<u>Irrigable Acres</u>	<u>Diversion Requirement Acre-Foot</u>	<u>Net Irrigation Requirement Acre-Foot</u>
(a) Adjudicated	817.7	2,670.2	1,335.2
(b) Unadjudicated In-Use	14,233.9	45,451.8	22,720.5
(c) Type VII	3,574.6	8,694.6	4,352.3
(d) Indian-Owned Fee "I"	763.0	2,629.6	1,315.0
(e) Type VIII	815.2	2,946.3	1,473.2
(f) Future Projects	13,043.0	46,274.4	23,137.9
CATEGORY TOTAL	<u>33,247.4</u>	<u>108,666.9</u>	<u>54,334.1</u>

28-10.b.2(a)

Differences from claims of the United States and Tribes concerning arability of adjudicated land are derived from Wyoming Exhibit WRIR SS-1002. Acreage is from Wyoming Exhibit WRIR HSO-7 Second Revised. Water requirements are from Wyoming Exhibit WRIR HFB-3. Land status of the acreage in this finding is from United States Exhibit WRIR C-317. Tracts included are listed below:

- | | |
|----------|---------|
| 1-001C | 22-005C |
| 1-002C | 23-001C |
| 1-003C | 23-002C |
| 1-004C | 25-002C |
| 2-007C1 | 25-003C |
| 5-001CW | 25-004C |
| 5-003C1 | 31-001C |
| 5-004CM | 31-002C |
| 14-003C2 | 31-003C |
| 22-001C | 31-004C |
| 22-002C | 32-001C |
| 22-003C | |

28-10.b.2(b)

Differences from claims of the United States and Tribes regarding availability of unadjudicated in-use land are derived from Wyoming Exhibit WRIR SS-1000. Acreage is from Wyoming Exhibit WRIR HSO-2A. Water requirements are from Wyoming Exhibit WRIR HFB-1. Land status of the acreage in this finding is derived from United States Exhibit WRIR C-317. Tracts included are listed below:

1-003	1-051	1-109	1-152	2-027	5-054	6-011	27-012
1-005	1-052	1-110	1-153	2-028	5-055	6-012	27-016
1-006	1-053	1-112	1-154	2-029	5-058	7-001	24-003
1-010	1-056	1-114	1-155	2-031	5-060	7-002	24-004
1-012	1-057	1-115	1-158	2-034	5-061	7-009	24-005
1-014	1-064	1-116	1-159	2-036	5-063	7-011	24-006
1-015	1-068	1-117	1-160	2-037	5-068	7-012	24-007
1-018	1-072	1-120	1-161	2-038	5-070	7-014	25-007
1-019	1-074	1-122	1-162	2-039	5-071	7-015	25-008
1-020	1-077	1-123	2-002	2-041	5-072	7-017	25-009
1-021	1-078	1-124	2-005	2-042	5-073	11-002	25-010
1-026	1-079	1-126	2-006	2-043	5-074	11-003	25-011
1-027	1-081	1-130	2-007	2-044	5-075	11-004	25-013
1-029	1-082	1-132	2-009	2-047	5-076	11-005	25-014
1-033	1-087	1-135	2-010	2-047	5-077	11-006	25-015
1-035	1-089	1-136	2-011	2-050	5-077	11-007	25-001
1-038	1-091	1-138	2-012	2-051	5-078	11-008	26-002
1-039	1-092	1-143	2-013	2-053	6-001	11-009	26-007
1-042	1-093	1-144	2-014	2-054	6-002	11-010	26-008
1-043	1-094	1-145	2-014	2-055	6-003	11-013	27-001
1-044	1-095	1-146	2-015	2-056	6-004	11-014	27-003
1-046	1-096	1-146A	2-016	2-057	6-005	11-015	27-004
1-047	1-101	1-148	2-018	2-058	6-006	11-016	27-006
1-048	1-102	1-149A	2-020	2-058	6-007	11-017	27-007
1-050	1-106	1-150	2-024	2-060	6-008	11-017	27-007
	1-107	1-151	2-025	2-063		12-001	27-008
			2-026	2-064			
2-065	2-105	3-019	4-003	5-008	12-002	22-009	
2-066	2-107	3-020	4-004	5-016	12-003	22-010	27-009
2-067	2-109	3-023	4-005	5-017	12-005	22-011	27-010
2-067B	2-110	3-024	4-007	5-018	12-006	22-012	27-011
2-069	2-111	3-025	4-009	5-019	12-007	22-013	
2-072	2-112	3-026	4-010	5-020	12-008	22-015	
2-073	2-113	3-029	4-011	5-025	12-009	22-016	27-012
2-074	2-114	3-030	4-012	5-026	12-010	22-017	27-013
2-075	2-115	3-031	4-016	5-027	13-003	22-018	28-004
2-076	2-116	3-032	4-018	5-028	13-005	22-019	
2-077	2-117	3-033	4-021	5-029	14-002	22-021	
2-079	2-118	3-034	4-022	5-030	14-003	22-022	
2-080	3-001	3-035	4-023	5-031	14-004	22-023	29-001
2-081	3-004	3-042	4-024	5-031	14-005	22-025	29-002
2-087	3-005	3-045	4-025	5-032	14-006	22-026	29-003
2-091	3-006	3-046	4-026	5-033	14-007	22-027	
2-093	3-007	3-047	5-001	5-034	14-008	22-030	29-001
2-094	3-009	3-049	5-002	5-035	14-009	23-001	31-009
2-097	3-010	3-050	5-003	5-037	14-010	23-002	31-004
3-098	3-011	3-052	5-004	5-038	14-011	23-003	
2-099	3-012	3-053	5-006	5-039	22-002	23-004	
2-100	3-013	3-054	5-008	5-040	22-003	23-005	31-005
2-101	3-014	3-058	5-009	5-042	22-004	23-006	32-002
2-103	3-015	4-001	5-014	5-043	22-005	23-007	32-003
2-104	3-017	4-002	5-015	5-046	22-008	23-008	
				5-048		23-009	
				5-049		23-010	

28-4.b.2(c)

Differences from claims of the United States and Tribes regarding arability of Type VII land are derived from Wyoming Exhibit WRIR SS-7 Revised. Irrigable acreage is from Wyoming Exhibit WRIR HSO-4. Water requirements are from Wyoming Exhibit WRIR HFB-2. Land status of the acreage in this finding is from United States Exhibit WRIR C-317. Tracts included are listed below:

1-001X	5-002X	24-001X
1-002X	5-020X	24-016X
1-016X	5-021X	24-003X
1-042X	5-023X	24-005X
1-043X	5-024X	24-009X
1-045X	5-031X	24-011X
1-046X	5-032X	24-012X
1-048X	5-033X	24-013X
1-049X	5-039X	
1-053X	5-040X	
1-055X	6-001X	
1-056X	6-004X	
1-063X	7-001X	
2-006X	7-002X	
2-007X	7-004X	
2-008X	7-005X	
2-009X	7-006X	
2-010X	7-015X	
2-012X	7-018X	
2-013X	13-001X	
2-015X	14-003X	
2-017X	14-008X	
2-021X	14-009X	
2-027X	19-004X	
2-029X	22-006X	
2-030X	22-008X	
2-031X	22-014X	
2-048X		
2-049X		
2-051X		
2-054X		
3-002X		
3-012X		
3-013X		
3-014X		

28-10.b.2(d)

Differences from claims of the United States and Tribes concerning the arability of Indian-owned fee "I" land are derived from Wyoming Exhibit WRIR SS-1003. Irrigated acreage is from Wyoming Exhibit WRIR HSO-10. Water requirements are from Wyoming Exhibit WRIR HFB-4. Land status of the acreage in this finding is from United States Exhibit WRIR C-317, Tribes Exhibit KH-12, and Wyoming Exhibit WRIR TH-19. Tracts included are listed below:

1-025H
1-051H
1-082H
1-115H
2-118H
3-076H
4-018H
4-088H
5-020H
5-077H
5-078H
5-079H
5-086H
5-121H
8-044H
12-102H
15-110H
19-030H
22-111H

28-10.b.2(e)

Differences from claims of the United States and Tribes regarding arability of Type VIII land are derived from Wyoming Exhibit WRIR SS-8 Revised. Irrigable acreage is from Wyoming Exhibit WRIR FSO-14. Water requirements are from Wyoming Exhibit WRIR FFB-1. Land status of the acreage in this finding is derived from United States Exhibit WRIR C-317. Tracts included are listed below:

2-3X	5-15X
2-4X	5-18X
2-5X	5-19X
2-19X	5-25X
3-3X	5-27X
3-4X	5-30X
3-5X	5-37X
3-7X	5-38X
3-8X	6-5X
3-9X	6-6X
3-18X	6-7X
3-20X	6-8X
5-14X	

24-4.b.2(f)

Differences from claims of the United States and Tribes regarding arability of proposed future project lands are derived from Wyoming Exhibit WRIR SS-255. Irrigable acreage is from Wyoming Exhibit WRIR FSO-3. Water requirements are from Wyoming Exhibit WRIR FFB-3. Land status of the acreage in this finding is derived from United States Exhibit WRIR C-317. Tracts included are listed below:

Arapahoe Unit Pump #'s

1
3
4
5
6
7
9

Big Horn Flats Extension Unit
Pumps

A
C
D
E
F
G
H
I
J
K

Big Horn Flats Unit

Pump #'s

1
2
3
4

South Crowheart Unit Pump #'s

1
2
3
4
5
6
7
8
9
10
11
12
14
15
16

3. Land status category 02.

Of those lands found to constitute irrigable acres as a result of the "without economics" analysis previously described, the Court finds that there are no irrigable acres constituting land status category 02 lands: Unallotted, unrestored ceded land which has been reacquired in trust by individual Indians.

28-10.b.3

See United States Exhibit WRIR C-317.

4. Land status category 03.

Of those lands found to constitute irrigable acres as a result of the "without economics" analysis, described in Finding of Fact 28-2.a., supra, the Court finds that there are no irrigable acres constituting land status category 03 lands: Allotted, unrestored land in the ceded portion of the Reservation for which a trust patent was issued prior to March 3, 1905.

28-10.b.4

The United States' and Tribes' evidence indicates no land in this category. See United States Exhibit WRIR C-317.

5. Land status category 04.

Of those lands found to constitute irrigable acres as a result of the "without economics" analysis previously described, the Court finds that 2,051.7 acres, having a diversion requirement of 6,438.3 acre-feet and a net irrigation requirement of 3,219.4 acre-feet, constitute category 4 lands: Allotted, unrestored lands in the ceded portion of the restoration for which a trust patent was issued on or after March 3, 1905. Category 04 lands are summarized in the following table:

a. Adjudicated Lands

	<u>Patent Date</u>	<u>Irrigable Acres</u>	<u>Diversion Requirement (acre-feet)</u>	<u>Net Irrigation Requirement (acre-feet)</u>
(1)	05/06/07	72.0	174.7	87.4
(2)	05/20/07	16.0	9.2	4.6
		<hr/>	<hr/>	<hr/>
	Subtotal	88.0	183.9	92.0

Land Status Category 04, Irrigable Lands

b. Unadjudicated In-Use Lands

	<u>Patent Date</u>	<u>Irrigable Acres</u>	<u>Diversion Requirement (acre-feet)</u>	<u>Net Irrigation Requirement (acre-feet)</u>
(1)	05/06/07	1,366.0	4,228.5	2,114.4
(2)	05/16/07	24.0	30.2	15.1
		<hr/>	<hr/>	<hr/>
	Subtotal	1,390.0	4,258.7	2,129.5

c. Type VII Lands

	<u>Patent Date</u>	<u>Irrigable Acres</u>	<u>Diversion Requirement (acre-feet)</u>	<u>Net Irrigation Requirement (acre-feet)</u>
(1)	05/06/07	156.1	456.6	228.3
(2)	10/19/07	31.9	86.0	43.0
		<hr/>	<hr/>	<hr/>
	Subtotal	188.0	542.6	271.3

d. Future Project Lands

	<u>Patent Date</u>	<u>Irrigable Acres</u>	<u>Diversion Requirement (acre-feet)</u>	<u>Net Irrigation Requirement (acre-feet)</u>
	05/06/07	385.7	1,453.1	726.6
		<hr/>	<hr/>	<hr/>
	Subtotal	385.7	1,453.1	726.6
		<hr/>	<hr/>	<hr/>
CATEGORY TOTAL		2,051.7	6,438.3	3,219.4

28-10.b.5.(a)

Differences from claims of the United States and Tribes concerning arability of adjudicated land are derived from Wyoming Exhibit WRIR SS-1002. Acreage is from Wyoming Exhibit WRIR HSO-7 Second Revised. Water requirements are from Wyoming Exhibit WRIR HFB-3. Land status of the acreage in this finding is from United States Exhibit WRIR C-317. Tracts included are listed below:

16-049C
19-001C
19-012C

28-10.b.5(b)

Differences from claims of the United States and Tribes regarding arability of unadjudicated in-use land are derived from Wyoming Exhibit WRIR SS-1000. Acreage is from Wyoming Exhibit WRIR HSO-2A. Water requirements are from Wyoming Exhibit WRIR HFB-1. Land status of the acreage in this finding is derived from United States Exhibit WRIR C-317. Tracts included are listed below:

08-001
08-002
08-003
08-004
08-005
09-002
09-004
09-005
09-006
09-007
09-009
09-010
09-011
09-012
09-013
09-016
09-018
09-019
09-021
19-010
19-011
19-024
19-025
19-027
24-001
32-005

28-10.b.5(c)

Differences from claims of the United States and Tribes regarding arability of Type VII land are derived from Wyoming Exhibit WRIR SS-7 Revised. Irrigable acreage is from Wyoming Exhibit WRIR HSO-4. Water requirements are from Wyoming Exhibit WRIR HFB-2. Land status of the acreage in this finding is from United States Exhibit WRIR C-317. Tracts included are listed below:

09-002X
24-014X
24-015X
19-006X
19-007X

28-10.b.5(d)

Differences from claims of the United States and Tribes regarding arability of proposed future project lands are derived from Wyoming Exhibit WRIR SS-255. Irrigable acreage is from Wyoming Exhibit WRIR FSO-3. Water requirements are from Wyoming Exhibit WRIR FFB-3. Land status of the acreage in this finding is derived from United States Exhibit WRIR C-317.

Tracts included are listed below:

Riverton East Unit
Pump #'s

1
2
3
5
7

6. Land status category 05.

Of those lands found to constitute irrigable acres as a result of the "without economics" analysis previously described, the Court finds that 32 acres, having a diversion requirement of 128.4 acre-feet and a net irrigation requirement of 64.2 acre-feet, constitute category 05 lands: Unrestored land in the ceded portion of the Reservation for which no evidence as to ownership has been introduced but which has been claimed to be trust lands by the United States and Tribes. Category 05 lands are summarized in the following table:

<u>Land Type</u>	<u>Irrigable Acres</u>	<u>Diversion Requirement Acre-Feet</u>	<u>Net Irrigation Requirement Acre-Feet</u>
(a) Unadjudicated In-Use	32.0	128.4	64.2
CATEGORY TOTAL	32.0	128.4	64.2

28-10.b.6(a)

Differences from claims of the United States and Tribes regarding arability of unadjudicated in-use land are derived from Wyoming Exhibit WRIR SS-1000. Acreage is from Wyoming Exhibit WRIR SHO-2A. Water requirements are from Wyoming Exhibit WRIR HFB-1. Land status of the acreage in this finding is derived from United States Exhibit WRIR C-317. Tracts included are listed below:

08-007

08-008

08-009

19-012

7. Land status category 06.

Of those lands found to constitute irrigable acres as a result of the "without economics" analysis previously described, the Court finds that 11 acres, having a diversion requirement of 6 acre-feet and a net irrigation requirement of 3 acre-feet, constitute category 06 lands: Unrestored lands in the ceded land which has been reacquired in trust by individual Indians. Category 06 lands are summarized in the following table:

a. Unadjudicated In-Use

<u>Reacquis- ition Date</u>	<u>Irrigable Acres</u>	<u>Diversion Requirement (acre-feet)</u>	<u>Net Irrigation Requirement (acre-feet)</u>
08/28/36	11	6	3
	—	—	—
CATEGORY TOTAL	11	6	3

28-10.b.7(a)

Differences from claims of the United States and Tribes regarding arability of unadjudicated in-use land are derived from Wyoming Exhibit WRIR SS-1000. Acreage is from Wyoming Exhibit WRIR HSO-2A. Water requirements are from Wyoming Exhibit WRIR HFB-1. Land status of the acreage in this finding is derived from United States Exhibit WRIR C-317. Tracts included are listed below:

20-014

8. Land status category 07.

Of those lands found to constitute irrigable acres as a result of the "without economics" analysis previously described, the Court finds that 688.4 acres, having a diversion requirement of 1,326.9 acre-feet and a net irrigation requirement of 663.7 acre-feet, constitute category 07 lands: Unrestored lands in the ceded land which has been reacquired in trust by the Tribes. Category 07 lands are summarized in the following tables:

a. Adjudicated Lands

	<u>Reacqui-</u> <u>sition</u> <u>Date</u>	<u>Irrigable</u> <u>Acres</u>	<u>Diversion</u> <u>Requirement</u> <u>(acre-feet)</u>	<u>Net</u> <u>Irrigation</u> <u>Requirement</u> <u>(acre-feet)</u>
(1)	01/02/41	25.0	49.0	24.5
(2)	04/10/41	176.0	319.3	159.7
(3)	11/27/41	37.0	141.3	70.7
(4)	02/02/42	35.0	138.6	69.3
(5)	04/25/42	40.0	23.2	11.6
(6)	06/15/42	21.0	38.4	19.2
(7)	07/23/42	3.0	3.5	1.8
(8)	09/11/42	145.6	255.9	128.0
(9)	02/20/43	12.0	17.0	8.5
	Subtotal	494.6	986.2	493.3

Land Status Category 07, Irrigable Lands

b. Unadjudicated In-Use Lands

	<u>Reacquisi- tion Date</u>	<u>Irrigable Acres</u>	<u>Diversion Requirement (acre-feet)</u>	<u>Net Irrigation Requirement (acre-feet)</u>
(1)	01/02/41	3.0	6.0	3.0
(2)	04/10/41	116.0	162.8	81.4
(3)	11/27/41	2.8	11.8	5.9
(4)	01/01/42	6.0	8.8	4.4
(5)	02/20/43	2.0	8.0	4.0
(6)	04/14/43	6.0	7.1	3.6
		<hr/>	<hr/>	<hr/>
	Subtotal	135.8	204.5	102.3

c. Type VII Lands

	<u>Reacquisi- tion Date</u>	<u>Irrigable Acres</u>	<u>Diversion Requirement (acre-feet)</u>	<u>Net Irrigation Requirement (acre-feet)</u>
	07/14/48	35.0	48.4	24.2
		<hr/>	<hr/>	<hr/>
	Subtotal	35.0	48.4	24.2

d. Indian-Owned Fee I Lands

	<u>Reacquisi- tion Date</u>	<u>Irrigable Acres</u>	<u>Diversion Requirement (acre-feet)</u>	<u>Net Irrigation Requirement (acre-feet)</u>
	11/27/41	23.0	87.8	43.9
		<hr/>	<hr/>	<hr/>
	Subtotal	23.0	87.8	43.9
		<hr/>	<hr/>	<hr/>
	CATEGORY TOTAL	688.4	1,326.9	663.7

28-10.b.8(a)

Differences from claims of the United States and Tribes concerning arability of adjudicated land are derived from Wyoming Exhibit WRIR SS-1002. Acreage is from Wyoming Exhibit WRIR HSO-7 Second Revised. Water requirements are from Wyoming Exhibit WRIR HFB-3. Land status of the acreage in this finding is from United States Exhibit WRIR C-317. Tracts included are listed below:

19-001C
19-005C
19-014C
20-026C
33-001C
33-002C
33-003C1
34-013C
34-014C
34-015C1
34-016C
35-003C1
35-003C2
35-004C
35-005C1
35-005C2

28-10.b.8(b)

Differences from claims of the United States and Tribes regarding arability of unadjudicated in-use land are derived from Wyoming Exhibit WRIR SS-1000. Acreage is from Wyoming Exhibit WRIR HSO-2A. Water requirements are from Wyoming Exhibit WRIR HFB-1. Land status of the acreage in this finding is derived from United States Exhibit WRIR C-317. Tracts included are listed below:

08-011
19-006
19-010
20-024
20-026
33-004
35-003
35-004
35-005
35-006
35-007
35-008
35-009
35-010

28-10.b.8(c)

Differences from claims of the United States and Tribes regarding arability of Type VII land are derived from Wyoming Exhibit WRIR SS-7 Revised. Irrigable acreage is from Wyoming Exhibit WRIR HSO-4. Water requirements are from Wyoming Exhibit WRIR HFB-2. Land status of the acreage in this finding is from United States Exhibit WRIR C-317. Tracts included are listed below:

33-005X

28-10.b.8(c)

Differences from claims of the United States and Tribes regarding arability of Type VII land are derived from Wyoming Exhibit WRIR SS-7 Revised. Irrigable acreage is from Wyoming Exhibit WRIR HSO-4. Water requirements are from Wyoming Exhibit WRIR HFB-2. Land status of the acreage in this finding is from United States Exhibit WRIR C-317. Tracts included are listed below:

33-005X

9. Land status category 08.

Of those lands found to constitute irrigable acres as a result of the "without economics" analysis previously described, the Court finds that there are no irrigable acres constituting land status category 08 lands: Unallotted, unrestored ceded land which has been reacquired in trust by individual Indians.

28-10.b.9

See United States Exhibit WRIR C-317.

10. Land status category 09.

Of those lands found to constitute irrigable acres as a result of the "without economics" analysis previously described, the Court finds that 3,998.7 acres, having a diversion requirement of 9,522.1 acre-feet and a net irrigation requirement of 4,761.2 acre-feet constitute category 09 lands: Unallotted, unrestored ceded land which has been reacquired in trust by the Tribes. Category 09 lands are summarized in the following table:

a. Adjudicated Lands

Reacqui- sition Date	Irrigable Acres	Diversion Requirement (acre-feet)	Net Irrigation Requirement (acre-feet)
(1) 09/10/40	54.0	96.2	48.1
(2) 10/23/40	59.0	101.4	50.7
(3) 11/16/40	74.0	143.0	72.5
(4) 11/22/40	75.0	121.3	60.9
(5) 11/23/40	35.0	58.6	34.3
(6) 12/14/40	32.0	62.6	31.3
(7) 12/21/40	30.0	16.2	3.1
(8) 01/02/41	137.0	249.3	124.9
(9) 01/08/41	453.0	770.0	395.0
(10) 01/10/41	38.0	20.6	10.3
(11) 03/31/41	44.0	37.0	29.5
(12) 04/10/41	94.0	151.4	90.7
(13) 07/08/41	30.0	57.6	29.3
(14) 10/14/41	45.0	38.2	44.1
(15) 11/19/41	92.0	176.6	38.3
(16) 11/27/41	40.0	152.3	75.4
(17) 12/22/41	73.0	259.2	144.6
(18) 12/23/41	10.0	0.0	0.0
(19) 01/08/42	37.0	65.8	32.9
(20) 01/30/42	140.0	201.0	100.5
(21) 02/03/42	25.0	48.0	24.0
(22) 03/30/42	138.0	239.4	119.7
(23) 04/24/42	37.0	134.8	77.4
(24) 04/29/42	13.0	15.4	7.7
(25) 07/03/42	24.0	42.3	21.4
(26) 07/30/42	3.0	11.3	3.3
(27) 01/12/43	20.0	79.2	39.6
(28) 02/20/43	55.0	148.4	74.2
(29) 04/14/43	72.0	41.3	20.9
(30) 04/28/43	106.0	201.0	100.5
(31) 11/26/43	13.0	10.6	3.3
(32) 12/19/44	20.0	49.8	24.8
(33) 02/20/46	12.0	5.4	3.2
(34) 08/22/68	30.0	93.4	46.7
Subtotal	2,246.0	4,044.4	2,022.2

b. Unadjudicated In-Use Lands

	<u>Reacqui- sition Date</u>	<u>Irrigable Acres</u>	<u>Diversion Requirement (acre-feet)</u>	<u>Net Irrigation Requirement (acre-feet)</u>
(1)	11/22/40	17.0	29.2	14.6
(2)	12/14/40	1.0	2.0	1.0
(3)	01/02/41	7.0	12.6	6.3
(4)	01/08/41	20.0	1.2	0.6
(5)	04/10/41	18.0	17.8	8.9
(6)	11/19/41	4.0	7.8	3.9
(7)	11/27/41	1.0	4.2	2.1
(8)	01/08/42	10.9	20.0	10.0
(9)	02/02/42	1.0	4.2	2.1
(10)	03/30/42	1.0	2.0	1.0
(11)	03/31/42	25.0	44.6	22.3
(12)	04/24/42	31.3	59.8	30.0
(13)	07/03/42	7.1	13.6	6.8
(14)	09/11/42	5.0	9.6	4.8
(15)	01/12/43	1.0	4.0	2.0
(16)	04/28/43	15.0	29.4	14.7
(17)	06/11/69	64.00	178.4	89.2
Subtotal		229.3	440.4	220.3

c. Type VII Lands

	<u>Reacqui- sition Date</u>	<u>Irrigable Acres</u>	<u>Diversion Requirement (acre-feet)</u>	<u>Net Irrigation Requirement (acre-feet)</u>
(1)	11/23/40	8.0	11.0	5.5
(2)	03/31/41	3.0	4.0	2.0
(3)	10/18/41	21.2	57.4	28.7
(4)	11/25/41	53.9	82.0	41.0
(5)	12/23/41	43.3	59.8	29.9
(6)	02/13/42	9.4	26.4	13.2
(7)	02/26/42	13.0	38.5	19.2
(8)	04/14/43	13.0	18.0	9.0
(9)	06/19/43	50.0	63.0	31.5
(10)	11/26/43	17.2	23.8	11.9
(11)	02/02/46	30.0	37.7	18.8
Subtotal		262.0	421.6	210.7

d. Future Projects Lands

	<u>Reacqui- sition Date</u>	<u>Irrigable Acres</u>	<u>Diversion Requirement (acre-feet)</u>	<u>Net Irrigation Requirement (acre-feet)</u>
(1)	09/11/40	184.7	663.0	331.5
(2)	11/23/40	52.0	186.0	93.0
(3)	01/07/41	20.0	71.8	35.9
(4)	01/27/41	309.0	1,109.0	554.5
(5)	05/03/41	15.0	54.0	27.0
(6)	10/14/41	20.0	71.8	35.9
(7)	01/07/42	27.0	97.0	48.5
(8)	01/08/42	4.6	17.2	8.6
(9)	01/09/42	358.3	1,340.1	670.1
(10)	02/04/42	25.0	90.0	45.0
(11)	02/26/42	227.2	849.8	425.0
(12)	12/19/42	18.6	66.0	33.0
Subtotal		1,261.4	4,615.7	2,308.0

CATEGORY TOTAL 3,998.7 9,522.1 4,761.2

28-10.b.10(a)

Differences from claims of the United States and Tribes concerning arability of adjudicated land are derived from Wyoming Exhibit WRIR SS-1002. Acreage is from Wyoming Exhibit WRIR HSO-7 Second Revised. Water requirements are from Wyoming Exhibit WRIR HFB-3. Land status of the acreage in this finding is from United States Exhibit WRIR C-317. Tracts included are listed below:

15-002C	16-043C	20-006C2
15-003C	16-044C	20-007C
15-005C	16-045C1	20-009C1
15-008C	16-046C	20-009C2
15-013C	16-047C	20-013C
15-014C	16-048C	20-014C
15-015C	16-052C2	20-011C
16-001C	16-052C	20-022C
16-002C	16-053C	20-023C
16-003C	16-057C	20-024C
16-004C	18-019C	20-025C
16-005C	18-020C	20-029C
16-010C	18-021C	20-031C1
16-012C	18-022C	20-031C2
16-013C	18-023C2	20-033C
16-014C	18-024C	20-045C
16-015C	18-025C	20-046C
16-017C	19-002C	21-001C
16-018C	19-003C	33-004C1
16-019C	19-006C	33-005C1
16-0022C1	19-007C1	33-007C
16-0022C2	19-007C2	35-002C
16-024C	19-004C	35-007C
16-025C	19-011C	35-008C
16-027C	19-012C	
16-028C	19-013C	
16-029C	20-001C	
16-030C	20-002C	
16-034C	20-003C	
16-035C	20-004C	
16-036C	20-005C	
16-037C	20-006C1	

28-10.b.10(b)

Differences from claims of the United States and Tribes regarding availability of unadjudicated in-use land are derived from Wyoming Exhibit WRIR SS-1000. Acreage is from Wyoming Exhibit WRIR HSO-2A. Water requirements are from Wyoming Exhibit WRIR HFB-1. Land status of the acreage in this finding is derived from United States Exhibit WRIR C-317. Tracts included are listed below:

08-010
09-003
15-003
15-004
15-005
15-005A
16-001
16-002
16-004
16-005
16-006
16-007
18-001
18-005
18-006
18-010
18-011
19-007
19-009
20-009
20-010
20-010A
20-010B
20-011
20-012
20-013
20-014
20-017
20-021
20-033
20-036
33-005
35-002

28-10.b.10(c)

Differences from claims of the United States and Tribes regarding arability of Type VII land are derived from Wyoming Exhibit WRIR SS-7 Revised. Irrigable acreage is from Wyoming Exhibit WRIR HSO-4. Water requirements are from Wyoming Exhibit WRIR HFB-2. Land status of the acreage in this finding is from United States Exhibit WRIR C-317. Tracts included are listed below:

15-001X
15-005X
16-001X
16-005X
16-015X
16-017X
18-004X
18-005X
19-001X
19-007X
20-001X
30-001X

28-10.b.10(d)

Differences from claims of the United States and Tribes regarding arability of proposed future project lands are derived from Wyoming Exhibit WRIR SS-255. Irrigable acreage is from Wyoming Exhibit WRIR FSO-3. Water requirements are from Wyoming Exhibit WRIR FFB-3. Land status of the acreage in this finding is derived from United States Exhibit WRIR C-317.

Tracts included are listed below:

North Crowheart Unit

Pump # 07
06
11
59
51
09

Riverton East Unit

Pump # 04
05
06
08

11. Land status category 10.

Of those lands found to constitute irrigable acres as a result of the "without economics" analysis previously described, the Court finds that 23,439.4 acres, having a diversion requirement of 81,781.5 acre-feet and a net irrigation requirement of 40,891.1 acre-feet constitute category 10 lands: land restored by Acts of Congress or Orders of the Secretary of Interior. Category 10 lands are summarized in the following tables:

a. Adjudicated Lands

<u>Restoration Date</u>	<u>Irrigable Acres</u>	<u>Diversion Requirement (acre-feet)</u>	<u>Net Irrigation Requirement (acre-feet)</u>
04/12/44	12.0	26.0	13.0
Subtotal	12.0	26.0	13.0

b. Unadjudicated In-Use Lands

	<u>Restoration Date</u>	<u>Irrigable Acres</u>	<u>Diversion Requirement (acre-feet)</u>	<u>Net Irrigation Requirement (acre-feet)</u>
(1)	04/17/40	198.0	618.9	309.5
(2)	08/28/42	105.0	64.0	32.0
(3)	04/12/44	601.0	551.9	276.0
(4)	02/02/45	8.0	16.8	8.4
(5)	10/27/48	2.0	1.2	0.6
(6)	08/15/53	28.0	96.8	48.4
(7)	07/23/74	1.0	1.2	0.6
Subtotal		943.0	1,350.8	675.5

Land Status Category 10, Irrigable Lands

c. Type VII Lands

	<u>Restora- tion Date</u>	<u>Irrigable Acres</u>	<u>Diversion Requirement (acre-feet)</u>	<u>Net Irrigation Requirement (acre-feet)</u>
(1)	11/12/42	9.0	25.2	12.6
(2)	04/12/44	137.1	243.2	121.7
		<hr/>	<hr/>	<hr/>
	Subtotal	146.1	268.4	134.3

d. Type VIII Lands

	<u>Restora- tion Date</u>	<u>Irrigable Acres</u>	<u>Diversion Requirement (acre-feet)</u>	<u>Net Irrigation Requirement (acre-feet)</u>
	04/12/44	147.0	532.2	266.1
		<hr/>	<hr/>	<hr/>
	Subtotal	147.0	532.2	266.1

e. Future Project Lands

	<u>Restora- tion Date</u>	<u>Irrigable Acres</u>	<u>Diversion Requirement (acre-feet)</u>	<u>Net Irrigation Requirement (acre-feet)</u>
(1)	04/17/40	5,669.7	20,185.0	10,092.5
(2)	04/26/43	61.1	236.9	118.4
(3)	04/12/44	9,292.2	33,480.2	16,740.3
(4)	02/02/45	20.0	72.0	36.0
(5)	08/15/53	7,143.3	25,630.0	12,815.0
		<hr/>	<hr/>	<hr/>
	Subtotal	22,191.3	79,604.1	39,802.2
		<hr/>	<hr/>	<hr/>
	CATEGORY TOTAL	23,439.4	81,781.5	40,891.1

28-10.b.11(a)

Differences from claims of the United States and Tribes concerning arability of adjudicated land are derived from Wyoming Exhibit WRIR SS-1002. Acreage is from Wyoming Exhibit WRIR HSO-7 Second Revised. Water requirements are from Wyoming Exhibit WRIR HFB-3. Land status of the acreage in this finding is from United States Exhibit WRIR C-317. Tracts included are listed below:

18-002C

28-10.b.11(b)

Differences from claims of the United States and Tribes regarding arability of unadjudicated in-use land are derived from Wyoming Exhibit WRIR SS-1000. Acreage is from Wyoming Exhibit WRIR HSO-2A. Water requirements are from Wyoming Exhibit WRIR HFB-1. Land status of the acreage in this finding is derived from United States Exhibit WRIR C-317. Tracts included are listed below:

08-006	20-022
09-014	20-023
09-015	20-024
09-023	20-025
09-027	20-027
09-028	20-028
09-029	20-029
09-030	20-030
10-001	20-032
10-002	20-034
15-006	20-035
15-009	20-037
16-008	20-039
16-010	20-040
18-003	20-041
18-004	20-042
18-006	20-043
19-003	21-002
19-004	21-003
19-011	33-001
19-013	33-004
19-014	33-005
19-016	35-005
19-017	
19-019	
19-021	
19-026	
19-028	
19-029	
20-003	
20-005	
20-012	
20-015	
20-016	

28-10.b.11(c)

Differences from claims of the United States and Tribes regarding arability of Type VII land are derived from Wyoming Exhibit WRIR SS-7 Revised. Irrigable acreage is from Wyoming Exhibit WRIR HSO-4. Water requirements are from Wyoming Exhibit WRIR HFB-2. Land status of the acreage in this finding is from United States Exhibit WRIR C-317. Tracts included are listed below:

09-001X
09-006X
15-001X
15-005X
16-005X
16-006X
16-015X
19-001X
20-011X
20-012X
20-013X
20-017X
30-001X

28-10.b.11(d)

Differences from claims of the United States and Tribes regarding arability of Type VIII land are derived from Wyoming Exhibit WRIR SS-8 Revised. Irrigable acreage is from Wyoming Exhibit WRIR FSO-14. Water requirements are from Wyoming Exhibit WRIR FFB-1. Land status of the acreage in this finding is derived from United States Exhibit WRIR C-317. Tracts included are listed below:

40-001X

28-10.b.11(e)

Differences from claims of the United States and Tribes regarding arability of proposed future project lands are derived from Wyoming Exhibit WRIR SS-255. Irrigable acreage is from Wyoming Exhibit WRIR FSO-3. Water requirements are from Wyoming Exhibit WRIR FFB-3. Land status of the acreage in this finding is derived from United States Exhibit WRIR C-317.

Tracts included are listed below:

North Crowheart Unit	North Crowheart Unit	Riverton East Unit
Pump # 001	Pump # 042	Pump # 001
002	043	002
003	044	003
007	045	004
008	046	005
009	047	006
010	048	008
011	049	
012	050	Stagner Ridge Unit
013	051	Pump # 003
014	052	
015	053	
016	055	
017	056	
018	057	
019	058	
020	059	
022		
023		
024		
025		
026		
028		
029		
030		
031		
032		
033		
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037		
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039		
040		

12. Land status category 11.

Of those lands found to constitute irrigable acres as a result of the "without economics" analysis previously described, the Court finds that 2,818.0 acres, having a diversion requirement of 10,310.5 acre-feet and a net irrigation requirement of 5,155.3 acre-feet, constitute category 11 lands: land claimed by the Tribes to the Indian-owned fee land in the ceded portion for which no evidence to determine current ownership has been introduced. Category 11 lands are summarized in the following table:

<u>Land Type</u>	<u>Irrigable Acres</u>	<u>Diversion Requirement Acre-Feet</u>	<u>Net Irrigation Requirement Acre-Feet</u>
(a) Indian-Owned Fee "I"	2,818.0	10,310.5	5,155.3
CATEGORY TOTAL	2,818.0	10,310.5	5,155.3

28-10.b.12(a)

Differences from claims of the United States and Tribes concerning the arability of Indian-owned fee "I" land are derived from Wyoming Exhibit WRIR SS-1003. Irrigated acreage is from Wyoming Exhibit WRIR HSO-10. Water requirements are from Wyoming Exhibit WRIR HFB-4. Land status of the acreage in this finding is from United States Exhibit WRIR C-317, Tribes Exhibit KH-12, and Wyoming Exhibit WRIR TH-19. Tracts included are listed below:

05-021H	08-047H
05-039H	08-105H
05-040H	08-108H
05-084H	09-002H
05-090H	09-052H
08-006H	09-063H
08-010H	09-065H
08-011H	19-008H
08-029H	19-030H
08-037H	19-125H
08-038H	20-019H
08-045H	22-048H
	23-094H
	34-100H
	36-099H

13. Land status category 12.

Of those lands found to constitute irrigable acres as a result of the "without economics" analysis previously described, the Court finds that 1,864.3 acres, having a diversion requirement of 6,561.9 acre-feet and a net irrigation requirement of 3,281.2 acre-feet, constitute category 12 lands: land claimed by the United States and Tribes to be in trust or Indian-owned fee land in the diminished portion for which no evidence to determine current ownership has been introduced. Category 12 lands are summarized in the following table:

<u>Land Type</u>	<u>Irrigable Acres</u>	<u>Diversion Requirement Acre-Feet</u>	<u>Net Irrigation Requirement Acre-Feet</u>
(a) Adjudicated	44.0	84.0	42.0
(b) Unadjudicated In-Use	90.2	214.5	107.3
(c) Type VII	7.2	20.2	10.1
(d) Indian-Owned Fee "I"	1,442.0	5,190.9	2,595.6
(e) Future Projects	89.9	402.9	201.5
(f) Indian-Owned Fee "p"	191.0	649.4	324.7
CATEGORY TOTAL	1,864.3	6,561.9	3,281.2

28-10.b.13(a)

Differences from claims of the United States and Tribes concerning arability of adjudicated land are derived from Wyoming Exhibit WRIR SS-1002. Acreage is from Wyoming Exhibit WRIR HSO-7 Second Revised. Water requirements are from Wyoming Exhibit WRIR HFB-3. Land status of the acreage in this finding is from United States Exhibit WRIR C-317. Tracts included are listed below:

02-005C
22-004C

28-10.b.13(b)

Differences from claims of the United States and Tribes regarding arability of unadjudicated in-use land are derived from Wyoming Exhibit WRIR SS-1000. Acreage is from Wyoming Exhibit WRIR HSO-2A. Water requirements are from Wyoming Exhibit WRIR HFB-1. Land status of the acreage in this finding is derived from United States Exhibit WRIR C-317. Tracts included are listed below:

01-065
22-020
23-015

28-10.b.13(c)

Differences from claims of the United States and Tribes regarding arability of Type VII land are derived from Wyoming Exhibit WRIR SS-7 Revised. Irrigable acreage is from Wyoming Exhibit WRIR HSO-4. Water requirements are from Wyoming Exhibit WRIR HFB-2. Land status of the acreage in this finding is from United States Exhibit WRIR C-317. Tracts included are listed below:

05-007X

28-10.b.13 (d)

Differences from claims of the United States and Tribes concerning the arability of Indian-owned fee "I" land are derived from Wyoming Exhibit WRIR SS-1003. Irrigated acreage is from Wyoming Exhibit WRIR HSO-10. Water requirements are from Wyoming Exhibit WRIR HFB-4. Land status of the acreage in this finding is from United States Exhibit WRIR C-317, Tribes Exhibit KH-12, and Wyoming Exhibit WRIR TH-19. Tracts included are listed below:

01-003H	04-018H
01-051H	04-087H
01-056H	04-088H
01-072H	05-024H
01-082H	05-062H
01-107H	08-046H
01-113H	12-102H
01-117H	15-110H
02-001H	22-023H
02-058H	22-049H
03-026H	22-050H
03-070H	22-080H
03-071H	22-093H
03-073H	25-119H
03-076H	

28-10.b.13(e)

Differences from claims of the United States and Tribes regarding arability of proposed future project lands are derived from Wyoming Exhibit WRIR SS-255. Irrigable acreage is from Wyoming Exhibit WRIR FSO-3. Water requirements are from Wyoming Exhibit WRIR FFB-3. Land status of the acreage in this finding is derived from United States Exhibit WRIR C-317.

Tracts included are listed below:

South Crowheart Unit

Pump # 1

28-4-b-13(f)

Differences from claims of the United States and Tribes regarding arability of Indian-owned fee "P" land are derived from Wyoming Exhibit WRIR SS-H. Irrigable acreage is calculated from Tribes Exhibit 13. Water requirements are from Wyoming Exhibit WRIR FFB-3. Land status of the acreage in this finding is derived from United States Exhibit WRIR C-317, Tribes Exhibit KH-12, and Wyoming Exhibit WRIR TH-19. Tracts included are listed below:

52-069H
52-096H
52-097H

14. Land status category 13.

Of those lands found to constitute irrigable acres as a result of the "without economics" analysis previously described, the Court finds that 42.2 acres, having a diversion requirement of 82 acre-feet and a net irrigation requirement of 41 acre-feet, constitute category 13 lands: lands in the diminished portion of the reservation which have been returned to tribal trust from Indian ownership. Category 13 lands are summarized in the following table:

a. Adjudicated Lands

<u>Reacqui-</u> <u>sition</u> <u>Date</u>	<u>Irrigable</u> <u>Acres</u>	<u>Diversion</u> <u>Requirement</u> <u>(acre-feet)</u>	<u>Net</u> <u>Irrigation</u> <u>Requirement</u> <u>(acre-feet)</u>
12/20/41	15.0	38.8	19.4
Subtotal	15.0	38.8	19.4

b. Unadjudicated In-Use Lands

<u>Reacqui-</u> <u>sition</u> <u>Date</u>	<u>Irrigable</u> <u>Acres</u>	<u>Diversion</u> <u>Requirement</u> <u>(acre-feet)</u>	<u>Net</u> <u>Irrigation</u> <u>Requirement</u> <u>(acre-feet)</u>
12/20/41	8.0	28.8	14.4
08/25/69	8.0	0.0	0.0
10/12/77	1.0	3.6	1.8
01/18/80	10.2	10.8	5.4
Subtotal	27.2	43.2	21.6

CATEGORY TOTAL	42.2	82.0	41.0
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28-10.b.14(a)

Differences from claims of the United States and Tribes concerning arability of adjudicated land are derived from Wyoming Exhibit WRIR SS-1002. Acreage is from Wyoming Exhibit WRIR HSO-7 Second Revised. Water requirements are from Wyoming Exhibit WRIR HFB-3. Land status of the acreage in this finding is from United States Exhibit WRIR C-317. Tracts included are listed below:

14-001C

28-10.b.14(b)

Differences from claims of the United States and Tribes regarding availability of unadjudicated in-use land are derived from Wyoming Exhibit WRIR SS-1000. Acreage is from Wyoming Exhibit WRIR HSO-2A. Water requirements are from Wyoming Exhibit WRIR HFB-1. Land status of the acreage in this finding is derived from United States Exhibit WRIR C-317. Tracts included are listed below:

01-014
01-018
05-051
14-002

15. Land status category 14.

Of those lands found to constitute irrigable acres as a result of the "without economics" analysis previously described, the Court finds that 99.6 acres, having a diversion requirement of 358.9 acre-feet and a net irrigation requirement of 179.5 acre-feet, constitute category 14 lands: land in the diminished portion of the reservation which has been conveyed to non-Indian ownership and remains non-Indian. Category 14 lands are summarized in the following table:

<u>Land Type</u>	<u>Irrigable Acres</u>	<u>Diversion Requirement Acre-Feet</u>	<u>Net Irrigation Requirement Acre-Feet</u>
(a) Unadjudicated In-Use	79.8	297.2	148.6
(b) Type VII	10.0	25.0	12.5
(c) Type VIII	9.8	36.7	18.4
CATEGORY TOTAL	99.6	358.9	179.5

28-10.b.15(a)

Differences from claims of the United States and Tribes regarding arability of unadjudicated in-use land are derived from Wyoming Exhibit WRIR SS-1000. Acreage is from Wyoming Exhibit WRIR HSO-2A. Water requirements are from Wyoming Exhibit WRIR HFB-1. Land status of the acreage in this finding is derived from United States Exhibit WRIR C-317. Tracts included are listed below:

02-011
02-069
05-053

28-10.b.15(b)

Differences from claims of the United States and Tribes regarding arability of Type VII land are derived from Wyoming Exhibit WRIR SS-7 Revised. Irrigable acreage is from Wyoming Exhibit WRIR HSO-4. Water requirements are from Wyoming Exhibit WRIR HFB-2. Land status of the acreage in this finding is from United States Exhibit WRIR C-317. Tracts included are listed below:

01-048X

28-10.b.15(c)

Differences from claims of the United States and Tribes regarding arability of Type VIII land are derived from Wyoming Exhibit WRIR SS-8 Revised. Irrigable acreage is from Wyoming Exhibit WRIR FSO-14. Water requirements are from Wyoming Exhibit WRIR FFB-1. Land status of the acreage in this finding is derived from United States Exhibit WRIR C-317. Tracts included are listed below:

06-007X

16. Land status category 15.

Of those lands found to constitute irrigable acres as a result of the "without economics" analysis previously described, the Court finds that 289.7 acres, having a diversion requirement of 792.1 acre-feet and a net irrigation requirement of 396.1 acre-feet constitute category 15 lands: land in the diminished portion of the reservation conveyed to non-Indian ownership which has been reacquired by individual Indians. Category 15 lands are summarized in the following table:

a. Adjudicated Lands

	<u>Reacqui- sition Date</u>	<u>Irrigable Acres</u>	<u>Diversion Requirement (acre-feet)</u>	<u>Net Irrigation Requirement (acre-feet)</u>
(1)	02/26/41	45.0	159.4	79.7
(2)	05/24/41	40.0	141.6	70.8
(3)	02/12/48	7.3	25.8	12.9
(4)	03/13/51	22.0	12.8	6.4
		<hr/>	<hr/>	<hr/>
	Subtotal	114.3	339.6	169.8

Land Status Category 15, Irrigable Lands

b. Unadjudicated In-Use Lands

	<u>Reacqui- sition Date</u>	<u>Irrigable Acres</u>	<u>Diversion Requirement (acre-feet)</u>	<u>Net Irrigation Requirement (acre-feet)</u>
(1)	10/23/40	19.0	0.0*	0.0*
(2)	12/02/40	12.0	50.2	25.1
(3)	02/26/41	64.4	255.0	127.5
(4)	05/07/41	41.0	43.4	21.7
(5)	02/12/48	3.0	3.2	1.6
(6)	02/13/48	12.0	25.3	12.7
	Subtotal	151.4	377.1	188.6

* Type V lands

c. Type VII Lands

	<u>Reacqui- sition Date</u>	<u>Irrigable Acres</u>	<u>Diversion Requirement (acre-feet)</u>	<u>Net Irrigation Requirement (acre-feet)</u>
	05/10/48	11.0	27.6	13.8
	Subtotal	11.0	27.6	13.8

d. Type VIII Lands

	<u>Reacqui- sition Date</u>	<u>Irrigable Acres</u>	<u>Diversion Requirement (acre-feet)</u>	<u>Net Irrigation Requirement (acre-feet)</u>
	12/02/40	13.0	47.8	23.9
	Subtotal	13.0	47.8	23.9
CATEGORY TOTAL		289.7	792.1	396.1

28-10.b.16(a)

Differences from claims of the United States and Tribes concerning arability of adjudicated land are derived from Wyoming Exhibit WRIR SS-1002. Acreage is from Wyoming Exhibit WRIR HSO-7 Second Revised. Water requirements are from Wyoming Exhibit WRIR HFB-3. Land status of the acreage in this finding is from United States Exhibit WRIR C-317. Tracts included are listed below:

01-004C
01-005C1
02-006C1
25-001C

28-10.b.16(b)

Differences from claims of the United States and Tribes regarding arability of unadjudicated in-use land are derived from Wyoming Exhibit WRIR SS-1000. Acreage is from Wyoming Exhibit WRIR HSO-2A. Water requirements are from Wyoming Exhibit WRIR HFB-1. Land status of the acreage in this finding is derived from United States Exhibit WRIR C-317. Tracts included are listed below:

01-034
01-053
06-001
05-058
23-017
04-007

28-10.b.16(c)

Differences from claims of the United States and Tribes regarding arability of Type VII land are derived from Wyoming Exhibit WRIR SS-7 Revised. Irrigable acreage is from Wyoming Exhibit WRIR HSO-4. Water requirements are from Wyoming Exhibit WRIR HFB-2. Land status of the acreage in this finding is from United States Exhibit WRIR C-317. Tracts included are listed below:

02-011X

28-10.b.16(d)

Differences from claims of the United States and Tribes regarding arability of Type VIII land are derived from Wyoming Exhibit WRIR SS-8 Revised. Irrigable acreage is from Wyoming Exhibit WRIR FSO-14. Water requirements are from Wyoming Exhibit WRIR FFB-1. Land status of the acreage in this finding is derived from United States Exhibit WRIR C-317. Tracts included are listed below:

06-001X

17. Land status category 16.

Of those lands found to constitute irrigable acres as a result of the "without economics" analysis previously described, the Court finds that 842.5 acres, having a diversion requirement of 2,331.3 acre-feet and a net irrigation requirement of 1,166.0 acre-feet, constitute category 16 lands: lands in the diminished portion of the reservation conveyed to non-Indian ownership which has been reacquired by the Tribes in trust. Category 16 lands are summarized in the following table:

a. Adjudicated Lands

	<u>Reacquisition Date</u>	<u>Irrigable Acres</u>	<u>Diversion Requirement (acre-feet)</u>	<u>Net Irrigation Requirement (acre-feet)</u>
(1)	12/20/41	117.0	463.4	231.7
(2)	02/20/42	133.0	290.4	145.2
(3)	03/07/42	30.0	106.2	53.1
(4)	05/23/46	19.0	38.4	14.3
(5)	06/26/79	131.0	383.2	191.6
	Subtotal	430.0	1,271.6	635.9

b. Unadjudicated In-Use Lands

	<u>Reacquisition Date</u>	<u>Irrigable Acres</u>	<u>Diversion Requirement (acre-feet)</u>	<u>Net Irrigation Requirement (acre-feet)</u>
(1)	12/20/41	42.0	166.3	33.2
(2)	02/20/42	166.6	379.7	199.3
(3)	03/07/42	25.0	8.1	4.1
(4)	05/23/42	1.0	2.0	1.0
(5)	06/17/43	1.0	4.2	2.1
(6)	03/08/45	42.9	136.8	68.5
(7)	02/20/46	78.0	169.0	84.5
(8)	03/06/60	3.0	31.2	15.9
(9)	06/26/79	36.0	126.2	63.1
	Subtotal	400.5	1,024.2	512.3

c. TYPE VI: Lands

	<u>Reacquisition Date</u>	<u>Irrigable Acres</u>	<u>Diversion Requirement (acre-feet)</u>	<u>Net Irrigation Requirement (acre-feet)</u>
	06/17/43	12.0	39.6	17.8
	Subtotal	12.0	39.6	17.8
	TOTAL	842.5	2,331.3	1,166.0

28-10.b.17(a)

Differences from claims of the United States and Tribes concerning arability of adjudicated land are derived from Wyoming Exhibit WRIR SS-1002. Acreage is from Wyoming Exhibit WRIR HSO-7 Second Revised. Water requirements are from Wyoming Exhibit WRIR HFB-3. Land status of the acreage in this finding is from United States Exhibit WRIR C-317. Tracts included are listed below:

5-1CD
5-2CM
14-5C1
14-2C
14-3C1
14-4C
14-5C2
22-2C
25-2C
25-4C
31-3C
31-4C

28-10.b.17(b)

Differences from claims of the United States and Tribes regarding arability of unadjudicated in-use land are derived from Wyoming Exhibit WRIR SS-1000. Acreage is from Wyoming Exhibit WRIR HSO-2A. Water requirements are from Wyoming Exhibit WRIR HFB-1. Land status of the acreage in this finding is derived from United States Exhibit WRIR C-317. Tracts included are listed below:

1-110
1-112
2-72
2-82
2-100
3-26
5-44
5-52
5-53
12-10
14-12
14-13
22-2
22-6
22-7
25-5
31-7
31-8
31-9
31-10

28-10.b.17(c)

Differences from claims of the United States and Tribes regarding arability of Type VII land are derived from Wyoming Exhibit WRIR SS-7 Revised. Irrigable acreage is from Wyoming Exhibit WRIR HSO-4. Water requirements are from Wyoming Exhibit WRIR HFB-2. Land status of the acreage in this finding is from United States Exhibit WRIR C-317. Tracts included are listed below:

03-017X

28-11 Detailed land status and data analysis - PIA with economic analysis (7-1/8%).

A. Same definition of categories and types.

The land status categories referred to herein are identical to those set forth in Finding of Fact 28-4, supra; the broad land types used herein are identical to those contained in Finding of Fact 28-5, supra.

B. Specific analysis, by land category.

Each land status category 00 through 16 is discussed in detail in 28-11.B.1 through 17, infra.

1. Land status category 00.

Of those lands found to constitute PIA as a result of the "with economics" (7-1/8%) analysis, described in Finding of Fact 28-2.a., supra, the Court finds that 817.6 acres, having a diversion requirement of 2,501.7 acre-feet and a net irrigation requirement of 1,250.9 acre-feet, constitute category 00 lands: Unallotted trust land which has been in continuous trust since July 3, 1868, for which a reserved right has been granted herein with a priority date of July 3, 1868. Category 00 lands are summarized in the following table:

<u>Land Type</u>	<u>PIA Acres</u>	<u>Diversion Requirement Acre-Feet</u>	<u>Net Irrigation Requirement Acre-Feet</u>
(a) Unadjudicated In-Use	469.0	1,592.6	796.3
(b) Type VII	348.6	909.1	454.6
CATEGORY TOTAL	817.6	2,501.7	1,250.9

28-11.b.1(a)

Differences from claims of the United States and Tribes regarding availability of unadjudicated in-use land are derived from Wyoming Exhibit WRIR SS-1000. Acreage is from Wyoming Exhibit WRIR HSO-2A. Water requirements are from Wyoming Exhibit WRIR HFB-1. Land status of the acreage in this finding is derived from United States Exhibit WRIR C-317. Tracts included are listed below:

1-019
1-020
1-021
1-078
1-079
1-081
1-082
1-089
1-091
1-116
1-117
1-126
1-155
1-160
2-069
2-109
4-004
5-026
11-002
11-004
11-005
11-006
11-007
12-002
12-003
14-006
27-007
29-001
29-002
29-004

28-11.b.1(b)

Differences from claims of the United States and Tribes concerning arability of Type VII land are derived from Wyoming Exhibit WRIR SS-7 Revised. Irrigable acreage is from Wyoming Exhibit WRIR HSO-4. Economic feasibility is from Wyoming Exhibit WRIR EJ-16. Water requirements are from Wyoming Exhibit WRIR HFB-2. Land status of the acreage in this finding is from United States Exhibit WRIR C-317. Tracts included are listed below:

1-16X
1-49X
1-53X
1-56X
5-20X
5-39X
19-4X
22-14X

2. Land status category 01.

Of those lands found to constitute PIA as a result of the "with economics" (7-1/8%) analysis, described in Finding of Fact 28-2.a., supra, the Court finds that 18,105.9 acres, having a diversion requirement of 56,746.6 acre-feet and a net irrigation requirement of 28,368.2 acre-feet, constitute category 01 lands: Land which has been in trust and individual Indian ownership continuously since July 3, 1868. This category includes allotted lands but does not include land in the diminished portion of the reservation which has been returned to tribal trust from ownership by individual Indians. Category 01 lands are summarized in the following table:

	<u>Land Type</u>	<u>PIA Acres</u>	<u>Diversion Requirement Acre-Feet</u>	<u>Net Irrigation Requirement Acre-Feet</u>
(a)	Adjudicated	817.7	2,670.2	1,335.2
(b)	Unadjudicated In-Use	14,233.9	45,451.8	22,720.5
(c)	Type VII	2,291.3	5,995.0	2,997.5
(d)	Indian-Owned Fee "I"	763.0	2,629.6	1,315.0
CATEGORY TOTAL		18,105.9	56,746.6	28,368.2

28-11.b.2.(a)

Differences from claims of the United States and Tribes concerning arability of adjudicated land are derived from Wyoming Exhibit WRIR SS-1002. Acreage is from Wyoming Exhibit WRIR HSO-7 Second Revised. Water requirements are from Wyoming Exhibit WRIR HFB-3. Land status of the acreage in this finding is from United States Exhibit WRIR C-317. Tracts included are listed below:

1-001C	22-005C
1-002C	23-001C
1-003C	23-002C
1-004C	25-002C
2-007C1	25-003C
5-001CW	25-004C
5-003C1	31-001C
5-004CM	31-002C
14-003C2	32-001C
22-001C	
22-002C	
22-003C	

28-11.b.2.(b)

Differences from claims of the United States and Tribes regarding arability of unadjudicated in-use land are derived from Wyoming Exhibit WRIR SS-1000. Acreage is from Wyoming Exhibit WRIR HSO-2A. Water requirements are from Wyoming Exhibit WRIR HFB-1. Land status of the acreage in this finding is derived from United States Exhibit WRIR C-317. Tracts included are listed below:

1-003	1-051	1-109	1-152	2-027	5-054	4-011	27-012
1-005	1-052	1-110	1-153	2-028	5-055	6-012	27-016
1-006	1-053	1-112	1-154	2-029	5-058	7-001	27-003
1-010	1-056	1-114	1-155	2-031	5-060	7-002	27-004
1-012	1-057	1-115	1-158	2-034	5-061	7-009	27-005
1-014	1-064	1-116	1-159	2-036	5-063	7-011	27-006
1-015	1-068	1-117	1-160	2-037	5-068	7-012	27-007
1-018	1-072	1-120	1-161	2-038	5-070	7-014	27-007
1-019	1-074	1-122	1-162	2-039	5-071	7-015	27-008
1-020	1-077	1-123	2-002	2-041	5-072	7-017	27-009
1-021	1-078	1-124	2-005	2-042	5-073	11-002	27-010
1-026	1-079	1-126	2-006	2-043	5-074	11-003	27-011
1-027	1-081	1-130	2-007	2-044	5-074	11-004	27-013
1-029	1-082	1-132	2-009	2-047	5-075	11-005	27-014
1-033	1-087	1-135	2-010	2-047	5-076	11-006	27-015
1-035	1-089	1-136	2-011	2-050	5-077	11-007	27-001
1-038	1-091	1-138	2-012	2-051	5-078	11-008	27-002
1-039	1-092	1-143	2-013	2-053	6-001	11-009	27-007
1-042	1-093	1-144	2-014	2-054	6-002	11-010	27-008
1-043	1-094	1-145	2-015	2-055	6-003	11-013	27-001
1-044	1-095	1-146	2-016	2-056	6-004	11-014	27-003
1-046	1-096	1-146A	2-018	2-057	6-005	11-015	27-004
1-047	1-101	1-148	2-020	2-058	6-006	11-016	27-006
1-048	1-102	1-149A	2-024	2-060	6-007	11-017	27-007
1-050	1-106	1-150	2-025	2-063	6-008	12-001	27-008
	1-107	1-151	2-026	2-064			
2-065	2-105	3-019	4-003	5-008	12-002	22-009	
2-066	2-107	3-020	4-004	5-016	12-003	22-010	27-009
2-067	2-109	3-023	4-005	5-017	12-005	22-011	27-010
2-0670	2-110	3-024	4-007	5-018	12-006	22-012	27-011
2-069	2-111	3-025	4-009	5-019	12-007	22-013	
2-072	2-112	3-026	4-010	5-019	12-008	22-015	
2-073	2-113	3-029	4-011	5-020	12-009	22-016	27-012
2-074	2-114	3-030	4-012	5-025	12-010	22-017	27-013
2-075	2-115	3-031	4-016	5-026	13-003	22-018	28-004
2-076	2-116	3-032	4-018	5-027	13-005	22-019	
2-077	2-117	3-033	4-018	5-028	14-002	22-021	
2-079	2-118	3-034	4-021	5-029	14-003	22-022	
2-080	3-001	3-035	4-022	5-030	14-004	22-023	29-001
2-081	3-004	3-042	4-023	5-031	14-005	22-025	29-002
2-087	3-005	3-045	4-024	5-032	14-006	22-026	29-003
2-091	3-006	3-046	4-025	5-033	14-007	22-027	
2-093	3-007	3-047	4-026	5-034	14-008	22-027	
2-096	3-009	3-049	5-001	5-035	14-009	22-030	29-004
2-097	3-010	3-050	5-002	5-037	14-010	22-031	31-003
2-098	3-011	3-052	5-003	5-038	14-011	22-032	31-004
2-099	3-012	3-053	5-004	5-039	22-002	23-001	
2-100	3-013	3-054	5-006	5-039	22-003	23-002	
2-101	3-014	3-058	5-008	5-040	22-004	23-004	
2-103	3-015	4-001	5-009	5-042	22-004	23-005	31-005
2-104	3-017	4-002	5-014	5-043	22-005	23-006	32-002
			5-015	5-046	22-008	23-007	32-003
				5-048		23-008	
				5-049		23-009	
						24-010	

28-11.b.2.(c)

Differences from claims of the United States and Tribes concerning arability of Type VII land are derived from Wyoming Exhibit WRIR SS-7 Revised. Irrigable acreage is from Wyoming Exhibit WRIR HSO-4. Economic feasibility is from Wyoming Exhibit WRIR EJ-16. Water requirements are from Wyoming Exhibit WRIR HFB-2. Land status of the acreage in this finding is from United States Exhibit WRIR C-317. Tracts included are listed below:

1-016X	5-020X
1-046X	5-021X
1-048X	5-023X
1-049X	5-032X
1-053X	5-033X
1-055X	5-039X
1-056X	5-040X
1-063X	6-004X
2-006X	7-001X
2-007X	7-002X
2-008X	7-004X
2-009X	7-005X
2-010X	7-006X
2-012X	7-015X
2-013X	13-001X
2-015X	14-003X
2-017X	14-008X
2-027X	14-009X
2-029X	19-004X
2-030X	22-008X
2-048X	22-014X
2-049X	24-016X
2-051X	

28-11.b.2.(d)

Differences from claims of the United States and Tribes concerning the arability of Indian-owned fee "I" land are derived from Wyoming Exhibit WRIR SS-1003. Irrigated acreage is from Wyoming Exhibit WRIR HSO-10. Water requirements are from Wyoming Exhibit WRIR HFB-4. Land status of the acreage in this finding is from United States Exhibit WRIR C-317, Tribes Exhibit KH-12, and Wyoming Exhibit WRIR TH-19. Tracts included are listed below:

1-025H
1-051H
1-082H
1-115H
2-118H
3-076H
4-018H
4-088H
5-020H
5-077H
5-078H
5-079H
5-086H
5-121H
8-044H
12-102H
15-110H
19-030H
22-111H

3. Land status category 02.

Of those lands found to constitute PIA as a result of the "with economics" (7-1/8%) analysis, described in Finding of Fact 28-2.a., supra, the Court finds that there is no PIA constituting land status category 02 lands: Unallotted, unrestored ceded land which has been reacquired in trust by individual Indians. .

28-11.b.3

See United States Exhibit WRIR C-317.

4. Land status category 03.

Of those lands found to constitute PIA as a result of the "with economics" (7-1/8%) analysis, described in Finding of Fact 28-2.a., supra, the Court finds that there is no PIA constituting land status category 03 lands: Allotted, unrestored land in the ceded portion of the Reservation for which a trust patent was issued prior to March 3, 1905.

28-11.b.4

See United States Exhibit WRIR C-317.

5. Land status category 04.

Of those lands found to constitute PIA as a result of the "with economics" (7-1/8%) analysis, described in Finding of Fact 28-2.a., supra, the Court finds that 1,598.7 acres, having a diversion requirement of 4,800.0 a.f. and a net irrigation requirement of 2,400.2 a.f., constitute category 04 lands: Allotted, unrestored lands in the ceded portion of the restoration for which a trust patent was issued on or after March 3, 1905. Category 04 lands are summarized in the following table:

a. <u>Adjudicated Lands</u>				
	<u>Patent Date</u>	<u>PIA Acres</u>	<u>Diversion Requirement (acre-feet)</u>	<u>Net Irrigation Requirement (acre-feet)</u>
(1)	05/06/07	72.0	174.7	37.4
(2)	05/20/07	16.0	9.2	4.6
	<u>Subtotal</u>	<u>88.0</u>	<u>183.9</u>	<u>42.0</u>
b. <u>Unadjudicated In-Use Lands</u>				
	<u>Patent Date</u>	<u>PIA Acres</u>	<u>Diversion Requirement (acre-feet)</u>	<u>Net Irrigation Requirement (acre-feet)</u>
(1)	05/06/07	1,366.0	4,288.3	2,114.4
(2)	05/16/07	24.0	30.2	15.1
	<u>Subtotal</u>	<u>1,390.0</u>	<u>4,318.5</u>	<u>2,129.5</u>
c. <u>Type VII Lands</u>				
	<u>Patent Date</u>	<u>PIA Acres</u>	<u>Diversion Requirement (acre-feet)</u>	<u>Net Irrigation Requirement (acre-feet)</u>
	05/06/07	120.7	357.4	173.7
	<u>Subtotal</u>	<u>120.7</u>	<u>357.4</u>	<u>173.7</u>
CATEGORY TOTAL		1,598.7	4,800.0	2,400.2

28-11.b.5.(a)

Differences from claims of the United States and Tribes concerning arability of adjudicated land are derived from Wyoming Exhibit WRIR SS-1002. Acreage is from Wyoming Exhibit WRIR HSO-7 Second Revised. Water requirements are from Wyoming Exhibit WRIR HFB-3. Land status of the acreage in this finding is from United States Exhibit WRIR C-317. Tracts included are listed below:

16-049C
19-001C
19-012C

28-11.b.5.(b)

Differences from claims of the United States and Tribes regarding arability of unadjudicated in-use land are derived from Wyoming Exhibit WRIR SS-1000. Acreage is from Wyoming Exhibit WRIR HSO-2A. Water requirements are from Wyoming Exhibit WRIR HFB-1. Land status of the acreage in this finding is derived from United States Exhibit WRIR C-317. Tracts included are listed below:

08-001
08-002
08-003
08-004
08-005
09-002
09-004
09-005
09-006
09-007
09-009
09-010
09-011
09-012
09-013
09-016
09-018
09-019
09-021
19-010
19-011
19-022
19-023
19-024
19-025
19-027
24-001
32-005

28-11.b.5.(c)

Differences from claims of the United States and Tribes concerning arability of Type VII land are derived from Wyoming Exhibit WRIR SS-7 Revised. Irrigable acreage is from Wyoming Exhibit WRIR HSO-4. Economic feasibility is from Wyoming Exhibit WRIR EJ-16. Water requirements are from Wyoming Exhibit WRIR HFB-2. Land status of the acreage in this finding is from United States Exhibit WRIR C-317. Tracts included are listed below:

09-002X
24-014X
24-015X

6. Land status category 05.

Of those lands found to constitute PIA as a result of the "with economics" (7-1/8%) analysis, described in Finding of Fact 28-2.a., supra, the Court finds that 32 acres, having a diversion requirement of 128.4 a.f. and a net irrigation requirement of 64.2 a.f., constitute category 05 lands: Unrestored land in the ceded portion of the Reservation for which no evidence as to ownership has been introduced but which has been claimed to be trust lands by the United States and Tribes. Category 05 lands are summarized in the following table:

<u>Land Type</u>	<u>PIA Acres</u>	<u>Diversion Requirement Acre-Feet</u>	<u>Net Irrigation Requirement Acre-Feet</u>
(a) Unadjudicated In-Use	32.0	128.4	64.2
CATEGORY TOTAL	32.0	128.4	64.2

28-11.b.6(a)

Differences from claims of the United States and Tribes regarding arability of unadjudicated in-use land are derived from Wyoming Exhibit WRIR SS-1000. Acreage is from Wyoming Exhibit WRIR SHO-2A. Water requirements are from Wyoming Exhibit WRIR HFB-1. Land status of the acreage in this finding is derived from United States Exhibit WRIR C-317. Tracts included are listed below:

08-007
08-008
08-009
19-012

7. Land status category 06.

Of those lands found to constitute PIA as a result of the "with economics" (7-1/8%) analysis, described in Finding of Fact 28-2.a., supra, the Court finds that 11 acres, having a diversion requirement of 6 a.f. and a net irrigation requirement of 3 a.f., constitute category 06 lands: Unrestored lands in the ceded land which has been reacquired in trust by individual Indians. Category 06 lands are summarized in the following table:

a. Unadjudicated In-Use Lands

<u>Reacquis- ition Date</u>	<u>PIA Acres</u>	<u>Diversion Requirement (acre-feet)</u>	<u>Net Irrigation Requirement (acre-feet)</u>
08/28/36	11.0	6.0	3.0
CATEGORY TOTAL	11.0	6.0	3.0

28-11.b.7.(a)

Differences from claims of the United States and Tribes regarding availability of unadjudicated in-use land are derived from Wyoming Exhibit WRIR SS-1000. Acreage is from Wyoming Exhibit WRIR HSO-2A. Water requirements are from Wyoming Exhibit WRIR HFB-1. Land status of the acreage in this finding is derived from United States Exhibit WRIR C-317. Tracts included are listed below:

20-014

8. Land status category 07.

Of those lands found to constitute PIA as a result of the "with economics" (7-1/8%) analysis, described in Finding of Fact 28-2.a., supra, the Court finds that 653.4 acres, having a diversion requirement of 1,278.5 acre-feet and a net irrigation requirement of 639.5 acre-feet, constitute category 07 lands: Unrestored lands in the ceded land which has been reacquired in trust by the Tribes. Category 07 lands are summarized in the following table:

a. Adjudicated Lands

	Reacqui- sition Date	PIA Acres	Diversion Requirement (acre-feet)	Net Irrigation Requirement (acre-feet)
(1)	01/02/41	25.0	49.0	24.5
(2)	04/10/41	176.0	319.3	159.7
(3)	11/27/41	17.0	141.3	70.7
(4)	02/02/42	35.0	138.6	69.3
(5)	04/25/42	40.0	23.2	11.6
(6)	06/15/42	21.0	38.4	19.2
(7)	07/23/42	3.0	3.5	1.8
(8)	09/11/42	145.6	255.9	128.0
(9)	02/20/43	12.0	17.0	9.5
	Subtotal	494.6	986.2	493.1

b. Unadjudicated In-Use Lands

	Reacqui- sition Date	PIA Acres	Diversion Requirement (acre-feet)	Net Irrigation Requirement (acre-feet)
(1)	01/02/41	3.0	6.0	3.3
(2)	04/10/41	116.0	162.3	81.4
(3)	11/27/42	2.8	11.8	5.9
(4)	01/01/42	6.0	8.8	4.4
(5)	02/20/43	3.0	8.0	4.0
(6)	04/14/43	6.0	7.1	3.6
	Subtotal	135.8	204.8	102.3

c. Indian-Owned Fee "P" Lands

	Reacqui- sition Date	PIA Acres	Diversion Requirement (acre-feet)	Net Irrigation Requirement (acre-feet)
(1)	11/27/41	23.0	37.8	43.9
	Subtotal	23.0	37.8	43.9
CATEGORY TOTAL		653.4	1,278.5	639.5

28-11.b.8.(a)

Differences from claims of the United States and Tribes concerning arability of adjudicated land are derived from Wyoming Exhibit WRIR SS-1002. Acreage is from Wyoming Exhibit WRIR HSO-7 Second Revised. Water requirements are from Wyoming Exhibit WRIR HFB-3. Land status of the acreage in this finding is from United States Exhibit WRIR C-317. Tracts included are listed below:

19-001C
19-005C
19-014C
20-026C
33-001C
33-002C
33-003C1
34-013C
34-014C
34-015C1
34-016C
35-003C1
35-003C2
35-004C
35-005C1
35-005C2

28-11.b.8.(b)

Differences from claims of the United States and Tribes regarding arability of unadjudicated in-use land are derived from Wyoming Exhibit WRIR SS-1000. Acreage is from Wyoming Exhibit WRIR HSO-2A. Water requirements are from Wyoming Exhibit WRIR HFB-1. Land status of the acreage in this finding is derived from United States Exhibit WRIR C-317. Tracts included are listed below:

08-011
19-006
19-010
20-024
20-026
33-004
35-003
35-004
35-005
35-006
35-007
35-008
35-009
35-010

28-11.b.8.(c)

Differences from claims of the United States and Tribes concerning the arability of Indian-owned fee "I" land are derived from Wyoming Exhibit WRIR SS-1003. Irrigated acreage is from Wyoming Exhibit WRIR HSO-10. Water requirements are from Wyoming Exhibit WRIR HFB-4. Land status of the acreage in this finding is from United States Exhibit WRIR C-317, Tribes Exhibit KH-12, and Wyoming Exhibit WRIR TH-19. Tracts included are listed below:

08-046H

9. Land status category 08.

Of those lands found to constitute PIA as a result of the "with economics" (7-1/8%) analysis, described in Finding of Fact 28-2.a., supra, the Court finds that there is no PIA constituting land status category 08 lands: Unallotted, unrestored ceded land which has been reacquired in trust by individual Indians.

28-11.b.9

See United States Exhibit WRIR C-317.

10. Land status category 09.

Of those lands found to constitute PIA as a result of the "with economics" (7-1/8%) analysis, described in Finding of Fact 28-2.a., supra, the Court finds that 2,505.5 acres, having a diversion requirement of 4,547.1 a.f. and a net irrigation requirement of 2,273.6 a.f. constitute category 09 lands: Unallotted, unrestored ceded land which has been reacquired in trust by the Tribes. Category 09 lands are summarized in the following table:

a. Adjudicated Lands

	<u>Reacqui-</u> <u>sition</u> <u>Date</u>	<u>PIA</u> <u>Acres</u>	<u>Diversion</u> <u>Requirement</u> <u>(acre-feet)</u>	<u>Net</u> <u>Irrigation</u> <u>Requirement</u> <u>(acre-feet)</u>
(1)	09/10/40	54.0	96.2	48.1
(2)	10/23/40	59.0	101.4	50.7
(3)	11/16/40	74.0	145.0	72.5
(4)	11/22/40	76.0	121.8	60.9
(5)	11/23/40	35.0	68.6	34.3
(6)	12/14/40	32.0	62.6	31.3
(7)	12/21/40	30.0	16.2	8.1
(8)	01/02/41	157.0	249.8	124.9
(9)	01/08/41	453.0	770.0	385.0
(10)	01/10/41	38.0	20.6	10.3
(11)	03/31/41	44.0	37.0	29.5
(12)	04/10/41	84.0	161.4	80.7
(13)	07/08/41	30.0	57.6	28.8
(14)	10/14/41	45.0	38.2	44.1
(15)	11/19/41	92.0	176.6	38.3
(16)	11/27/41	40.0	132.8	76.4
(17)	12/22/41	73.0	289.2	144.6
(18)	12/23/41	10.0	0.0	0.0
(19)	01/08/42	37.0	53.8	32.9
(20)	01/30/42	140.0	201.0	100.3
(21)	02/03/42	25.0	48.0	24.0
(22)	03/30/42	138.0	239.4	119.7
(23)	04/24/42	87.0	154.8	77.4
(24)	04/28/42	13.0	15.4	7.7
(25)	07/03/42	24.0	42.8	21.4
(26)	07/30/42	3.0	11.8	5.9
(27)	01/12/43	20.0	79.2	39.6
(28)	02/20/43	55.0	148.4	74.2
(29)	04/14/43	72.0	41.8	20.9
(30)	04/29/43	106.0	201.0	100.3
(31)	11/26/43	18.0	10.6	5.3
(32)	12/19/44	20.0	49.6	24.8
(33)	02/20/46	12.0	6.4	3.2
(34)	08/22/68	50.0	93.4	46.7
Subtotal		2,246.0	4,044.4	2,022.2

Land Status Category 10, PIA Lands

b. Unadjudicated In-Use Lands

	<u>Reacqui-</u> <u>sition</u> <u>Date</u>	<u>PIA</u> <u>Acres</u>	<u>Diversion</u> <u>Requirement</u> <u>(acre-feet)</u>	<u>Net</u> <u>Irrigation</u> <u>Requirement</u> <u>(acre-feet)</u>
(1)	11/22/40	17.0	29.2	14.6
(2)	12/14/40	1.0	2.0	1.0
(3)	01/02/41	7.0	12.6	6.3
(4)	01/08/41	20.0	1.2	0.6
(5)	04/10/41	18.0	17.8	8.9
(6)	11/19/41	4.0	7.8	3.9
(7)	11/27/41	1.0	4.2	2.1
(8)	01/08/42	10.9	20.0	10.0
(9)	02/02/42	1.0	4.2	2.1
(10)	03/30/42	1.0	2.0	1.0
(11)	03/31/42	25.0	44.6	22.3
(12)	04/24/42	31.3	59.8	30.0
(13)	07/03/42	7.1	13.6	6.8
(14)	09/11/42	5.0	9.6	4.8
(15)	01/12/43	1.0	4.0	2.0
(16)	04/28/43	15.0	29.4	14.7
(17)	06/11/69	64.0	178.4	89.2
	Subtotal	229.3	440.4	220.3

c. Type VII Lands

	<u>Reacqui-</u> <u>sition</u> <u>Date</u>	<u>PIA</u> <u>Acres</u>	<u>Diversion</u> <u>Requirement</u> <u>(acre-feet)</u>	<u>Net</u> <u>Irrigation</u> <u>Requirement</u> <u>(acre-feet)</u>
(1)	02/26/42	13.0	38.5	19.2
(2)	11/26/43	17.2	23.8	11.9
	Subtotal	30.2	62.3	31.1
CATEGORY TOTAL		2,505.5	4,547.1	2,273.6

28-11.b.10.(a)

Differences from claims of the United States and Tribes concerning arability of adjudicated land are derived from Wyoming Exhibit WRIR SS-1002. Acreage is from Wyoming Exhibit WRIR HSO-7 Second Revised. Water requirements are from Wyoming Exhibit WRIR HFB-3. Land status of the acreage in this finding is from United States Exhibit WRIR C-317. Tracts included are listed below:

15-002C	16-017C	16-045C1	19-004C .
15-003C	16-018C	16-046C	19-006C
15-005C	16-019C	16-047C	19-007C1
15-008C	16-0022C1	16-048C	19-007C2
15-013C	16-0022C2	16-051C2	19-011C
15-014C	16-024C	16-052C	19-012C
15-015C	16-025C	16-053C	19-013C
16-001C	16-027C	16-057C	20-001C
16-002C	16-028C	18-019C	20-002C
16-003C	16-029C	18-020C	20-003C
16-004C	16-030C	18-021C	20-004C
16-005C	16-034C	18-022C	20-005C
16-010C	16-035C	18-023C2	20-006C1
16-012C	16-036C	18-024C	20-006C2
16-013C	16-037C	18-025C	20-007C
16-014C	16-043C	19-002C	20-009C1
16-015C	16-044C	19-003C	20-009C2
20-011C	20-024C	20-033C	33-005C1
20-013C	20-025C	20-045C	33-007C
20-014C	20-029C	20-046C	35-002C
20-022C	20-031C1	21-001C	35-007C
20-023C	20-031C2	33-004C1	35-008C

28-11.b.10.(b)

Differences from claims of the United States and Tribes regarding availability of unadjudicated in-use land are derived from Wyoming Exhibit WRIR SS-1000. Acreage is from Wyoming Exhibit WRIR HSO-2A. Water requirements are from Wyoming Exhibit WRIR HFB-1. Land status of the acreage in this finding is derived from United States Exhibit WRIR C-317. Tracts included are listed below:

08-010
09-003
15-003
15-004
15-005
15-005A
16-001
16-002
16-004
16-005
16-006
16-007
18-001
18-005
18-006
18-010
18-011
19-005
19-007
19-009
20-009
20-010
20-010A
20-010B
20-011
20-012
20-013
20-014
20-017
20-021
20-033
20-036
33-005
35-002

28-11.b.10.(c)

Differences from claims of the United States and Tribes concerning arability of Type VII land are derived from Wyoming Exhibit WRIR SS-7 Revised. Irrigable acreage is from Wyoming Exhibit WRIR HSO-4. Economic feasibility is from Wyoming Exhibit WRIR EJ-16. Water requirements are from Wyoming Exhibit WRIR HFB-2. Land status of the acreage in this finding is from United States Exhibit WRIR C-317. Tracts included are listed below:

16-017X
30-001X

11. Land status category 10.

Of those lands found to constitute PIA as a result of the "with economics" (7-1/8%) analysis, described in Finding of Fact 28-2.a., supra, the Court finds that 988.1 acres, having a diversion requirement of 1,474.7 a.f. and a net irrigation requirement of 737.5 a.f. constitute category 10 lands: Land restored by Acts of Congress or Orders of the Secretary of Interior. Category 10 lands are summarized in the following table:

a. Adjudicated Lands

<u>Restora- tion Date</u>	<u>PIA Acres</u>	<u>Diversion Requirement (acre-feet)</u>	<u>Net Irrigation Requirement (acre-feet)</u>
04/12/44	12.0	26.0	13.0
Subtotal	12.0	26.0	13.0

b. Unadjudicated In-Use Lands

	<u>Restora- tion Date</u>	<u>PIA Acres</u>	<u>Diversion Requirement (acre-feet)</u>	<u>Net Irrigation Requirement (acre-feet)</u>
(1)	04/17/40	198.0	618.3	309.5
(2)	08/28/42	105.0	84.0	32.0
(3)	04/12/44	601.0	551.9	276.0
(4)	02/02/45	3.0	16.3	3.4
(5)	10/27/48	2.0	1.2	0.6
(6)	08/15/53	29.0	96.3	48.4
(7)	07/23/74	1.0	1.2	0.6
Subtotal		943.0	1,350.8	675.3

c. Type VII Lands

	<u>Restora- tion Date</u>	<u>PIA Acres</u>	<u>Diversion Requirement (acre-feet)</u>	<u>Net Irrigation Requirement (acre-feet)</u>
	04/12/44	33.1	97.9	49.0
Subtotal		33.1	97.9	49.0
CATEGORY TOTAL		988.1	1,474.7	737.5

28-11.b.11.(a)

Differences from claims of the United States and Tribes concerning arability of adjudicated land are derived from Wyoming Exhibit WRIR SS-1002. Acreage is from Wyoming Exhibit WRIR HSO-7 Second Revised. Water requirements are from Wyoming Exhibit WRIR HFB-3. Land status of the acreage in this finding is from United States Exhibit WRIR C-317. Tracts included are listed below:

18-002C

28-11.b.11(b)

Differences from claims of the United States and Tribes regarding arability of unadjudicated in-use land are derived from Wyoming Exhibit WRIR SS-1000. Acreage is from Wyoming Exhibit WRIR HSO-2A. Water requirements are from Wyoming Exhibit WRIR HFB-1. Land status of the acreage in this finding is derived from United States Exhibit WRIR C-317. Tracts included are listed below:

08-006	19-011	20-027
09-014	19-013	20-028
09-015	19-014	20-029
09-023	19-016	20-030
09-027	19-017	20-032
09-028	19-019	20-034
09-029	19-021	20-035
09-030	19-026	20-037
10-001	19-028	20-039
10-002	19-029	20-040
15-006	20-003	20-041
15-009	20-005	20-042
16-008	20-012	20-043
16-010	20-015	21-002
18-003	20-016	21-003
18-004	20-022	33-001
18-006	20-023	33-004
19-003	20-024	33-005
19-004	20-025	35-005

28-11.b.11.(c)

Differences from claims of the United States and Tribes concerning arability of Type VII land are derived from Wyoming Exhibit WRIR SS-7 Revised. Irrigable acreage is from Wyoming Exhibit WRIR HSO-4. Economic feasibility is from Wyoming Exhibit WRIR EJ-16. Water requirements are from Wyoming Exhibit WRIR HFB-2. Land status of the acreage in this finding is from United States Exhibit WRIR C-317. Tracts included are listed below:

09-001X
09-006X
30-001X

12. Land status category 11.

Of those lands found to constitute PIA as a result of the "with economics" (7-1/8%) analysis, described in Finding of Fact 28-2.a., supra, the Court finds that 2,181 acres, having a diversion requirement of 10,310.5 a.f. and a net irrigation requirement of 5,155.3 a.f., constitute category 11 lands: Land claimed by the Tribes to be Indian-owned fee land in the ceded portion for which no evidence to determine current ownership has been introduced. Category 11 lands are summarized in the following table:

<u>Land Type</u>	<u>PIA Acres</u>	<u>Diversion Requirement Acre-Feet</u>	<u>Net Irrigation Requirement Acre-Feet</u>
(a) Indian-Owned Fee "I"	2,818.0	10,310.5	5,155.3
CATEGORY TOTAL	2,818.0	10,310.5	5,155.3

28-11.b.12.(a)

Differences from claims of the United States and Tribes concerning the arability of Indian-owned fee "I" land are derived from Wyoming Exhibit WRIR SS-1003. Irrigated acreage is from Wyoming Exhibit WRIR HSO-10. Water requirements are from Wyoming Exhibit WRIR HFB-4. Land status of the acreage in this finding is from United States Exhibit WRIR C-317, Tribes Exhibit KH-12, and Wyoming Exhibit WRIR TH-19. Tracts included are listed below:

05-021H	08-047H
05-039H	08-105H
05-040H	08-108H
05-084H	09-002H
05-090H	09-052H
08-006H	09-063H
08-010H	09-065H
08-011H	19-008H
08-029H	19-030H
08-037H	19-125H
08-038H	20-019H
08-045H	22-049H
	23-094H
	34-100H
	36-099H

13. Land status category 12.

Of those lands found to constitute PIA as a result of the "with economics" (7-1/8%) analysis, described in Finding of Fact 28-2.a., supra, the Court finds that 1,583.4 acres, having a diversion requirement of 5,509.6 a.f. and a net irrigation requirement of 2,755.0 a.f., constitute category 12 lands: Land claimed by the United States and Tribes to be in trust or Indian-owned fee land in the diminished portion for which no evidence to determine current ownership has been introduced. Category 12 lands are summarized in the following table:

<u>Land Type</u>	<u>PIA Acres</u>	<u>Diversion Requirement Acre-Feet</u>	<u>Net Irrigation Requirement Acre-Feet</u>
(a) Adjudicated	44.0	84.0	42.0
(b) Unadjudicated In-Use	90.2	214.5	107.3
(c) Type VII	7.2	20.2	10.1
(d) Indian-Owned Fee "I"	1,442.0	5,190.9	2,595.6
CATEGORY TOTAL	1,583.4	5,509.6	2,755.0

28-11.b.13.(a)

Differences from claims of the United States and Tribes concerning arability of adjudicated land are derived from Wyoming Exhibit WRIR SS-1002. Acreage is from Wyoming Exhibit WRIR HSO-7 Second Revised. Water requirements are from Wyoming Exhibit WRIR HFB-3. Land status of the acreage in this finding is from United States Exhibit WRIR C-317. Tracts included are listed below:

02-005C
22-004C

28-11.b.13.(b)

Differences from claims of the United States and Tribes regarding availability of unadjudicated in-use land are derived from Wyoming Exhibit WRIR SS-1000. Acreage is from Wyoming Exhibit WRIR HSO-2A. Water requirements are from Wyoming Exhibit WRIR HFB-1. Land status of the acreage in this finding is derived from United States Exhibit WRIR C-317. Tracts included are listed below:

01-065
22-020
23-015

28-11.b.13.(c)

Differences from claims of the United States and Tribes concerning arability of Type VII land are derived from Wyoming Exhibit WRIR SS-7 Revised. Irrigable acreage is from Wyoming Exhibit WRIR HSO-4. Economic feasibility is from Wyoming Exhibit WRIR EJ-16. Water requirements are from Wyoming Exhibit WRIR HFB-2. Land status of the acreage in this finding is from United States Exhibit WRIR C-317. Tracts included are listed below:

05-007X

28-11.b.13.(d)

Differences from claims of the United States and Tribes concerning the arability of Indian-owned fee "I" land are derived from Wyoming Exhibit WRIR SS-1003. Irrigated acreage is from Wyoming Exhibit WRIR HSO-10. Water requirements are from Wyoming Exhibit WRIR HFB-4. Land status of the acreage in this finding is from United States Exhibit WRIR C-317, Tribes Exhibit KH-12, and Wyoming Exhibit WRIR TH-19. Tracts included are listed below:

01-003H	04-018H
01-051H	04-087H
01-056H	04-088H
01-072H	05-024H
01-082H	05-062H
01-107H	08-046H
01-113H	12-102H
01-117H	15-110H
02-001H	22-023H
02-058H	22-049H
03-026H	22-050H
03-070H	22-080H
03-071H	22-093H
03-073H	25-119H
03-076H	

14. Land status category 13.

Of those lands found to constitute PIA as a result of the "with economics" (7-1/8%) analysis, described in Finding of Fact 28-2.a., supra, the Court finds that 42.2 acres, having a diversion requirement of 82 a.f. and a net irrigation requirement of 41 a.f., constitute category 13 lands: Lands in the diminished portion of the reservation which have been returned to tribal trust from Indian ownership. Category 13 lands are summarized in the following table:

a. Adjudicated Lands

<u>Reacqui-</u> <u>sition</u> <u>Date</u>	<u>PIA</u> <u>Acres</u>	<u>Diversion</u> <u>Requirement</u> <u>(acre-feet)</u>	<u>Net</u> <u>Irrigation</u> <u>Requirement</u> <u>(acre-feet)</u>
12/20/41	15.0	38.8	19.4
Subtotal	15.0	38.8	19.4

b. Unadjudicated In-Use Lands

	<u>Reacqui-</u> <u>sition</u> <u>Date</u>	<u>PIA</u> <u>Acres</u>	<u>Diversion</u> <u>Requirement</u> <u>(acre-feet)</u>	<u>Net</u> <u>Irrigation</u> <u>Requirement</u> <u>(acre-feet)</u>
(1)	12/20/41	8.0	28.8	14.4
(2)	08/25/69	8.0	0.0	0.0
(3)	10/12/77	1.0	3.6	1.8
(4)	01/18/80	10.2	10.8	5.4
Subtotal		27.2	43.2	21.6
CATEGORY TOTAL		42.2	82.0	41.0

28-11.b.14.(a)

Differences from claims of the United States and Tribes concerning arability of adjudicated land are derived from Wyoming Exhibit WRIR SS-1002. Acreage is from Wyoming Exhibit WRIR HSO-7 Second Revised. Water requirements are from Wyoming Exhibit WRIR HFB-3. Land status of the acreage in this finding is from United States Exhibit WRIR C-317. Tracts included are listed below:

14-001C

28-11.b.14.(b)

Differences from claims of the United States and Tribes regarding arability of unadjudicated in-use land are derived from Wyoming Exhibit WRIR SS-1000. Acreage is from Wyoming Exhibit WRIR HSO-2A. Water requirements are from Wyoming Exhibit WRIR HFB-1. Land status of the acreage in this finding is derived from United States Exhibit WRIR C-317. Tracts included are listed below:

01-014
01-018
05-051
14-002

15. Land status category 14.

Of those lands found to constitute PIA as a result of the "with economics" (7-1/8%) analysis, described in Finding of Fact 28-2.a., supra, the Court finds that 89.8 acres, having a diversion requirement of 322.2 acre-feet and a net irrigation requirement of 161.1 acre-feet, constitute category 14 lands: Land in the diminished portion of the reservation which has been conveyed to non-Indian ownership and remains non-Indian. Category 14 lands are summarized in the following table:

<u>Land Type</u>	<u>PIA Acres</u>	<u>Diversion Requirement Acre-Feet</u>	<u>Net Irrigation Requirement Acre-Feet</u>
(a) Unadjudicated In-Use	79.8	297.2	148.6
(b) Type VII	10.0	25.0	12.5
CATEGORY TOTAL	89.8	322.2	161.1

28-11.b.15.(a)

Differences from claims of the United States and Tribes regarding arability of unadjudicated in-use land are derived from Wyoming Exhibit WRIR SS-1000. Acreage is from Wyoming Exhibit WRIR HSO-2A. Water requirements are from Wyoming Exhibit WRIR HFB-1. Land status of the acreage in this finding is derived from United States Exhibit WRIR C-317. Tracts included are listed below:

02-011
02-069
05-053

28-11.b.15.(b)

Differences from claims of the United States and Tribes concerning arability of Type VII land are derived from Wyoming Exhibit WRIR SS-7 Revised. Irrigable acreage is from Wyoming Exhibit WRIR HSO-4. Economic feasibility is from Wyoming Exhibit WRIR EJ-16. Water requirements are from Wyoming Exhibit WRIR HFB-2. Land status of the acreage in this finding is from United States Exhibit WRIR C-317. Tracts included are listed below:

01-048X

16. Land status category 15.

Of those lands found to constitute PIA as a result of the "with economics" (7-1/8%) analysis, described in Finding of Fact 28-2.a., supra, the Court finds that 276.7 acres, having a diversion requirement of 744.3 a.f. and a net irrigation requirement of 372.2 a.f. constitute category 15 lands: Land in the diminished portion of the reservation conveyed to non-Indian ownership which has been reacquired by individual Indians. Category 15 lands are summarized in the following table:

a. Adjudicated Lands

	Reacquisition Date	PIA Acres	Diversion Requirement (acre-feet)	Net Irrigation Requirement (acre-feet)
(1)	02/26/41	45.0	139.4	79.7
(2)	03/24/41	40.0	141.6	70.8
(3)	02/12/48	7.3	23.8	12.9
(4)	03/13/51	22.0	12.8	4.4
	Subtotal	114.3	319.6	169.8

b. Unadjudicated In-Use Lands

	Reacquisition Date	PIA Acres	Diversion Requirement (acre-feet)	Net Irrigation Requirement (acre-feet)
(1)	10/23/40	13.0	3.0*	3.0*
(2)	12/02/40	12.0	30.2	23.1
(3)	02/28/41	54.4	155.0	127.5
(4)	03/07/41	41.0	43.4	31.7
(5)	02/12/48	3.0	3.2	1.6
(6)	02/13/48	12.0	23.3	12.7
	Subtotal	132.4	379.1	238.7

c. Type 722 Lands

d. Type 722 Lands

	Reacquisition Date	PIA Acres	Diversion Requirement (acre-feet)	Net Irrigation Requirement (acre-feet)
	03/10/48	11.0	27.6	13.3
	Subtotal	11.0	27.6	13.3
CATEGORY TOTAL		276.7	744.3	372.2

28-11.b.16.(a)

Differences from claims of the United States and Tribes concerning arability of adjudicated land are derived from Wyoming Exhibit WRIR SS-1002. Acreage is from Wyoming Exhibit WRIR HSO-7 Second Revised. Water requirements are from Wyoming Exhibit WRIR HFB-3. Land status of the acreage in this finding is from United States Exhibit WRIR C-317. Tracts included are listed below:

01-004C
01-005C1
02-006C1
25-001C

28-11.b.16.(b)

Differences from claims of the United States and Tribes regarding arability of unadjudicated in-use land are derived from Wyoming Exhibit WRIR SS-1000. Acreage is from Wyoming Exhibit WRIR HSO-2A. Water requirements are from Wyoming Exhibit WRIR HFB-1. Land status of the acreage in this finding is derived from United States Exhibit WRIR C-317. Tracts included are listed below:

01-034
01-053
04-007
05-058
06-001
23-017

28-11.b.16.(c)

Differences from claims of the United States and Tribes concerning arability of Type VII land are derived from Wyoming Exhibit WRIR SS-7 Revised. Irrigable acreage is from Wyoming Exhibit WRIR HSO-4. Economic feasibility is from Wyoming Exhibit WRIR EJ-16. Water requirements are from Wyoming Exhibit WRIR HFB-2. Land status of the acreage in this finding is from United States Exhibit WRIR C-317. Tracts included are listed below:

02-011X

17. Land status category 16.

Of those lands found to constitute PIA as a result of the "with economics" (7-1/8%) analysis, described in Finding of Fact 28-2.a., supra, the Court finds that 830.5 acres, having a diversion requirement of 2,295.7 a.f. and a net irrigation requirement of 1,148.2 a.f., constitute category 16 lands: Lands in the diminished portion of the reservation conveyed to non-Indian ownership which has been reacquired by the Tribes in trust. Category 16 lands are summarized in the following table:

a. <u>Adjudicated</u>				
	<u>Reacquisition Date</u>	<u>PIA Acres</u>	<u>Diversion Requirement (acre-feet)</u>	<u>Net Irrigation Requirement (acre-feet)</u>
(1)	12/20/41	117.0	463.4	231.7
(2)	02/20/42	133.0	290.4	145.2
(3)	03/07/42	30.0	106.2	53.1
(4)	05/23/46	13.0	28.4	14.3
(5)	06/26/79	131.0	183.2	191.6
	<u>Subtotal</u>	<u>430.0</u>	<u>1,271.6</u>	<u>635.9</u>
b. <u>Unadjudicated In-Use Lands</u>				
	<u>Reacquisition Date</u>	<u>PIA Acres</u>	<u>Diversion Requirement (acre-feet)</u>	<u>Net Irrigation Requirement (acre-feet)</u>
(1)	12/20/41	42.0	166.3	83.2
(2)	02/20/42	166.6	379.7	189.9
(3)	03/07/42	25.0	8.1	4.2
(4)	05/23/42	1.0	2.0	1.0
(5)	06/17/43	1.0	4.2	2.1
(6)	03/08/45	42.3	136.8	68.3
(7)	02/20/46	78.0	169.0	84.5
(8)	03/06/60	3.0	11.8	5.9
(9)	06/26/79	36.0	126.2	63.1
	<u>Subtotal</u>	<u>400.5</u>	<u>1,024.1</u>	<u>512.9</u>
CATEGORY TOTAL		830.5	2,295.7	1,148.2

28-11.b.17(a)

Differences from claims of the United States and Tribes concerning arability of adjudicated land are derived from Wyoming Exhibit WRIR SS-1002. Acreage is from Wyoming Exhibit WRIR HSO-7 Second Revised. Water requirements are from Wyoming Exhibit WRIR HFB-3. Land status of the acreage in this finding is from United States Exhibit WRIR C-317. Tracts included are listed below:

5-1CD
5-2CM
14-5C1
14-2C
14-3C1
14-4C
14-5C2
22-2C
25-2C
25-4C
31-3C
31-4C

28-11.b.17(b)

Differences from claims of the United States and Tribes regarding arability of unadjudicated in-use land are derived from Wyoming Exhibit WRIR SS-1000. Acreage is from Wyoming Exhibit WRIR HSO-2A. Water requirements are from Wyoming Exhibit WRIR HFB-1. Land status of the acreage in this finding is derived from United States Exhibit WRIR C-317. Tracts included are listed below:

1-110
1-112
2-72
2-82
2-100
3-26
5-44
5-52
5-53
12-10
14-12
14-13
22-2
22-6
22-7
25-5
31-7
31-8
31-9
31-10

Note: The State of Wyoming has intentionally submitted no Findings of Fact, numbered 29-1, et seq.

Findings of Fact Relating To
Non-Indian Ownership Of Reserved Rights

30-1 Claims to reserved rights by non-Indians

During the course of this adjudication, numerous defendants other than the United States or the Tribes have asserted and presented evidence in support of claims that they are entitled to a reserved right, based on their fee ownership of land which lies within the Reservation. In other words, they assert that when the land was conveyed to them, so was any reserved right associated with the land. Although the claims of these non-Indian claimants are separate from the claims by and on behalf of the Indian, it is difficult to ignore them since: (1) both the Indian and non-Indian claims are grounded on the same legal theory, and (2) there are approximately 42,000 acres of irrigated lands (outside of the Reclamation Withdrawal Area) owned by non-Indians within the Reservation.

30-1 See e.g., Answer of O.K. Kohler, 8/22/77; Tr. 13513 et
seq. (John Longfellow); Tr. 12815 (Henry Sostrom).

Findings of Fact Relating to Transferability

31-1 Necessity of unified system of administration of water rights.

- (a) The Special Master has taken judicial notice of the fact that all water rights within the State of Wyoming, federal reserved and state-awarded alike, must be jointly administered in an interlocking manner by a single administrative agency in order for the water resources of the State to be used in an efficient, nonwasteful and productive manner and so that both holders of federal reserved rights and state-awarded rights are on notice of the nature and extent of their rights.
- (b) The State Engineer, who also serves as the President of the State Board of Control, has testified as to his many years of experience and stated that effective administration of the water resources of the State of Wyoming depends on a single agency administering all water rights within the State, including federal reserved and state-awarded rights.

31-2

Historic consumption use is equivalent to the net irrigation requirement on the Wind River Indian Reservation.

The Special Master finds, based on expert testimony, that "historic amounts consumptively used" on the Wind River Indian Reservation are essentially equivalent to the net irrigation requirements for the reservation.

31-2

See Tr. 13701 (Bishop).

Note: The State of Wyoming has intentionally submitted no Findings of Fact, numbered 32-1, 33-1, 34-1, 35-1, et seq.

Findings of Fact

Relating to

Ground Water

36-1 Types of deposits holding ground water.

Several types of deposits exist which hold ground water on the Wind River Indian Reservation:

- a. Landslide glacial deposits, the occurrence of which is insignificant to the ground water supply of the Wind River Indian Reservation.
- b. Terrace deposits, which are deposits laid down by streams at the time they were at higher levels, before they cut down into their present channels. Terrace deposits are drained during the non-irrigation season, relying on irrigation return flows for recharge and, therefore, are not a major source of water.
- c. The alluvium, the unconsolidated material transported by a river (especially during its high flow stages) and deposited during low flows. The principal source of the ground water that saturates the alluvium is the percolation of

the surface stream flowing on top of the alluvial deposits. Since the ground water in the alluvial deposits is in direct contact with the surface stream, a well into the alluvium could diminish the stream flow. Preliminary indications are that 362,000 acre-feet of ground water not all of which is usable) is stored in the alluvial deposits of the Wind River, the Little Wind River, Spring Creek, Crow Creek, Mill Creek and the Popo Agie.

- d. Wind River Formation, which underlies the Wind River Indian Reservation, consists of a number of layers of gravel of varying coarseness, with the coarser layers of the formation yielding the highest well production, 200-400 g.p.m.
- e. Other aquifers, which underlie the previously mentioned aquifers and the Wind River Indian Reservation. These aquifers, the Madison Limestone, Tensley Sandstone and others are largely undeveloped and few data are available to estimate accurately well yields or water in storage.

36-1

- a. Tr., 1/28/81, Vol. 8, p. 772.
- b. Tr., 1/28/81, Vol. 8, pp. 770-72.
- c. Tr., 1/28/81, Vol. 8, pp. 765, 767, 769-70.
- d. Tr., 1/28/81, Vol. 8, p. 790.

36-2. Calculated potential well yields higher than those actually obtained.

It was noted that for all the alluvial units for which potential well yields in Table II of U. S. Exh. WRIR C-31A were calculated, these were far in excess of any well drilled or producing water from those unit. Although far in excess of actual yields from presently producing wells, potential yields have been estimated for various alluvial units, including: the Little Wind River alluvium, with a potential 200 g.p.m. well yield, where the largest measured discharge has been one-fifth of that, Mill Creek where 40 g.p.m. has actually been obtained, as opposed to a potential 250 g.p.m. as estimated, and Sage Creek, where it is estimated that the alluvium could produce a potential 190 g.p.m., but in fact it has yielded only 30 g.p.m. Although it is similarly estimated that a 900 g.p.m. well could be drilled in the Crow Heart area in the Wind River alluvium, water from such a well would cost \$20-25 per acre-foot to pump to the wellhead and, therefore, would not be practicable at this time compared to the price of obtaining surface water sources.

36-2 Tr., 1/28/81, Vol. 8, pp. 976-80; U. S. Exh. WRIR C-31A.

36-3 Sufficient ground water available for most proposed uses

Whereas no investigation has been made of the water quality of various available ground water sources, it appears that there are aquifers capable of yielding the required quantities of water for the many of the uses proposed by the United States in the Wind River Indian Reservation. Specifically, future increases in water uses for municipal, domestic and commercial purposes may be met without the use of surface water. Ground water sources are available for all proposed mineral and resource development, except those currently served by surface water. These proposed mineral and resource developments include the enhanced recovery operations at two (2) oil fields and natural gas processing, where existing needs are currently being met, coal mining, a coal-fired electricity generating plant, a phosphate rock mine, an anhydrous ammonia plant, a phosphate rock beneficiation and acid production plant, and a wallboard manufacturing operation.

36-3 Tr., 1/28/81, Vol. 8, pp. 814-19, 988; 1/30/81, Vol. 9,
pp. 1033-34, 1038-40, 1042-43.

36-4 Impossible to maintain ground water levels, if ground or surface water is developed.

Because of the interrelationship between ground water and surface water, it is not possible to maintain the present water levels in aquifers if either ground water or surface water is to be developed on or near the Wind River Indian Reservation. Therefore, the claims by and on behalf of the Indians, to maintain ground water levels, are in direct contravention of their claims for extensive use of water from surface streams and use of water from aquifers.

36-4 Mr. Robert Brogden testified on behalf of the State concerning his study of the interrelationship of surface and ground water on the Wind River Indian Reservation and potential recharge of aquifers. Tr., 11/9/81, Vol. 130, pp. 11,850-52, 11,860.

Findings of Fact
Relating to the Doctrine of
Election of Substantive Rights

37-1 Acquisition of water rights on the Wind River Indian Reservation under state law by the United States, on behalf of the Indians

The United States, on behalf of the Indians, has obtained water rights on the reservation in accordance with state law for the irrigation of nearly 145,000 acres. Of that amount, the rights for approximately 58,000 acres have expired, for failure to submit evidence of actual use, leaving uncanceled rights for approximately 87,000 acres. A specific identification of all such rights is contained in the following three pages, copies of Wyoming Exhs. WRIR SR-8 and SR-9:

HIBIT
 32.3

CANCELLED PERMITS FOR THE YEAR 1963
 REPRESENTATIONS ON BEHALF OF APPLICANTS

Cancelled Year	Reason For Cancellation	Permit Number	Expiration Date	Applicant	Total
12/31/1907	Expired	7330	3-3-1914	H.E. Wadsworth	502.0
12/31/1908	Expired	5529	3-7-1905	H.E. Wadsworth	1,559.0
12/31/1912	Expired	3433	5-13-1903	H.E. Wadsworth	1,499.0
12/31/1912	Expired	3434	5-13-1903	H.E. Wadsworth	1,499.0
12/31/1917	Expired	12050	7-12-1912	H.E. Wadsworth	1,153.0
12/31/1921	Expired	5630	3-17-1905	W.W. McCantine	30.0
12/31/1943	At Request U.S. Indian Service	11932	7-2-1914	H.E. Wadsworth	12,400.0
12/31/1943	At Request U.S. Indian Service	32202	5-13-1913	E.E. Jones	3,475.0
12/31/1951	Expired	7324	3-3-1905	W.B. Hill	2,393.42
12/31/1957	Expired	5507	5-4-1905	H.E. Wadsworth	2,555.0
12/31/1957	Expired	13422	3-13-1912	H.E. Wadsworth	179.4
12/31/1960	Expired	13411	5-13-1912	W.W. McCantine	243.7
12/31/1963	Expired	5534	5-4-1905	G.L. Ellis	35.3
12/31/1963	Expired	5535	5-4-1905	H.E. Wadsworth	129.5
12/31/1963	Expired	5536	5-4-1905	H.E. Wadsworth	1,139.9
12/31/1963	Expired	5537	5-4-1905	H.E. Wadsworth	51.0
12/31/1963	Expired	5533	5-4-1905	H.E. Wadsworth	291.9
12/31/1963	Expired	5534	5-4-1905	H.E. Wadsworth	159.1
12/31/1963	Expired	5535	5-4-1905	H.E. Wadsworth	561.7
12/31/1963	Expired	5536	5-4-1905	H.E. Wadsworth	39.7
12/31/1963	Expired	5537	5-4-1905	H.E. Wadsworth	2,377.7
12/31/1963	Expired	5602	5-4-1905	H.E. Wadsworth	5,173.0
12/31/1963	Expired	5603	5-4-1905	H.E. Wadsworth	593.0
12/31/1963	Expired	5605	5-4-1905	H.E. Wadsworth	192.0
12/31/1963	Expired	5611	4-17-1905	H.E. Wadsworth	237.0
12/31/1963	Expired	5620	4-17-1905	H.E. Wadsworth	24.0
12/31/1963	Expired	7529	3-3-1906	H.E. Wadsworth	145.0
12/31/1963	Expired	13405	5-13-1912	G.L. Ellis	15.3
12/31/1963	Expired	13407	5-13-1912	G.L. Ellis	25.5
12/31/1963	Expired	13408	5-13-1912	G.L. Ellis	23.5
12/31/1963	Expired	13413	3-13-1912	W.W. McCantine	33.0
12/31/1963	Expired	13414	3-13-1912	W.W. McCantine	232.3
12/31/1963	Expired	13415	3-13-1912	W.W. McCantine	25.4
12/31/1963	Expired	13421	3-13-1912	W.W. McCantine	177.5
12/31/1963	Expired	13422	3-13-1912	W.W. McCantine	73.3
12/31/1963	Expired	13423	3-13-1912	W.W. McCantine	172.0
12/31/1963	Expired	13424	3-13-1912	W.W. McCantine	201.5
12/31/1963	Expired	13425	3-13-1912	H.E. Wadsworth	154.0
TOTAL					33,317.00

INCANCELLED PERMITS & CERTIFICATES
 FOR THE KODJ KODJ RESERVATION
 MADE BY THE U.S. IN ITS REPRESENTATIVES
 ON BEHALF OF INDIANS

PERMIT NO.	APPLICATION DATE	APPLICANT	ACRES
5531	March 13, 1905	H. E. Wadsworth, U.S. Indian Agent	2209.0
5532	March 13, 1905	H. E. Wadsworth, U.S. Indian Agent	19,451.4
5533	March 13, 1905	H. E. Wadsworth, U.S. Indian Agent	13,000.0
5534	March 13, 1905	H. E. Wadsworth, U.S. Indian Agent	5425.2
5608	April 27, 1905	H. E. Wadsworth, U.S. Indian Agent	77.0
5609	April 27, 1905	H. E. Wadsworth, U.S. Indian Agent	49.0
5610	April 27, 1905	H. E. Wadsworth, U.S. Indian Agent	57.0
5612	April 27, 1905	H. E. Wadsworth, U.S. Indian Agent	119.0
5613	April 27, 1905	H. E. Wadsworth, U.S. Indian Agent	15.0
5614	April 27, 1905	H. E. Wadsworth, U.S. Indian Agent	55.0
5615	April 27, 1905	H. E. Wadsworth, U.S. Indian Agent	23.0
5616	April 27, 1905	H. E. Wadsworth, U.S. Indian Agent	231.0
5617	April 27, 1905	H. E. Wadsworth, U.S. Indian Agent	209.5
5618	April 27, 1905	H. E. Wadsworth, U.S. Indian Agent	313.9
5619	April 27, 1905	H. E. Wadsworth, U.S. Indian Agent	443.4
5621	April 27, 1905	H. E. Wadsworth, U.S. Indian Agent	55.0
5622	April 27, 1905	H. E. Wadsworth, U.S. Indian Agent	39.0
5623	April 27, 1905	H. E. Wadsworth, U.S. Indian Agent	32.0
5624	April 27, 1905	H. E. Wadsworth, U.S. Indian Agent	55.0
5625	April 27, 1905	H. E. Wadsworth, U.S. Indian Agent	4279.0
5625	April 27, 1905	H. E. Wadsworth, U.S. Indian Agent	7239.0
5627	April 27, 1905	H. E. Wadsworth, U.S. Indian Agent	502.0
5628	April 27, 1905	H. E. Wadsworth, U.S. Indian Agent	1331.0
5583	May 5, 1905	H. E. Wadsworth, U.S. Indian Agent W. B. Hill, Shoshone Agent	339.1
5588	May 5, 1905	H. E. Wadsworth, U.S. Indian Agent W. B. Hill, Shoshone Agent	559.3
5589	May 5, 1905	H. E. Wadsworth, U.S. Indian Agent W. B. Hill, Shoshone Agent	592.1
5590	May 5, 1905	H. E. Wadsworth, U.S. Indian Agent W. B. Hill, Shoshone Agent	1295.7
5591	May 5, 1905	H. E. Wadsworth, U.S. Indian Agent W. B. Hill, Shoshone Agent	158.7
5592	May 5, 1905	H. E. Wadsworth, U.S. Indian Agent W. B. Hill, Shoshone Agent	134.9
5597	May 5, 1905	H. E. Wadsworth, U.S. Indian Agent W. B. Hill, Shoshone Agent	230.3
5598	May 5, 1905	H. E. Wadsworth, U.S. Indian Agent W. B. Hill, Shoshone Agent	1237.1
5599	May 5, 1905	H. E. Wadsworth, U.S. Indian Agent W. B. Hill, Shoshone Agent	735.3
5604	May 5, 1905	H. E. Wadsworth, U.S. Indian Agent W. B. Hill, Shoshone Agent	742.0
12552a1	May 5, 1905	W. B. Hill, Shoshone Agent	1445.1
12552b1	May 5, 1905	W. B. Hill, Shoshone Agent	1253.0
5582	May 5, 1905	H. E. Wadsworth, U.S. Indian Agent W. B. Hill, Shoshone Agent	7547.0
5752	June 10, 1905	H. E. Wadsworth, U.S. Indian Agent	127.3

6953	Nov. 22, 1905	H.E. Wadsworth, U.S. Indian Agent	194.5
6994	Nov. 22, 1905	H.E. Wadsworth, U.S. Indian Agent	73.5
6955	Nov. 22, 1905	H.E. Wadsworth, U.S. Indian Agent	113.0
6956	Nov. 22, 1905	H.E. Wadsworth, U.S. Indian Agent	31.0
6957	Nov. 22, 1905	H.E. Wadsworth, U.S. Indian Agent	200.0
6958	Nov. 22, 1905	H.E. Wadsworth, U.S. Indian Agent	41.0
6959	Nov. 22, 1905	H.E. Wadsworth, U.S. Indian Agent	52.0
7322	Nov. 22, 1905	H.E. Wadsworth, U.S. Indian Agent	314.0
7323	Aug. 11, 1905	H.E. Wadsworth, U.S. Indian Agent	30.0
7325	Aug. 11, 1905	H.E. Wadsworth, U.S. Indian Agent	30.0
7327	Aug. 11, 1905	H.E. Wadsworth, U.S. Indian Agent	31.0
7328	Aug. 11, 1905	H.E. Wadsworth, U.S. Indian Agent	54.0
11240	April 24, 1911	H.E. Wadsworth, U.S. Indian Agent	234.0
13409	June 21, 1912	C.L. Ellis, Special Indian Agent	254.5
13410	June 21, 1912	C.L. Ellis, Special Indian Agent	23.2
13412	June 21, 1912	C.L. Ellis, Special Indian Agent	3.3
13415	Aug. 15, 1912	W.W. McConihe, Special Indian Agent	75.0
13417	Aug. 15, 1912	W.W. McConihe, Special Indian Agent	30.7
13418	Aug. 15, 1912	W.W. McConihe, Special Indian Agent	10.1
13419	Aug. 15, 1912	W.W. McConihe, Special Indian Agent	30.0
13420	Aug. 15, 1912	W.W. McConihe, Special Indian Agent	5.3
13423	Aug. 15, 1912	W.W. McConihe, Special Indian Agent	33.2
13425	Aug. 15, 1912	W.W. McConihe, Special Indian Agent	30.5
13427	Aug. 15, 1912	W.W. McConihe, Special Indian Agent	327.4
13430	Aug. 15, 1912	W.W. McConihe, Special Indian Agent	115.1
13438	Aug. 15, 1912	W.W. McConihe, Special Indian Agent	17.3
12982n1	Aug. 15, 1912	W.W. McConihe, Special Indian Agent	271.4
		W.W. McConihe, Special Indian Agent	405.5
TOTAL			36,717.30

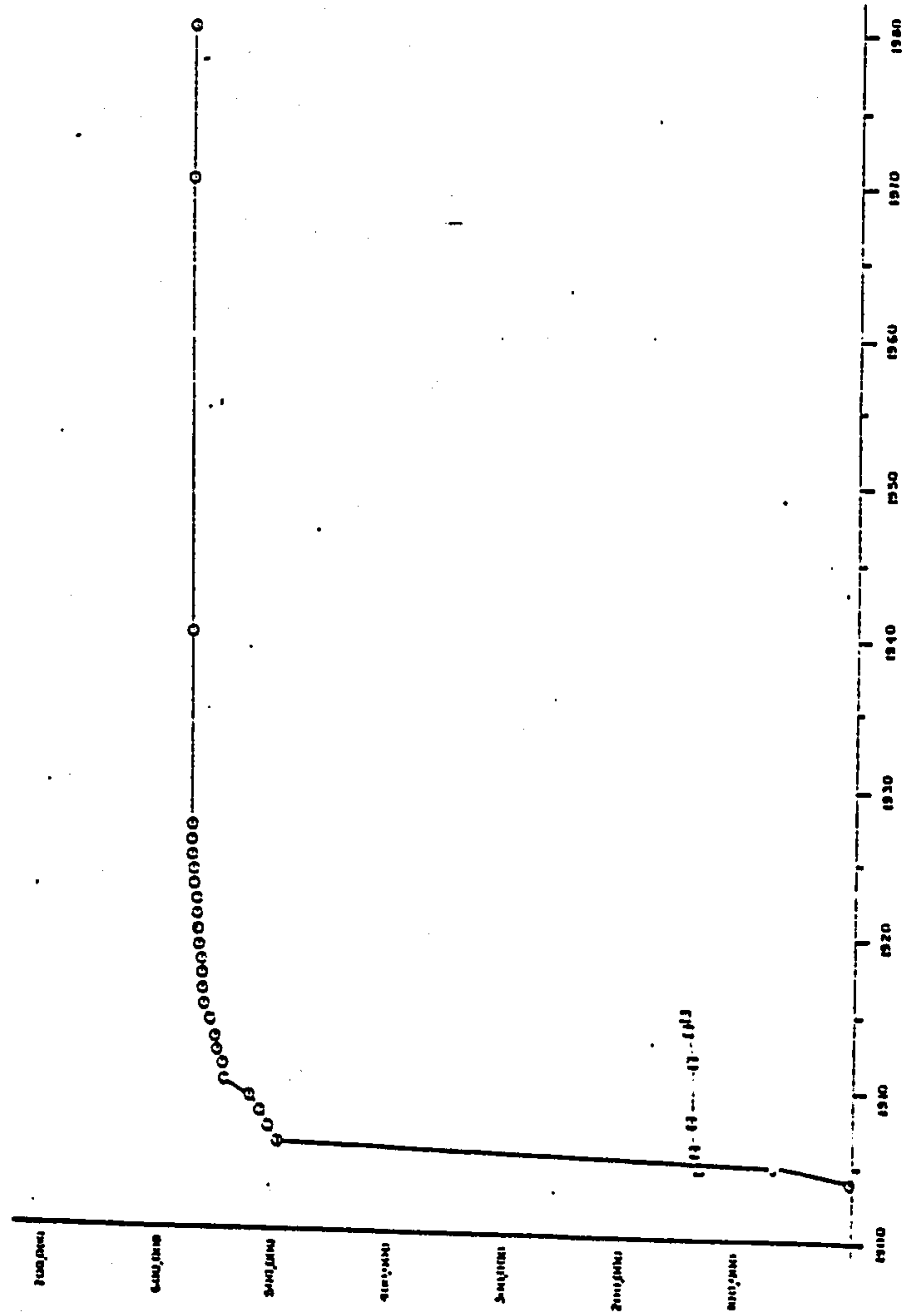
37-2 Acquisition by others of state-awarded rights within the present boundaries of the Wind River Indian Reservation

As shown on the following page, a copy of Wyoming Exhibit WRIR SR-5, over 400,000 acres of land were the subject of irrigation water rights applied for by non-Indians within the present boundaries of the Wind River Indian Reservation.

PLANTIFF'S
EXHIBIT
W-17-
SR-5

LEGEND:

- O-- ALL APPLICATIONS
- B-- APPLICATIONS ON BEHALF OF TRUSTS



YEAR OF APPLICATION

SINGLE MASS DIAGRAM

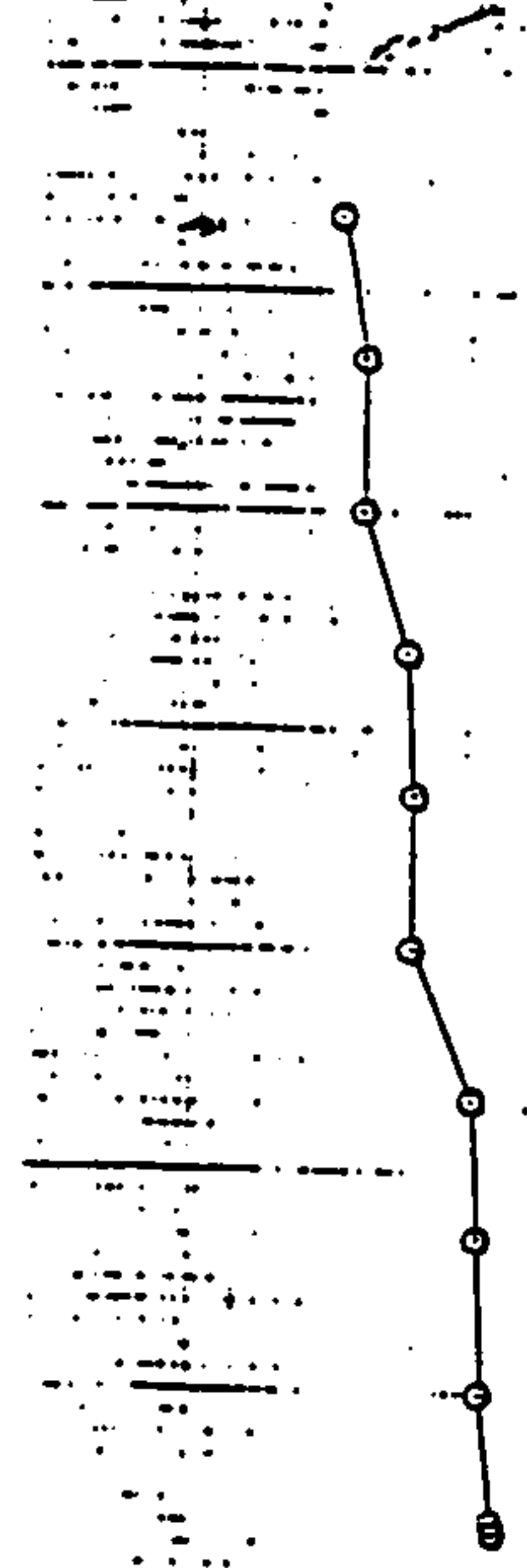
STATE DEPARTMENT OF LANDS

37-3 Application by the United States, on behalf of Indians,
for state water rights to irrigate lands for which a
reserved right is claimed

As shown on the following page, a copy of Wyoming Exhibit WRIR SR-4, over 30,000 acres of lands for which a reserved right is now claimed were the subject of state water rights applied for by the United States on behalf of Indians.

ACRES CLAIMED AS PIA

25,000
20,000
15,000
10,000
5,000



LEGEND.

○ APPLICATIONS ON BEHALF OF TRIBES

YEAR OF APPLICATION

SINGLE MASS DIAGRAM

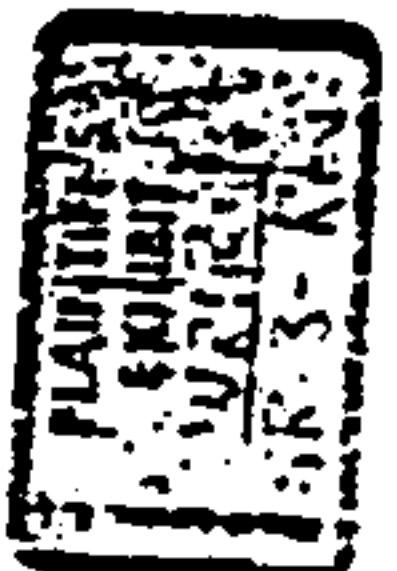
STATE AWARDED WATER RIGHTS FOR LAND CLAIMED BY US AND TRIBES AS PIA ON THE WIND GIVEN INDIAN RESERVATION



U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS
WASHINGTON, D. C.

37-4 Lands for which reserved rights are claimed for which a state-awarded right has been obtained

The following page, a copy of Wyoming Exhibit SR-3 (Rev.), shows the amounts of different types of land for which a reserved right is now claimed which also is or was the subject of a state-awarded right.



**TABULATION OF U.S. AND TRIBES PIA CLAIMS
FOR WHICH STATE - AWARDED WATER RIGHTS HAVE BEEN OBTAINED.**

CLAIM TYPE	ADJUDICATED CERTIFICATES (Acres)	VALID PERMITS (Acres)	CANCELLED CERTIFICATES AND PERMITS (Acres)	TOTAL ACRES FOR WHICH STATE AWARDED WATER RIGHTS HAVE BEEN OBTAINED	U.S. AND TRIBES CLAIM (Acres)	% OF CLAIMED ACRES FOR WHICH STATE AWARDED WATER RIGHTS HAVE BEEN OBTAINED
HISTORIC	UNADJUDICATED IN USE	0	12697	34437	31427	100%
	UNADJUDICATED IDLE - TYPE VII	0	4080	8002	8002	100%
	ADJUDICATED	17411	0	17411	17411	100%
	IRRIGATED	1492	965	5762	6431	90%
SUBTOTAL - HISTORIC	18903	20967	17742	65612	66271	99%
FUTURE	NORTH CROWHEART	0	15319	15358	30773	40%
	SOUTH CROWHEART	0	2334	2334	4695	50%
	RIVERTON EAST	0	1424	1947	3814	51%
	ARAPAHOE	0	279	743	3808	20%
	BIG HORN FLATS	0	0	0	2670	0%
	BIG HORN FLATS EXTENSION	0	0	0	9073	0%
	STAGNER RIDGE	0	887	887	897	99%
	POTENTIALLY IRRIGATED	212	320	511	3943	20%
	INDIAN OWNED	0	506	506	1461	35%
	PIP'S IN ARAPAHOE RANCH AREA - TYPE VIII	212	1852	20754	69134	33%
	SUBTOTAL - FUTURE	19112	30819	38496	88430	135405
TOTAL						

37-5 The approximately 500 acres under state water rights, which are referred to in this proposed finding are described below:

Tract No.	State Permit Number	Practicably Irrigable Acres	Associated Division Reqmt.	Net Irrigation Reqmt.
1-019	6685	4.0	14.2	7.1
1-020	6685	42.0	148.7	74.3
1-021	6633	23.0	81.4	40.7
1-079	6633	15.0	53.1	26.6
1-081	6633	20.0	70.8	35.4
1-082	6633	5.0	17.8	8.9
1-089	6633	5.0	17.7	8.9
1-091	6633	10.0	35.4	17.7
1-116	6633	1.0	3.8	1.9
1-117	6633	22.0	83.6	41.8
1-126	6632	48.0	70.7	35.4
1-160	6632	50.0	190.0	95.0
2-069	6632	20.0	70.8	35.4
2-109	6632	20.0	84.0	42.0
4-004	6625	7.0	27.7	13.9
5-026	6626	48.0	190.1	95.0
12-002	17854	4.0	14.4	7.2
12-003	17854	4.0	7.2	3.6
1-16X	6585	20.0	50.0	25.0
1-49X	6633	106.4	266.0	133.0
1-53X	6607	15.0	37.5	18.7
1-56X	6632	12.0	30.0	15.0
TOTALS		501.4	1564.9	782.5

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37-5 Land for which reserved rights are granted for which a state-awarded right has been obtained

After considering factors such as arability, water availability, economic feasibility and land status, the Court has awarded a reserved right for the acres of land set forth in Appendix 1, a portion of the Decree herein. Approximately 500 of those acres are the subject of previously awarded state rights. Notwithstanding, other findings and conclusions concerning the election of substantive rights, the Court declines at this time to apply the doctrine to the limited amount of land involved, since the exercise of the reserved right so granted would not cause material injury to the holders of other state-awarded rights and would not violate expressions of Congressional intent surrounding its program of western settlement.

Note: The State of Wyoming has intentionally submitted no Findings of Fact, numbered 38-1, 39-1, et seq.

Findings of Fact
Relating to
Indian-Held
State-Awarded Water

40-1 No finding as to State-Awarded Rights

In light of the parties' stipulations, the Court makes no findings with respect to the state-awarded rights for which the United States, on behalf of the Tribes, seeks confirmation.

Note: The State of Wyoming has intentionally submitted no Findings of Fact, numbered 41-1, et seq.

Findings of Fact
Relating to the Quantification
of the Indian Reserved Rights In Light of
Conflicting Legislative Intent

42-1 Conflicts between claimed Indian reserved rights
and state-awarded water rights

In quantifying Indian reserved rights, the Court realizes that the quantity of the reserved rights claimed by and on behalf of the Tribes may result in major conflicts with State-awarded water rights possessed by Indians and non-Indians.

42-1 Mr. Gordon Fassett, testifying for the State of Wyoming, identified state-awarded rights which will be affected if the reserved rights claims of the United States and the Tribes were to be awarded and exercised. (Tr. 9645-9656; Tr. 9848-9854 and Tr. 10008-10029 and Wyo. Exhs. MF-8 2nd Rev., MF-9 Rev. and MF-10 2nd Rev.).

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Conflict between claimed Indian reserved rights
and State-awarded rights

If Congress encouraged western settlement and knew that such settlement would be dependent on the availability of water, Congress would not have intended to reserve so much water for the Indians in 1868 that insufficient water remained to effect the later settlement of public lands. Consequently, in evaluating the existence and amount of the Indian reserved right, the Court must insure that enough water remains to serve those lands which Congress intended to be occupied, pass into private ownership and enjoy the benefits of irrigation as part of its effort to settle the west.

42-2

See Findings of Fact 42-3 through 42-6.

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Congressional encouragement of settlement of the
West

During the nineteenth and early twentieth centuries, Congress enacted a series of land disposition statutes designed to encourage the settlement of unoccupied lands in the west, including lands in Wyoming. Beginning as early as 1876, settlers began patenting lands within the Big Horn Basin under these disposal statutes and acquiring water rights for those lands in accordance with the local laws and customs.

42-3

See Wyo. Exh. WRIR MV-11A which is a temporal array of lands patented in the Big Horn Basin for which state-awarded water rights have been obtained.

Evidence of this congressional encouragement to settle western public lands is contained in statutes, legislative histories of the statutes and judicial opinions include:

1. Wyo. Exh. WRIR DS-20, a copy of McKinney v. Big Horn Basin Development Co., 167 F. 770, 775, in which District Judge Phillips stated:

The underlying purpose of the acts of Congress in ceding the vast domain of desert lands within the territorial limits of the given state was, through the agency of the state government more immediately concerned, to speedily have them reclaimed from an unproductive waste by means of artificial irrigation, whereby they might become susceptible of human sustenance, bringing population and wealth to the state.

2. Wyo. Exh. WRIR DS-6 the Homestead Act of 1862 provided:

CHAP. LXXV. - An Act to secure Homesteads to actual Settlers on the Public Domain.

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Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, that any person who is the head of a family, or who has arrived at the age of twenty-one years, and is a citizen of the United States, or who shall have filed his declaration of intention to become such, as required by the naturalization laws of the United States, and who has never borne arms against the United States Government or given aid and comfort to its enemies, shall, from and after the first January, eighteen hundred and sixty-three, be entitled to enter one quarter section or a less quantity of unappropriated public lands, upon which said person may have filed a preemption claim, or which may, at the time the application is made, be subject to preemption at one dollar and twenty-five cents, or less, per acre; or eighty acres or less of such unappropriated lands, at two dollars and fifty cents per acre, to be located in a body, in conformity to the legal subdivisions of the public lands, and after the same shall have been surveyed:

Section 2: Affidavit.

that said entry is made for the purpose of actual settlement and cultivation, . . .

3. Wyo. Exh. WRIR DS-7, an excerpt from the Cong. Globe of May, 1862, p. 1938 (1939) wherein Mr. Pomeroy stated:

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This, then, Mr. President, is the question I propose to discuss, involved in the passage of this homestead bill, namely, that the speedy settlement of the country by actual occupants of the land, though they be "small-fisted farmers," taking a homestead without expense or benefit to the Government, will produce more revenue to the country, and vastly more increase its wealth and productiveness than any present or prospective sale, even though \$1.25 could be realized for every acre.

I need not disguise the fact that while this system of small farms of a quarter section of land each will greatly promote the wealth, strength and glory of the Republic, thus conducing to human happiness, near and remote, now and for all ages, still as a consequence and by virtue of the same law, it will secure the entire public domain to human freedom forever! The pioneer struggling amidst many discouragements upon the frontier prairies of the West, comes nearer obeying the divine injunction to "gain his bread by the sweat of his brow," than any other man.

4. Wyo. Exh. WRIR DS-12, the Desert Lands Act

of 1877 provided:

CHAP. 107. - An Act to provide for the sale of desert lands in certain States and Territories-

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That it shall be lawful for any citizen of

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the United States, or any person of requisite age "who may be entitled to become a citizen, and who has filed his declaration to become such" and upon payment of twenty-five cents per acre - to file a declaration under oath with the register and the receiver of the land district in which any desert land is situated, that he intends to reclaim a tract of desert land not exceeding one section, by conducting water upon the same, within the period of three years thereafter, provided however that the right to the use of water by the person so conducting the same, on or to any tract of desert land of six hundred and forty acres shall depend upon bona fide prior appropriation: and such right shall not exceed the amount of water actually appropriated, and necessarily used for the purpose of irrigation and reclamation: and all surplus water over and above such actual appropriation and use, together with the water of all, lakes, rivers and other sources of water supply upon the public lands and not navigable, shall remain and be held free for the appropriation and use of the public for irrigation, mining and manufacturing purposes subject to existing rights.

5. Wyo. Exh. WRIR DS-15, the Indian Allotment Act of 1887, provided:

And provided further, That at any time after lands have been allotted to all the Indians of any tribe as herein provided, or sooner if in the opinion of the President it shall be for the best interests of said tribe, it shall be lawful for the Secretary of the Interior to negotiate with such Indian tribe for the purchase and release by said tribe, in conformity with the treaty or statute under which such reservation is held, of such portions

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of its reservation not allotted as such tribe shall, from time to time, consent to sell, on such terms and conditions as shall be considered just and equitable between the United States and said tribe of Indians, which purchase shall not be complete until ratified by Congress, and the form and manner of executing such release shall also be prescribed by Congress: Provided however, That all lands adapted to agriculture, with or without irrigation so sold or released to the United States by any Indian tribe shall be held by the United States for the sole purpose of securing homes to actual settlers and shall be disposed of by the United States to actual and bona fide settlers only in tracts not exceeding one hundred and sixty acres to any one person, on such terms as Congress shall prescribe, subject to grants which Congress may make in aid of education:

6. Wyo. Exh. WRIR DS-17, the Carey Act of 1894

provided:

SEC. 4 That to aid the public land States in the reclamation of the desert lands therein, and the settlement, cultivation and sale thereof in small tracts to actual settlers, the Secretary of the Interior with the approval of the President, be, and hereby is, authorized and empowered, upon proper application of the State to contract and agree, from time to time, with each of the States in which there may be situated, desert lands as defined by the Act entitled "An Act to provide for the sale of desert land in certain States and Territories," approved March third, eighteen hundred seventy-seven, and the Act amendatory thereof, approved March third, eighteen

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hundred and ninety-one, binding the United States to donate, grant and patent to the State free of cost for survey or price such desert lands, not exceeding one million acres in each State, as the State may cause to be irrigated, reclaimed occupied, and not less than twenty acres of each one hundred sixty acre tract cultivated by actual settlers, within ten years next after the passage of this Act, as thoroughly as is required of citizens who may enter under the said desert land law. (Emphasis supplied).

Before the application of any State is allowed or any contract or agreement is executed or any segregation of any of the land from the public domain is ordered by the Secretary of the Interior, the State shall file a map of the said land proposed to be irrigated which shall exhibit a plan showing the mode of the contemplated irrigation and which plan shall be sufficient to thoroughly irrigate and reclaim said land and prepare it to raise ordinary agricultural crops and shall also show the source of the water to be used for irrigation and reclamation, and the Secretary of the Interior may make necessary regulations for the reservation of the lands applied for by the States to date from the date of the filing of the map and plan of irrigation, but such reservation shall be of no force whatever if such map and plan of irrigation shall not be improved. That any State contracting under this section is hereby authorized to make all necessary contracts to cause the said lands to be reclaimed, and to induce their settlement and cultivation in accordance with and subject to the provisions of this section. (Emphasis supplied).

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7. Wyo. Exh. WRIR DS-18, an excerpt from the Senate Committee Report of April 17, 1894 regarding the Carey Act of 1894 which stated:

If the States complied with the conditions of the Act, the lands would be reclaimed, settled upon, and disposed of to actual settlers in small tracts, thereby accomplishing the same purpose as is contemplated by the homestead laws of the United States.

* * *

The general desert-land law requires payment to the United States of \$1.25 per acre, but does not require actual settlement and residence on the land. This bill proposed to both reclaim and settle the lands reserved thereunder. The State will thereby accomplish under this law what the Federal desert-land law and homestead laws separately provide. As the State is required to devote the entire proceeds of these lands to aid their reclamation the additional condition of settlement by individuals on each 160-acre tract is the full equivalent of the Federal policy of disposing of the public domain to actual settlers, and fully justifies legislation in the form proposed by the bill.

This Senate Report included a letter from S. W. Lamoreux, Commissioner of the United States General Land Office, within which Mr. Lamoreux stated:

SIR: I have the honor to receive, by reference from the Department on February 15, 1894, for report in

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duplicate and return of papers, Senate bill No. 1591, "To provide for the reservation, sale, and settlement of certain lands in the several States and Territories," transmitted to the Department of the Hon. James H. Berry, chairman of the Senate Committee on Public Lands, with a request for the views of your department thereon.

In reply thereto I have to report that the object of the bill is to encourage the reclamation, settlement, and disposal of lands in the arid belt of the United States, which will not produce, without artificial irrigation, agricultural crops.

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Congress knew that successful settlement of the
West would require the use of water on the lands
so disposed

In the enacting of the land disposition statutes encouraging settlement of public lands in the west, Congress knew that successful settlement of these lands required water. This was especially true for farming and mining, the two predominant livelihoods of the region.

42-4

Tr. 11360-11378 (Devine). Evidence of Congress' knowledge that western public lands opened to settlement required water for these successful settlements can be found in the language of the disposition statutes and their legislative histories:

1. the Desert Lands Act cited in the support of Finding of Fact 42-3;
2. Wyo. Exh. WRIR DS-13, the 1891 Amendment to the Desert Lands Act which provided:

SEC. 4. That at the time of filing the declaration hereinbefore required the party shall also file a map of said land, which shall exhibit a plan showing the mode of contemplated irrigation, and which plan shall be sufficient to thoroughly irrigate and reclaim said land, and prepare it to raise ordinary agricultural crops, and shall also show the source of the water to be used for irrigation and reclamation. Persons entering or proposing to enter separate sections, or fractional parts of sections, of desert lands may associate together in the construction of canals and ditches for irrigating and reclaiming all of said tracts, and may file a joint map or maps showing their plan of internal improvements.

SEC. 5. That no land shall be patented to any person under this Act unless he or his assignors shall have expended in the necessary irrigation, reclamation, and cultivation thereof, by means of

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main canals and branch ditches, and in permanent improvements upon the land, and in the purchase of water rights for the irrigation of the same, at least three dollars per acre of whole tract reclaimed and patented in the manner following:

3. Wyo. Exh. WRIR DS-14, an excerpt from the Cong. Record of Feb., 1877, pp. 1964-1965, within which included the following excerpts from the Report of the Committee on Public Lands:

The Committee on Public Lands, to whom was referred House bill No. 4261, submit the following report:

There are extensive regions of country in the States and Territories named in the bill where there is not sufficient rainfall to render the cultivation of the soil possible without irrigation. In other words, large portions of the country from the Rocky Mountains west are deserts, but it has been ascertained that by irrigation these desert lands can be made exceedingly productive. The subject of irrigating these lands has attracted the attention of the Interior Department and Congress for many years, and various schemes have been proposed to Congress and to the States interested to secure aid for that purpose, but Congress has hitherto wisely, as we believe, refused to aid any of these projects further than to provide for examinations and reports upon the subject. In 1873, a joint resolution was passed providing for the appointment of a commission to make a report upon irrigation in California. That commission consisted of General Alexander, Professor Davidson, and

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Major Mendell. The report, which the commission submitted in 1874, (Executive Document No. 290, Forty-third Congress, first session,) contains much valuable information on the subject. The Agricultural Department has also collected much information, showing the value and importance of irrigation. But it is unnecessary to multiply arguments in favor of irrigation. The fact that worthless deserts can be made useful and productive by this means is sufficient to establish its desirability. Legislation on this subject has not been delayed because it was not necessary, but because of the great diversity of opinion as to what the legislation ought to be and to what extent the general and local governments should aid and control the same.

Experience has shown that the homestead and preemption laws afford no means of acquiring title to desert lands. Those laws require settlement and occupation as a prerequisite. Neither settlement nor occupation is possible without water. Irrigation must precede the settlement. But this is expensive, and settlers upon the public lands are unwilling to construct the necessary lands to which they have no title and no certainty of obtaining title.

Your committee believe that no further legislation is necessary to regulate the use of water for purposes of irrigation than already exists. A system has already grown up in the States and Territories included in the bill created by custom and legislation and sanctioned by the courts, which recognizes priority of appropriation as the rule governing the right to the use of water, and limits such appropriation to the water actually used, leaving the surplus free to other appropriators,

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and thus avoiding waste and preventing monopoly. Congress, after full consideration of this subject in 1866, sanctioned the local laws in the following language:

"Whenever, by priority of possession, rights to the use of water for mining, agricultural, manufacturing, or other purposes have vested and accrued, and the same recognized and acknowledged by the local customs, laws, and the decisions of courts, the possessors and owners of such vested rights shall be maintained and protected in the same; and the right of way for the construction of ditches and canals for the purposes herein specified is acknowledged and confirmed; but whenever any person, in the construction of any ditch or canal, injuries or damages the possession of any settler on the public domain, the party committing such injury or damage shall be liable to the party injured for such injury or damage." United States Revised Statutes, Section 2339.

Congressman Kelly stated at pp. 1965-66:

If this bill should pass or some bill of this kind become a law, instead of having a great desert extending from the Sierra Nevadas almost to the western boundaries of Nebraska, we shall have some places reclaimed from their desert condition and we shall have productive lands instead of a barren waste.

Congressman Sargent stated at p. 1966:

Now, we hope as the result of this bill (and we have some reason to hope from what we have observed in Lassen County where these peculiarities have existed) that communities will grow up in places where there is now absolutely a desert

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and where a sheep cannot be supported upon five acres of land, where the country simply lies bleaching and burning in the sun. We know by experiment that water produces fine crops upon these lands, that all the elements of soil are there except moisture. They need moisture in order to make them fertile.

Congressman Oglesby stated at p. 1968 :

What few desert lands there are in California are, I am led to believe, somewhat different from the general character of desert lands in the Territories. In the great interior basin, as we used to call it of California, and in all the Territories we know there are desert lands. The truth is that after we cross the one hundredth meridian, and I think after we cross the ninety-sixth or ninety-seventh, there is no land beyond that which can be called practically agricultural land, that is, land as farmers understand agricultural land, where the crops are produced by rainfall. We leave the humid region and strike the arid region not far from the ninety-seventh meridian, and as to all beyond that, I am almost willing to say I could agree with the Senator from Kansas, or any other Senator, that much, very much more than the larger portion of all that land might have safely been left unsurveyed.

4. Wyo. Exh. WRIR DS-19, an excerpt from the Cong. Record August, 1894, reporting the House debate regarding the Carey Act includes the following language:

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Mr. Pickler speaking at p. 8391:

Mr. Pickler. Yes. These lands are doing nobody any good now, and they never will do anybody any good until they are irrigated. (Emphasis supplied).

Mr. McRae speaking at p. 8391:

As the gentleman from South Dakota has said there are five or six hundred million acres of desert land - land worthless without irrigation, and very valuable with it. The United States owns the lands, but has no inclination to enter upon its reclamation. We want settlers upon all our public lands.

Page. 8396:

This Government owes it to the thousands it has deceived to begin the work at once, and by irrigation make that country what the settler had the right to believe it was when, fifteen or twenty years ago, he entered it under the alluring enticements of the homestead and preemption laws, to find after years of dreadful experience that he had been deceived. (Emphasis supplied).

What the Government had led him to believe was a country with sufficient rainfall, he learned to his sorrow, can be depended upon for a crop only at intervals. I say the Government deceived these people by failing to make a proper division of the country. Millions of acres of these western lands were opened to settlement under the provisions of the homestead and preemption laws that should have been opened under the desert land act. If this had been done no one would have been deceived, and these people would not have lost their all in a hopeless fight against fate.

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Mr. Bryan speaking at p. 8419:

Mr. Bryan. I was going to say, Mr. Speaker, that this proposition is to give to the States for this purpose land which is absolutely worthless unless water is brought upon it artificially, for there is nothing that we can conceive of that is more utterly useless than a tract of land without water. Such land is absolutely useless for cultivation. There are millions of acres which unless we can by some means bring water upon them lie there absolutely bare of vegetation.

Mr. Lucas speaking at p. 8431:

From the basis of these suggestions and arguments, we believe we are fully justified in concluding that a duty is imposed on Congress to make available all possibilities that will lead to such results. I believe that the practice of irrigation of the arid and semiarid lands, in its results to our common country, direct and indirect, can be properly classed as one of the important factors in the progress and development of our country; and will open up wide fields of splendid lands for homes for people who are crowded in the cities of the East. To reclaim these lands will provide homes for millions of people who are now homeless and landless. This bill is a long step in the right direction and I trust will pass the House without opposition.

5. Wyo. Exh. WRIR DS-21, the Reclamation Act of 1902 provided:

SEC. 1. That all moneys received from the sale and disposal of public lands in Arizona, California, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota,

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Oklahoma, Oregon, South Dakota, Utah, Washington and Wyoming, beginning with the fiscal year ending June thirtieth, nineteen hundred and one, including the surplus of fees and commissions in excess of allowances to registers and receivers, and excepting the five per centum of the proceeds of the sales of public lands in the above States set aside by law for educational and other purposes, shall be, and the same are hereby, reserved, set aside, and appropriated as a special fund in the Treasury to be known as the "reclamation fund," to be used in the examination and survey for and the construction and maintenance of irrigation works for the storage, diversion, and development of water of the reclamation of arid and semiarid lands in the said States and Territories, and for the payment of all other expenditures provided for in this Act:

SEC. 5. That the entryman upon lands to be irrigated by such works shall, in addition to compliance with the homestead laws, reclaim at least one-half of the total irrigable area of his entry for agricultural purposes.

SEC. 8. That nothing in this Act shall be construed as affecting or intended to affect or to in any way, interfere with the laws of any State or Territory relating to the control, appropriation, use, or distribution of water used in irrigation, or any vested right acquired thereunder, and the Secretary of the Interior, in carrying out the provisions of this Act, shall proceed in conformity with such laws, and nothing herein shall in any way affect any right of any State or of the Federal Government or of any landowner, appropriator, or user of water in, to, or from any interstate stream or the

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waters thereof: Provided, That the right to the use of water acquired under the provisions of this Act shall be appurtenant to the land irrigated and beneficial use shall be the basis, the measure, and the limit of the right.

U.S.C. title 43, sec. 372, 383)

- 6) Wyo. Exh. WRIR DS-22, an excerpt from the House Committee Report of April 7, 1902 regarding the Reclamation Act of 1902 which stated:

We have now reached a condition of affairs, at least in some portions of the arid region, where it is necessary to undertake enterprises of considerable magnitude and of such character as to clearly place them beyond the reach of private enterprise under the American system of land laws.

The force and importance of this latter feature of the situation will be realized when it is remembered that it has been our time-honored policy to provide for the settlement of our public lands in small tracts to actual home builders. The success of a large, extensive irrigation enterprise depends upon the control of the land to be watered. If we were willing to abandon our time-honored policy of inviting and encouraging small individual land holdings, and were prepared to turn over all of the public lands under a large irrigation system to the control of a single individual or a corporation, we could undoubtedly secure the construction of extensive works which can not be profitable constructed by private enterprise under present conditions, but no one contemplates paying so stupendous a price as this for irrigation development. (p. 3).

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THE HISTORY OF THE BILL

The national platforms of 1900 of the three political parties having declared in favor of the undertaking by the National Government of the work of reclaiming the arid lands and holding the same for actual settlers, the Representatives from the West made strenuous efforts in the Fifty-sixth Congress to secure at least a partial fulfillment of these pledges, the respective planks in the national platforms being as follows:

The Republican response to the bill:

In further pursuance of the constant policy of the Republican party to provide free homes on the public domain, we recommend adequate national legislation to reclaim the arid lands of the United States, reserving control of the distribution of water for irrigation to the respective States and Territories.

The Democratic response to the bill:

We favor an intelligent system of improving the arid lands of the West, storing the waters for purposes of irrigation and the holding of such lands for actual settlers.

In his message to the Fifty-seventh Congress, President Roosevelt clearly and vigorously urged the enactment of legislation in aid of the development by irrigation of the great arid portion of our country, his language being, in part, as follows:

It is as right for the National Government to make the streams and rivers of the arid region useful by engineering works for water storage as to make useful the rivers and harbors

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of the humid region by engineering works of another kind. The storing of the floods in reservoirs at the headwaters of our rivers is but an enlargement of our present policy of river control, under which levees are built on the lower reaches of the same streams.

* * *

The reclamation and settlement of the arid lands will enrich every portion of our country, just as the settlement of the Ohio and Mississippi valleys brought prosperity to the Atlantic States. The increased demand for manufactured articles will stimulate industrial production, will widen home markets and the trade of Asia will consume the larger food supplies and effectually prevent Western competition with Eastern agriculture. Indeed the products of irrigation will be consumed chiefly in upbuilding local centers of mining and other industries which would otherwise not come into existence at all. Our people as a whole will profit, for successful home making is but another name for the upbuilding of the nation. (pp. 4-5).

Section 8 recognizes State control over waters of nonnavigable streams such as are used in irrigation, and instructs the Secretary of the Interior in carrying out the provisions of the act to conform to such laws. It also provides that nothing in the act shall be held as changing the rule of priorities on interstate streams. In order that the water rights acquired under the provisions of the act shall be of the character most approved by centuries of irrigation practice, and such as will absolutely insure the user in his right and prevent the possibility of speculative use of water

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rights, the character of the right which is contemplated under the act is clearly defined to be that of appurtenance or inseparability from the lands irrigated and founded on and limited by beneficial use. Under this section uniformity of record of the rights is secured and the rules of priorities of rights are not disturbed, while the cost of maintaining the administrative machinery of water distribution is placed on users and the States; the Government is free from all expense or responsibility when projects are completed and paid for.

The character of the water rights contemplated being clearly defined, the Secretary of the Interior would not be authorized to begin construction of works for the irrigation of lands in any State or Territory until satisfied that the laws of said State or Territory fully recognized and protected water rights of the character contemplated. This feature of the bill will undoubtedly tend to uniformity and perfection of water laws throughout the region affected. (pp. 6-7).

THE DUTY OF THE GOVERNMENT

The majority of the committee are of the opinion that an imperative duty devolves upon the American Congress to lend assistance to the development of the great arid and semiarid portion of our country now but sparsely settled, but capable when fully developed of maintaining a large and prosperous population. In this territory must be found homes for the sons of the farmers of the Eastern and Middle States who may desire to take Horace Greeley's advice to "Go West and grow up with the country." In this region lies the best and most hopeful field for an increased market for American

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manufactures, not only among those who shall occupy the irrigated farms, but also among the great mining and urban populations which will be established there.

To aid in the reclamation of the desert and in establishing there a homeowning population will not only vastly increase the strength and prosperity of the entire nation, but is a duty which the Government can not escape, which is paramount in importance to every other duty now laid upon the American people. It is a duty which every government since the dawn of recorded history occupying an arid region has recognized and fulfilled. Surely this great and enlightened Government will not be less faithful in assuming its responsibilities in this regard than were ancient Egypt and Assyria, and in latter days have been the Governments of India, Spain, and Italy. (pp. 16-77).

7. Wyo. Exh. WRIR DS-23, an excerpt from the Cong. Record, June, 1902 reporting the House debate on the Reclamation Act of 1902, wherein it states:

Up to the time of the acquisition of Louisiana all of our territory was within the humid region, where crops suited to the climate and the soil could be readily produced by the clearing of the forests, and upon our vast extent of prairies in the Mississippi Valley by the turning of the sod and the planting of the seed; but the acquisition of the Western territory brought us face to face with a new problem, that of reclaiming the vast areas of arid lands and making them habitable, though it is true that

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neither the statesmen responsible for our early expansion or the hardy pioneers who first located in or explored the new region understood or appreciated the practicability or possibility of such reclamation.

THE EARLY DAYS OF IRRIGATION IN THE WEST

In the early days of irrigation in the West only the waters of the smaller swift-flowing streams were utilized, as from these, water was easily and cheaply diverted and applied to the lands of the adjacent valleys. As railroads were built and population pressed forward from the humid regions, attracted by the climate and resources of the country, the mining and trading centers grew into cities and towns and the demand for agricultural products increased. From this increased demand there came slowly an increased knowledge of the agricultural and horticultural possibilities of the region under irrigation, and gradually larger, more difficult, and more expensive enterprises were planned and executed, utilizing not only the natural flow of streams but waters conserved by storage as well, until practically every stream of any size in the arid region has been levied upon to a greater or less extent by the irrigator.

Slow as we were as a people to appreciate and understand the benefits of irrigation when its advantages and its necessity over a large portion of our country became clearly apparent, we took hold of the subject with characteristic energy and enterprise, and long before all of the wonderfully fertile humid lands of the Mississippi Valley had been settled and developed the Western pioneer began the conquest

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of the desert. Neither physical obstacles nor inherited water laws fatal to irrigation could long withstand his energy or stand in the way of progress. The one he overcame; the other he abrogated or modified, with the result that, taking into consideration the beginning, our progress has been reasonably satisfactory.

Mr. Mondell stated at p. 6679:

WATER RIGHTS

The main-line canals having been constructed by the Government, the entryman or landowner would proceed to the construction of such laterals as were necessary for the irrigation of his own tract and the preparation of the same to receive the water. The water having been beneficially applied and payments having been made under the provisions of the bill, the water right would become appurtenant to the land irrigated and inalienable therefrom. The water rights provided by the act are of that character which irrigation experience has demonstrated to be the most perfect.

The settler or landowner who complies with all the conditions of the act secures a perpetual right to the use of a sufficient amount of water to irrigate his land, but this right lapses if he fails to put the water to beneficial use and only extends to the use of the water on and for the tract originally irrigated. . .

LOCAL CONTROL OF APPROPRIATION AND DISTRIBUTION OF WATER.

Every act since that of April 26, 1866, has recognized local laws and customs appertaining to the appropriation and distribution of water used in irrigation, and it has been deemed wise to continue our policy in this regard. . .

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Nothing is more important in an irrigation system than the character of the water right, and while some of the States in the region in question recognize rights differing from those provided in this act, rights of the character herein provided are recognized as being the best and are fully protected by the local laws and tribunals.

Mr. Mondell stated at p. 6680:

THE VIEW CONGRESS HAS TAKEN

A review of Congressional action in the disposition of the public lands and their proceeds for the past forty years clearly demonstrates two facts: First, that the power of Congress over the disposition of the public lands is plenary: second, that the public lands and the proceeds thereof have been considered, not as a source of public revenue, but as a trust to be used for the settlement and development of the country and for the benefit of the people.

8. Wyo. Exh. WRIR DS-26, an excerpt from the Cong. Record December, 1916, reporting the House debate on the Stock Raising Homestead Act, Mr. Ferris stated at p. 684:

Roughly, there are 300,000,000 acres of public lands in the 15 public-land States of the West and approximately 375,000,000 acres in Alaska. Some of this land is totally worthless and will not be taken up under this law or any other law for homesteading purposes. However, a large portion of it, in my opinion, will be utilized under this law. It is the largest unit that has

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ever been applied to the entire public-land area. It is found necessary due to the arid character of the lands remaining undisposed of. All over the country there is a cry going up from homeless citizens desiring to acquire a home. All through the sparsely settled States of the West they are appealing for more people to come there and take up residence among them. This legislation will go a long ways toward bringing the landless man in contact with the vacant public domain of this country. It will afford him a unit large enough to enable him to make a living for his family and aid in the development of the West. If the law accomplishes this, we shall feel proud of our labors. I feel confident it will work great good, furnish thousands of homes for homeless citizens, and enable them to get a start in life that they otherwise could not secure.

Mr. Mondell speaking at p. 686:

Mr. Chairman, speaking in general of this legislation I want to say that the people of the western and semiarid country have looked forward for a number of years with hopeful expectation toward the passage of legislation which would enlarge the area of the homestead, covering lands which are not of certain value under cultivation, but which are primarily of value for grazing purposes. We hope, of course, that all of the settlers on these lands will make an attempt in some way to cultivate a portion of their land, but the major portion of the land which will be enterable under this law will be land where the dependence must be in the main upon stock raising. (Emphasis supplied).

Mr. Mondell speaking at p. 687:

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Mr. Mondell. There are lands in the Western States made subject to entry under good living on 640 acres. To do that in most cases it will be necessary to cultivate some crops, and that can be done on a portion of almost any entry that would be justified under this law. There are, of course, vast areas where one could not make a living for a family on 640 acres. Such land should not be entered. (Emphasis supplied).

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9. See also the references to Wyo. Exhs. WRIR DS-17, DS-18 and DS-20 in the support of Finding of Fact 42-3.

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42-5

Congress intended that water for western settlement be obtained under state law

Congress intended that the water for lands disposed of for western settlement be appropriated under territorial, and later state, law.

Evidence of Congress' intent that settlers of the western public lands obtain the necessary water in accordance with local law can be found in the language of the land disposal statutes.

1. Wyo. Exh. WRIR DS-8, a copy of the Mining Act of 1866 wherein it states in sections 1 and 9:

SEC. 1. Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the surveyed and unsurveyed, are hereby declared to be free and open to exploration and occupation by all citizens of the United States, and those who have declared their intention to become citizens, subject to such regulations as may be prescribed by law, and subject also to the local customs or rules or miners in the several mining districts, so far as the same may not be in conflict with the laws of the United States.

SEC. 9. And be it further enacted, That whenever, by priority of possession, rights to the use of water for mining, agricultural, manufacturing, or other purposes, have vested and accrued, and the same are recognized and acknowledged by the local customs, laws, and the decisions of courts, the possessors and owners of such vested rights shall be maintained and protected in the same; and the right of way for the construction of ditches and canals for the purposes aforesaid is hereby acknowledged and confirmed: Provided, however, That whenever, after the passage of this act, any person or persons shall, in the construction of

any ditch or canal, injure or damage the possession of any settler on the public domain, the party committing such injury or damage shall be liable to the party injured for such injury or damage.

2. Wyo. Exh. WRIR DS-12, the Desert Lands Act of 1877, provided:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That it shall be lawful for any citizen of the United States, or any person of requisite age "who may be entitled to become a citizen, and who has filed his declaration to become such" and upon payment of twenty five cents per acre - to file a declaration under oath with the register and the receiver of the land district in which any desert land is situated, that he intends to reclaim a tract of desert land not exceeding one section, by conducting water upon the same, within the period of three years thereafter, provided however that the right to use of water by the person so conducting the same, on or to any tract of desert land of six hundred and forty acres shall depend upon bona fide prior appropriation: and such right shall not exceed the amount of water actually appropriated, and necessarily used for the purpose of irrigation and reclamation: and all surplus water over and above such actual appropriation and use, together with the water of all, lakes, rivers and other sources of water supply upon the public lands and not navigable, shall remain and be held free for the appropriation and use of the public for irrigation, mining and manufacturing purposes subject to existing rights.

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3. Wyo. Exh. WRIR DS-21, the Reclamation Act of 1902, provided:

SEC. 8. That nothing in this Act shall be construed as affecting or intended to affect or to in any way interfere with the laws of any State or Territory relating to the control, appropriation, use, or distribution of water used in irrigation, or any vested right acquired thereunder, and the Secretary of the Interior, in carrying out the provisions of this Act, shall proceed in conformity with such laws, and nothing herein shall in any way affect any right of any State or of the Federal Government or of any landowner, appropriator, or user of water in, to, or from any interstate stream or the waters thereof: Provided, That the right to the use of water acquired under the provisions of this Act shall be appurtenant to the land irrigated and beneficial use shall be the basis, the measure, and the limit of the right.

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42-6

Substantial portions of lands disposed of in the
Big Horn Basin are served by state-awarded water
rights

Private land holdings subject to state-awarded certificates or permits within the Big Horn Basin were patented under many different federal land disposal statutes. The list includes the following:

<u>DISPOSITION STATUTE</u>	<u>TOTAL NO. OF ACRES PATENTED UNDER STATUTE</u>
AIRPORT ACT	209.6800
CAREY	75,112.3250
CASH ENTRY	187,434.4910
COAL ENTRY	40.0000
CEMETARY AND PARK	8.1300
CEMETARY SITE	32.9600
CASH ENTRY TOWN	163.3400
DESERT LAND ENTRY	23,621.0800
FEDERAL AIRPORT	234.8000
FOREST LANDS	287.3000
FOREST EXCHANGE	453.0600
HOMESTEAD ENTRY	133,091.1718
INDIAN ALLOTMENT TRACT	2,071.6900
INDIAN ALLOTMENT FEE	21,381.9300
IN LIEU SELECTION	1,078.0000
INDIAN LIEU TRACT	64.0000
MINERAL ENTRY	187.0500
RECREATION AND PP	130.7000
PRIVATE RECLAMATION	1,687.3687
PUBLIC SALE PATENT	965.5900
PATENT EXCHANGE	222.7400

QUIT CLAIM DEED	30.0000
RECLAMATION HOMESTEAD ENTRY	118,891.9562
RAILROAD GRANT	733.0400
RECLAMATION SALE	21,877.8800
STATE GRANT	2,548.9900
STOCK RAISING HOMESTEAD ENTRY	8,005.2401
STATE SELECTION	20,712.8510
STATE PATENT EXCHANGE	124.0000
TIMBER CULTURE	676.7000
TOWNSHIP TRACT	1.0000

42-6

Wyo. Exhs. WRIR MV-11 and MV-4.

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Claimed Indian reserved rights will defeat
congressional intent inherent in disposition statutes

If the Indian reserved rights claimed by the United States and Tribes during their cases-in-chief are granted and exercised, under an 1868 priority, vast areas disposed of by Congress in its settlement program will be deprived of water. For example, in a statistically dry year in the Big Horn Basin, the following acres of land disposed of by Congress through the land disposition statutes will be deprived of water for which they are entitled to under state-awarded water rights:

<u>STATUTE AUTHORIZING DISPOSITION OF LANDS AFFECTED</u>	<u>TOTAL NO. OF ACRES AFFECTED UNDER THIS STATUTE</u>
CAREY	662.9076
CASH ENTRY	84,632.1596
DESERT LAND	5,380.3686
FOREST LANDS	56.5800
FOREST EXCHANGE	35.0000
HOMESTEAD ENTRY	36,640.3005
INDIAN ALLOTMENT TRACT	1,881.9800
INDIAN ALLOTMENT FEE	18,861.9400
IN LIEU SELECTION	408.1100
INDIAN LIEU TRACT	62.0000
PRIVATE RECLAMATION	1,629.5987
PUBLIC SALE	473.8369
PATENT EXCHANGE	2.5584
QUIT CLAIM DEED	30.0000
RECLAMATION HOMESTEAD ENTRY	53,205.4910
RAILROAD GRANT	63.3705
RECLAMATION SALE	16,650.8650
STATE GRANT	198.8484
STOCK RAISING HOMESTEAD ENTRY	3,704.2565
STATE SELECTION	3,934.1461
TIMBER CULTURE	12.5000
TOWNSHIP TRACT	0.4100

In a statistically average year the following acres of land disposed of by Congress through the land disposition statutes will be deprived of water for which they are entitled under state-awarded water rights:

<u>STATUTE AUTHORIZING DISPOSITION OF LANDS AFFECTED</u>	<u>TOTAL NO. OF ACRES AFFECTED. UNDER THIS STATUTE</u>
CASH ENTRY	63,094.4802
DESERT LAND ENTRY	2,747.1095
HOMESTEAD ENTRY	23,899.6109
INDIAN ALLOTMENT TRACT	1,855.3300
INDIAN ALLOTMENT FEE	16,916.2700
IN LIEU SELECTION	384.0000
INDIAN LIEU TRACT	62.0000
PRIVATE RECLAMATION	1,628.3687
PUBLIC SALE	441.5900
QUIT CLAIM DEED	30.0000
RECLAMATION HOMESTEAD ENTRY	35,058.2762
RAILROAD GRANT	8.0000
RECLAMATION SALE	15,764.8550
STATE GRANT	48.0000
STOCK RAISING HOMESTEAD ENTRY	3,582.8701
STATE SELECTION	1,513.4400
TIMBER CULTURE	12.5000

42-7 Tr. 9645-9647 (Fassett); Tr. 10008-10029 (Fassett); Wyo. Exhs. WRIR MF-8 2nd Rev., MF-9 Rev. and MF-10 2nd Rev.; Tr. 10493-10515 (Voeller); Wyo. Exhs. WRIR MV-1, MV-2A, MV-8A 2d Rev., MV-8B 2nd Rev., MV-9A 2nd Rev., MV-9B 2nd Rev., MV-71A 2nd Rev., MV-71B 2nd Rev., MV-73A 2nd Rev., MV-73B 2nd Rev., MV-77A 2nd Rev., MV-77B 2nd Rev., MV-11 and MV-11A.

Wyo. Exh. MV-8-A, 2nd Rev. contains the number of acres in the Big Horn Basin which attach to state-awarded water rights which will be affected in a statistically dry year according to the state's Integrated River Systems Operation Model.

Wyo. Exh. MV-9-A, 2nd Rev. shows the same information for a statistically average year.

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42-8

Conflicts between claimed Indian reserved rights and state-awarded rights are markedly reduced by only granting reserved rights for lands held continuously in trust since 1868

A minimum of land disposed of under federal land disposition statutes will be deprived of water if the Court grants reserved rights in the amounts established by the State of Wyoming and only awarding reserved rights to unallotted lands held continuously in trust since 1868. By so limiting the reserved rights, Congress' intent to encourage settlement of western public land can be honored as well as Congress' intent in establishing the Wind River Indian Reservation.

42-8

Wyo. Exh. WRIR-MV-3000, illustrates the reduction in acreage affected by Fassett 2000 Series Exhibits. Examples of this acreage reduction are:

1. a 98.98% reduction of Cash Entry Act lands affected;
2. a 98.70% reduction of Desert Lands Act lands affected; and
3. a 97.99% reduction of Homestead Entry Act lands affected if Wyoming's evaluation set forth in Wyo. Exh. WRIR MF-2002B is implemented.

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In *Morton v. Mancari*, 417 U.S. 535 (1974), the United States Supreme Court stated:

. . . The courts are not at liberty to pick and choose among congressional enactments, and when two statutes are capable of co-existence, it is the duty of the courts, absent a clearly expressed congressional intention to the contrary, to regard each as effective.

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Findings of Fact
Relating to
Claims for Non-Primary
Purposes

43-1 In addition to the claims addressed above, the United States and Tribes sought water for the following purposes:

- (a) aesthetics and wildlife;
- (b) fisheries; and
- (c) mineral development.

Although the Court has found that these are not primary purposes of the Wind River Indian Reservation (and therefore not a proper basis of a decree awarding reserved water rights), the Court makes findings of fact concerning the amounts of water necessary to satisfy the minimal needs of these purposes in order to allow a complete resolution without the need for further factual hearings should any of the Court's Conclusions of Law herein concerning the primary purposes of the Reservation be reversed by a reviewing court.

Findings of Fact
Relating to
Aesthetics and Wildlife

44-1 Purposes alleged

In its Legal Parameters for United States' Statement of Claims, the United States alleged that aesthetics and wildlife maintenance is one of the purposes included in Congress' goal of making the Wind River Reservation a permanent home for the Tribes. The United States claimed the right to maintain the entire natural flow of all streams within a designated area in order to maintain aesthetics and wildlife. The Tribes support this claim but did not seek water in addition to the amounts claimed by the United States.

44-1 U.S. Statement of Claims filed March 6, 1980 at pp. 13-15;
Legal Parameters For United States' Statement of Claims
filed March 6, 1980 at p. 6; Pretrial Brief of the
Shoshone and Arapahoe Tribes With Respect to Purposes and
Legal Standards For Measurement of the Tribes' Reserved
Water Rights filed April 7, 1980 at p. 9.

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44-2 Extent of Claims

The United States and Tribes claim the entire flow of 64 streams and other named and unnamed streams depicted on United States Exhibit C-7. In addition, they claim water to maintain the level of all lakes within the Reservation in their natural state except Bull Lake, Ocean Lake, Boysen Reservoir, Ray Lake, Washakie Reservoir and Pilot Butte Reservoir, as well as sufficient ground water to maintain the surface condition and the well levels of the Wind River Indian Reservation in their naturally occurring state. All these claims are for the purposes of maintaining aesthetics and wildlife.

44-2 U.S. Statement of Claims filed March 6, 1980 at pp. 13-15;
Statement of the Shoshone and Arapahoe Tribes Concerning
the Measurement of Tribal Reserved Water Rights filed
April 7, 1980 at p. 1.

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44-3 No evidence offered in support of wildlife claims

During the trial of this matter, neither the United States nor the Tribes provided any support for their wildlife claims. While the Court heard testimony regarding aesthetics, none was offered by the United States or the Tribes with respect to wildlife.

44-3 The United States called Mr. Richard Harbour to testify as to the maintenance of aesthetics but he offered no support for the wildlife claims. Tr. 62-130 (Harbour). The State called Dr. Steve Martin to testify with respect to the United States' wildlife claims. Dr. Martin was admitted as an expert in terrestrial ecology with a wide-ranging background in wildlife ecological studies. Tr. 11212-11219 (Martin); Wyo. Exh. WRIR WM-1. Dr. Martin essentially testified that the claims made for the purposes of maintaining wildlife were far beyond what would be required. Tr. 11248-11251 (Martin).

His conclusions were reached after examining the character of the streams in the areas of the claimed reaches, and by applying the Tennant methodology for determining instream flow requirements. This method has been widely used for designating instream flows for such purposes. Tr. 11244-11245 (Martin).

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44-4 Aesthetics experts

In the area of aesthetics, the United States offered the testimony of one witness, Mr. Richard Harbour, who was accepted as an expert in natural resources, management and planning.

The State of Wyoming called Mr. Tom Keith to testify to the water requirements for aesthetics. Mr. Keith was accepted as an expert in environmental planning.

The Shoshone and Arapahoe Tribes called no witnesses in this area.

44-4 See Tr. 62-76 (Harbour); 11398 et seq. (Keith).

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44-5 Methodology for determining areas with aesthetic values

Mr. Harbour identified United States Exhibit C-7 which outlines the "aesthetic" areas on the Reservation. These areas were selected by Mr. Harbour based solely on his subjective judgment of aesthetics. He used no recognized or accepted methodology for evaluating the qualities of the region but chose instead to rely upon his own memory and personal preferences.

Comparing the area depicted in United States Exhibit C-7, with the standards used by the Bureau of Land Management and other federal agencies, it becomes plain that the United States' selection of aesthetic areas has been capricious. Mr. Keith, using a system developed by the BLM for classifying land, pointed out large areas of high aesthetic value which the United States excluded and large areas of low aesthetic value which the United States included.

The areas which have outstanding scenic value as defined by the BLM system are depicted in blue in Wyoming Exhibit WRIR-AK-1, identified by Mr. Keith.

44-5 The United States and Tribes presented their case for aesthetics based on the subjective tastes of Mr. Harbour. Tr. 134. Mr. Harbour had no formal training in the area of aesthetics (Tr. 73) and no previous experience in designating wilderness as aesthetic area (Tr. 72). He did not use any of the recognized and accepted methodologies for evaluating the aesthetic qualities of an area (Tr. 125). He admitted that each person using his own standards and definitions (as he did) would create problems (Tr. 123).

Mr. Harbour made no surveys of public opinion on the reservation or elsewhere to determine aesthetic quality (Tr. 133-34). Finally, he did not designate aesthetic areas from a field study or by applying standards, but identified the aesthetic regions based purely upon his own memory and recollection (Tr. 137):

(By Mr. Merrill)

Q. In other words, you decided what you liked and that's what's on the map?

(By Mr. Harbour)

A. Essentially.

Tr. 135.

On the other hand, Wyoming offered the testimony of Tom Keith who has seven years professional experience in the management of interdisciplinary environmental studies including the application of recognized visual management

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systems. (Tr. 11399). He made four visits to the Reservation, including aerial reconnaissance, taking pictures and field notes (Tr. 11407).

Mr. Keith used a system for determining areas of aesthetic value developed by the BLM. (Tr. 11409) This system classifies land according to seven landscape elements: Land form, vegetation, water, color, influence of adjacent scenery, scarcity or uniqueness of the landscape, and influence of cultural modifications. (Tr. 11411). The BLM has used its system to classify approximately 150 million acres. (Tr. 11414).

The areas selected by the United States and Tribes for aesthetic value are irrational. The United States and Tribes excluded areas of high aesthetic value such as Bull Lake, Bull Lake Creek Area, Wind River Canyon and the south fork of Owl Creek (Tr. 11421), but included thousands of acres of land of very low aesthetic value (Tr. 11426) (Keith), such as the area known as Wise Flat which is featureless landscape with little variety in terms of vegetation, land form and color. (Tr. 11426-27, 11429-30). Photographs which demonstrate these inconsistencies were admitted to evidence. Wyo. Exhs. WRIR AK-2 through AK-7.

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The subjectiveness and arbitrariness of the United States' selection of areas with aesthetic value is apparent when compared to the area identified by Wyoming in Wyo. Exh. WRIR-AK-1. The areas shown in that exhibit were identified through the use of a recognized system developed by the BLM which utilizes established and objective factors for evaluating aesthetic quality. For this reason, the aesthetic area claimed by the United States and Tribes and depicted in United States Exh. C-7 should be rejected.

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44-6 Quantification of the water needed for aesthetics

In addition to classifying the land incorrectly, the United States has not applied the proper standard for quantifying the amount of water needed for aesthetics. Mr. Harbour's testimony shows that he based his conclusions on the "optimum" level of water flow. However, the correct standard is the minimum amount necessary to meet the needs of the reservation. Applying that standard, Mr. Keith concluded that, at most, only 60% of a stream's average annual flow is necessary to maintain aesthetic qualities.

44-6 Even if the Tribes and United States had proved their designated areas to be of aesthetic value, they have not applied the proper standard in order to quantify the water necessary for aesthetic purposes.

Mr. Harbour testified that 100% of the stream flow in the area was needed for aesthetic purposes. By his own admission, Harbour made no study of how the aesthetic qualities of the claimed areas would be affected by varying levels of streamflow (Tr. 125-127). He did not consider the streambed configuration (Tr. 127) or other factors which determine how a stream's appearance changes in response to change in flow. Finally, he made no studies and offered no evidence to support his assertion that 100% of the flow is required to sustain riparian vegetation. (Tr. 128).

The United States Supreme Court has held that the amount of water impliedly reserved is the minimum necessary to meet the needs of the reservation. Cappaert v. United States, 426 U.S. 128 (1976). The United States and Tribes have offered no probative facts on the issue of minimal needs. In fact, Mr. Harbour testified at one point that he had determined the "optimum level."

(By Mr. Merrill)

Q Did you make any determination as to what the effect on the vegetation would be if the natural flows were not preserved at any specific level of natural flow percentage?

(By Mr. Harbour)

A Specifically it is no, but if the streams were less than full, the vegetation would not sustain itself, you know, as it is.

Q Did you make any determination of the amount of wildlife habitats that would be available in these areas at different levels of stream flow?

A Yeah, that was taken into consideration under the same, as the previous question. If the habitat is not as desirable, species will not be in there -- in the same abundance as it is in its optimum level.

Tr. 127-28 (emphasis added).

The Cappaert test is the minimum level, not the optimum level.

In contrast, the State of Wyoming presented evidence that the maintenance of the aesthetic quality of an area would not require the full flow of the stream. According to Tom Keith, some streams only carry water intermittently as, for example, in the spring during the snow melt. (Tr. 1140). Other streams are difficult to see because they are lined and overgrown with shrubs and trees. (Tr. 11440-41). Furthermore, some changes in the flow are difficult to detect (Tr. 11441). Once water fills the

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width of the channel, additional water increases the depth and velocity of the river (Tr. 11443, 11460), but does not significantly affect the river's visual appearance. (Tr. 11443, 11462) (Keith). At most, a stream only requires 60% of its average flow to maintain its aesthetic qualities, (Tr. 11442) and it will not have a dried-up appearance until its flow falls below 20% (Tr. 11443-44) (Keith).

In reaching his conclusion that, at most, only 60% of the streamflow is required for aesthetic quality, Mr. Keith relied in part on the published findings of Don Tennant of the U.S. Fish and Wildlife Service. Tennant recommended that 60% of average streamflow would maintain outstanding aesthetic quality. (Tr. 11442).

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44-7 U.S. claim for entire flow inconsistent with present and proposed land management policies

A claim for 100% of the flow in the area depicted in U. S. Exh. C-7 is not consistent with existing and proposed management practices. Much of the claimed aesthetics area is managed in a multiple use manner. It includes roads, high voltage transmission lines, water storage projects and ranch buildings. Timber has been harvested in some of the area.

The United States and Tribes propose to continue multiple use management of much of the claimed aesthetic area. As depicted in Wyo. Exh. WRIR-AK-1, claims for mining and recovery of gypsum and phosphate rock overlap substantial portions of the aesthetic area. Wyoming's expert, Tom Keith, testified that these overlapping claims for preservation and mineral development are mutually inconsistent. The United States and Tribes acknowledge this inconsistency in their findings of fact which state that ultimately the Tribes will have to choose between preserving the aesthetics area and developing the gypsum and phosphate rock resources.

In spite of existing and proposed uses within the aesthetic area that are not compatible with preservation,

the United States and Tribes have singled out a single resource water for preservation. Preservation, a complete restriction of any use, is only logical in an area managed as a wilderness. No party contends that the claimed aesthetic area is a wilderness area. Mr. Harbour testified that the aesthetics area is "definitely not a wilderness area."

44-7 See Tr. 11463, 115 (multiple use of aesthetics area); Tr. 11472, Tribes' Proposed Findings of Fact 253, 263, United States' Proposed Findings of Fact 600 (inconsistency of aesthetics preservation and mineral development); Tr. 128 (Harbour).

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44-8 Roadless area

In contrast to management of most of the claimed aesthetics area, a large area has been set aside on the Reservation for management as a wilderness. This area is known as the Wind River Reservation Roadless Area and it includes 180,387 acres.

The Roadless Area is located in the high, inaccessible Wind River Mountain Range in the southwest portion of the Reservation. The area is highly scenic and includes lakes, peaks and spectacular scenery. Most of the area was designated as Class A scenic quality (the highest rating) by Wyoming's expert Tom Keith.

The Roadless Area is primitive, inaccessible country which is managed as wilderness. It is adjacent to three designated wilderness areas that are so managed by the U.S. Forest Service. The United States' witness, Richard Harbour, testified that the Roadless Area is the only portion of the Reservation which is subject to restrictive land use regulations. Therefore, the Roadless Area should be accepted as the only area on the Reservation where a reservation of minimum stream flows for aesthetics preservation is appropriate.

44-8 See Tr. 105-07 (restrictions and acreage); Tr. 11476
(scenery and Forest Service wilderness); Tr. 11475
(Keith).

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44-9 Court's conclusions regarding water for aesthetics and wildlife

The Court's Findings concerning water requirements for aesthetic and wildlife may be summarized as follows:

With respect to aesthetics, the boundary shown in United States Exhibit WRIR C-7 is rejected as having been defined in an arbitrary and capricious manner.

The claim for the entire natural flow is far in excess of the amount required to maintain aesthetic quality. No more than 60% of the average flow is required to maintain aesthetic quality. The United States' claim is based on a concept of preservation, as in a wilderness area, and is not based on that amount reasonably needed. This not only violates the minimal need standard which controls the quantification of a reserved water right but is inconsistent with existing and proposed management of the majority of the claimed aesthetic area.

Given the preservationist nature implicit in the United States' and Tribes' claims, a minimum streamflow reservation should only be applied where it is consistent and compatible with existing and proposed management practices which seek to maintain an area in a pristine nature. The only portion of the Reservation which meets this stan-

dard is the Roadless Area. Therefore, while a claim for minimum streamflow is appropriate in the Roadless Area, it is clearly inappropriate and should be rejected for all other areas of the Reservation.

With respect to wildlife, the failure of the United States and Tribes to present any evidence to support this portion of the claim can only result in a finding that no water is reserved for this purpose.

44-9 This Finding is based upon Findings of Fact 44-1 through
44-8, supra.

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Findings of Fact
Relating to Fisheries

45-1 Nature of United States' claim

In its Legal Parameters for United States' Statement of Claims, the United States alleged that fisheries optimization is one of the purposes included in Congress' goal of making the Wind River Indian Reservation a permanent home for the Tribes. The United States claimed the right to optimum instream flows in varying amounts and locations throughout the Reservation in order to maintain fisheries. The Tribes supported this claim but did not seek water for fisheries in addition to the amounts claimed by the United States.

45-1 United States' Statement of Claims filed March 6, 1980 at pp. 5-9; Legal Parameters for United States' Statement of Claims filed March 6, 1980 at p. 6-7; Pretrial Brief of the Shoshone and Arapahoe Tribes with Respect to Purposes and Legal Standards For Measurement of the Tribes' Reserved Water Rights filed April 7, 1980 at p. 9.

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45-2 Evidence in support of United States' claim

In support of this claim, the United States presented the testimony and exhibits of Mr. David Vogel. While Mr. Vogel was accepted by the Court as an expert in fisheries management biology, he had no previous experience quantifying instream flow needs for fisheries. Using a portion of the new "incremental methodology" developed by the Fisheries Assistance Group of the United States Fish and Wildlife Service in Fort Collins, Colorado, Mr. Vogel testified about his instream flow recommendations for selected rivers and streams on the Wind River Indian Reservation.

45-2 Tr. 6332-6341, 6345 (Vogel); U.S. Exh. WRIR C-280.

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45-3 Wyoming's expert in fisheries biology and instream flow methodology

Mr. James Sinning testified on behalf of the State of Wyoming concerning instream flows for fisheries on the Wind River Indian Reservation. The Court accepted Mr. Sinning as an expert in fisheries biology and instream flow methodology. Mr. Sinning has significant experience quantifying instream flows for fisheries. His work with the Instream Flow Group's Incremental Methodology began in 1976-77 when he took part in an evaluation of the method during the early stages of its development. Since that time, Mr. Sinning has participated in six different projects in which he personally took part in applying the Methodology.

45-3 Tr. 15241-15254 (Sinning).

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45-4 Conflict between amounts claimed and other evidence and pleadings

In many instances the flows recommended by Mr. Vogel were greater than one or more of the following:

1. The amounts set forth in the United States' Statement of Claims;
2. The actual flows measured by the United States Geological Survey stream gauging stations; and
3. Estimates of natural or virgin flows developed by the United States' hydrologist, Mr. Mike Keene.

45-4 Comparison of U.S. Statement of Claims filed March 6, 1980
at pp. 5-9 to U.S. Exh. WRIR C-280; Tr. 6598-6607
(Vogel); Tr. 6579-6580 (Vogel); Tr. 6802-6813 (Vogel);
Wyo. Exh. WRIR FISH 280-77-A; Tr. 6485-6492 (Vogel); U.S.
Exh. WRIR C-280.

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45-5 Deficiencies and errors in United States' application of incremental methodology

The Court finds that:

- (1) proper application of the IFG Incremental Methodology requires the consideration of four major factors prior to the collection of field data. These four factors, i.e., watershed equilibrium, water quality, channel structure, and food availability are considered in turn and a decision must be made on the importance of each to the resource being managed. If the researcher does not know the effect, he must request help in deciding so that the effects might be quantified or predicted and a remedy suggested. Mr. Vogel made no investigation with respect to watershed equilibrium, water quality, food availability or channel structure;
- (2) following the collection of field data, the Incremental Methodology requires extensive use of computers. Mr. Vogel did not attempt to verify the computer predictions resulting from his application of the Incremental Methodology;
- (3) as part of the IFG Incremental Methodology, the researcher must input, into the computer, habitat

preference criteria curves for each species and life stage which will be the basis of recommended flows. In order to develop these curves the investigator must know the preferences for the fish species and life stages of interest. This information should be the result of field observations of the fish in their native habitat and data collection by the investigator.

Only in appropriate situations may the investigator rely on the preference criteria curves permanently stored with the Cooperative Instream Flow Group. Mr. Vogel did not conduct field observations or gather data on the fish in their native habitat but instead relied on species preference curves primarily derived outside of Wyoming. In fact, Mr. Vogel modified the fish preference curves he used so as to require increased velocities, and therefore increased flows;

- (4) Mr. Vogel used only the velocity, depth and substrate preference curves for adult rainbow and brown trout and ignored the temperature preference curves;
- (5) Mr. Sinning's testimony pointed out numerous additional errors in Mr. Vogel's application of the Incremental Methodology;

- (6) Mr. Vogel's recommended flows in essence seek to maximize fish habitat rather than provide minimum stream flows. This is made more obvious by the fact that many of Mr. Vogel's calculated optimum flows exceeded both the U.S.G.S. gauged flows as well as Mr. Keene's virgin flows as discussed in the previous finding. Even more telling is the fact that the Weighted Usable Area graphs utilized by Mr. Vogel and depicted in United States Exhibit WRIR C-280 if slightly modified to include the 1 in 10 year, 1 in 5 year and 1 in 2 year low flow figures provided by Mr. Keene demonstrate that the optimum habitat suggested by Mr. Vogel's recommended flows would be significantly greater than that which ever existed historically;
- (7) the low flow values used by Mr. Vogel in his analysis are not the same values testified to by Mr. Keene;
- (8) Mr. Vogel had no personal knowledge of the presence of the fish species he relied on in developing his recommended flows for reaches 2, 3, 5, 6, 7 (rainbow trout only);
- (9) Mr. Vogel made no determination of the present or past populations of the fish species he relied upon in making his recommended flows;

(10) in arriving at his recommended flows, Mr. Vogel did not even take into account the historic or future irrigation claims of the United States and the Tribes in this case. In fact, when the full diversionary and instream claims of the United States and the Tribes are combined, even the United States and Tribal experts admit many of the claims cannot be fully satisfied unless efficiencies greatly increase.

(See Findings of Fact 42-1 et seq.)

As a result, the Court finds the analysis and recommended flows derived by Mr. Vogel too unreliable to be the basis of a decree reserving water rights to maintain a fishery within the Wind River Indian Reservation.

45-5 In support of this finding, refer to:

- (1) Wyo. Exh. WRIR FISH-1A at pp. 14-16; 21-32; Tr. 6719-6726 (Vogel), 15270-15271 (Sinning)
- (2) Wyo. Exh. WRIR FISH-45; U.S. Exh. WRIR C-280 at pp. 2-9; Tr. 6662-6670 (Vogel)
- (3) Wyo. Exh. WRIR FISH-1A at pp. 22-24; Tr. 6742-6747 (Vogel)
- (4) Tr. 6749 (Vogel); U.S. Exh. WRIR C-280 at p. 7; Wyo. Exh. WRIR FISH-4 at p. 37
- (5) Tr. 15261-15275 (Sinning).

Beyond the basic procedural errors noted, there are additional factors making Mr. Vogel's analysis and conclusions even more suspect. Refer to:

- (6) Tr. 6494-6504, 6525-6530; 6770-6790 (Vogel); Wyo. Exh. WRIR FISH-284; U.S. Exh. WRIR C-280
- (7) Tr. 7147-7148 (Clear)
- (8) Tr. 6641-6643 (Vogel)
- (9) Tr. 6652-6653 (Vogel)
- (10) Tr. 6735-6741 (Vogel); Tr. 9622-9245 (Fassett); Wyo. Exhs. WRIR MF-16A, 16B, 17A, 17B, 18A, 18B, 19A, 19B, 20A, 20B, 21A, 21B.

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45-6 No need to decree rights to instream flows for fisheries

The Court finds that, under the Decree to be issued in this case, there will be sufficient water remaining in the various stream reaches, for which the United States and the Tribes are seeking fishery instream flows, to maintain a fishery adequately in those reaches and, therefore, the Court finds no need to quantify or decree reserved rights to separate instream flows.

45-6 Under the 12 alternatives for which Mr. Fassett developed lists of affected water rights and claims, Mr. Fassett also produced documents indicating the amount of water left in the streams under the 12 alternatives. The flows in cubic feet per second by month are listed in Wyo. Exhs. WRIR MF-2001-RF, 2001A-RF, 2001B-RF, 2002-RF, 2002A-RF, 2002B-RF, 2003-RF, 2003A-RF, 2003B-RF, 2004, 2004A-RF, and 2004B-RF. Tr. 15200-15202 (Fassett). Mr. Sinning examined the flows remaining in the streams depicted in these 12 exhibits especially with respect to the reaches for which Mr. Vogel made recommended stream flows and generally concluded that the flows remaining in Mr. Vogel's reaches under the various alternatives would be adequate to maintain the fishery. Tr. 15275-15276 (Fassett). In light of the reliability and flexibility of the State's systems operation model to analyze the complex interaction of all rights and claims to water and the experience of Mr. Sinning in fishery instream flow analysis, the Court finds Mr. Sinning's conclusions persuasive.

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Findings of Fact
Relating to
Mineral Development

46-1 Original claims

The United States originally claimed the use of 8,219 acre-feet of water annually for mineral development on the Reservation; 1,829 feet for historic use; and 6,390 acre-feet for future use. The Tribes originally claimed an additional 11,000 acre-feet of water annually, but subsequently reduced their claims to those amounts presented by the United States at trial.

46-1 See United States Statement of Claims (filed March 6, 1980). See Statement of Shoshone and Arapahoe Tribes concerning the measurement of Tribal reserved water rights (filed April 4, 1980) and Amended Statement of Shoshone and Arapahoe Tribes concerning the measurement of Tribal reserved water rights (filed July 16, 1981).

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Witnesses before the Court

In support of its claim, the United States presented the testimony of Mr. James P. Merchant of David Dornbusch & Company of San Francisco, California. Merchant also testified in support of the United States' claims to water for livestock, municipal, domestic and commercial purposes.

Through Mr. Merchant's testimony, the United States claimed water for certain existing uses and a variety of proposed future mineral developments on the Reservation as depicted in U.S. Exh. WRIR C-29. The Court was not presented, however, with any estimates of recurring annual water requirements for mineral development on the Wind River Indian Reservation.

The State of Wyoming presented the testimony of Gary L. Watts, a natural resource economist, who has substantial experience studying the economic feasibility of coal development in Wyoming, the

location of coal gasification facilities,
underground coal-mining and the potential
economic impacts of coal-fired power plants.

The Tribes did not present any witnesses or
tender any evidence to the Court in support of
mineral development uses.

46-2

Mr. Merchant holds a bachelors degree in economics, but his graduate degrees are in business administration and law, Tr. 185 (Merchant), which do not qualify him as an expert in natural resource economics. Even if Mr. Merchant was a qualified natural resource economist, however, he would not be qualified to testify as to non-economic matters, for example, to establish the existence of mineral deposits on the Wind River Indian Reservation. As counsel for the State of Wyoming pointed out:

You have a witness who is going to tell you what mineral deposits there are out there, he is going to tell you where they are, how he located them, how they can be brought out, what is going to be done with them, how big a plant can be, all of these sorts of things that are all beyond the field of general economics. Tr. 549.

The Special Master responded by saying:

The economist on the stand may continue to testify to those things as expertise gives him a right to, but I would doubt if it would go to telling us what that coal field contains unless he had some first hand knowledge . . . Mr. Merrill, I think you made a good point. Tr. 550 (Special Master).

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Thus, the United States did not establish the extent of mineral deposits on the Reservation except through the testimony of an economist with, at best, second-hand knowledge. Furthermore, the water requirements testified to by Mr. Merchant are not in a form that is meaningful to the Court. To the contrary, Mr. Merchant testified only to peak water use for various proposed developments. Tr. 597 (Sleater). As the Special Master noted with regard to U.S. Exh. WRIR C-29:

You see, the Exhibit raises in my mind a fear that you are going to seek to have me believe that there is going to be a need simultaneously for all the water listed in the last column and nothing is really further from what the truth is or what you portend. Tr. 598 (Special Master).

The Special Master went on to ask:

Can the witness help us with what the ordinary routine, expected normal requirements might be over the next 10, 15, 20, 30 years in total usage? Then the Exhibit would have more value to me. Tr. 599 (Special Master).

This query went unheeded by the United States; there is no response to the Master's request anywhere in the Record.

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Gary L. Watts presented testimony, however, on behalf of the State of Wyoming concerning the economic feasibility of mineral development on the Reservation. Mr. Watts is an expert natural resource economist, and was qualified as such by the Master without objection by the United States and Tribes. Tr. 11551 (Special Master).

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Secondary oil recovery

The United States and Wyoming agree that ground water is currently being used for secondary oil recovery at three fields on the Wind River Indian Reservation: Streamboat Butte, Winkleman Dome and Lander. Approximately 6,500 acre-feet of water is used annually, of which 3,994 acre-feet is withdrawn through state-permitted wells and the remainder is produced as a part of the oil recovery process. The United States did not claim water for secondary recovery beyond existing uses and there is no evidence that such a need would arise.

Since sufficient ground water for secondary recovery is available through state-permitted wells, and a need has been established for only 20 years, the Court finds no basis for awarding a reserved right for such use. The Court further heard no testimony that the oil reserves in question involve mineral trust deposits held on behalf of the Tribes by the United States.

46-3

Documentation of the current use of ground water for secondary oil recovery on Wind River Indian Reservation is contained in the testimony of Mr. Merchant, Tr. 494, 495, 504; and Mr. Watts, Tr. 11578.

Mr. Merchant further testified that a total of 6,500 acre feet of water is currently used annually in secondary recovery operations. Tr. 513-514 (Merchant). Mr. Watts further testified that 3,994 acre-feet were taken annually from state-permitted wells, and that any additional water is produced as a part of the oil recovery process. Tr. 11571-11575. The United States did not present testimony concerning the expected lifetime of the fields currently using water for secondary recovery; however, Mr. Watts testified that the expected life of the fields is approximately 20 years. Tr. 11577.

The United States did not claim water for secondary recovery beyond existing uses. Tr. 515 (Merchant). Furthermore, there is no evidence that such a need would arise. Tr. 11571 (Watts).

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Based upon the previous findings, it is obvious that where there is a temporary need for some water for secondary oil recovery on the reservation, this need is expected to last for only 20 years. Since the current uses are being satisfied from state-permitted ground water wells, or from the oil recovery process itself, there is no basis for awarding a reserved right for such uses.

Even if there were such a basis, the United States has provided no evidence to the Court to indicate that the oil deposits involved include trust mineral deposits held on behalf of the Tribes by the United States.

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Natural gas processing and sulfuric acid plant

The Court also heard evidence concerning a six acre-foot annual requirement for processing natural gas reserves, and a 95 acre-foot annual requirement for an existing sulfuric acid plant. However, no evidence was presented that either of these enterprises involved trust mineral deposits held by the United States on behalf of the Tribes. To the contrary, Wyoming presented testimony that the sulfuric acid plant was a commercially owned operation that used minerals obtained outside the Reservation. The Court thus does not find a basis for awarding a reserved water right for these uses.

46-4

Mr. Merchant testified, Tr. 517, that approximately six acre-feet of water are currently being used annually for processing natural gas reserves on the Wind River Indian Reservation. Mr. Watts, testifying in behalf of Wyoming, agreed with his conclusion. Tr. 11577.

Mr. Watts went on to testify, however, that he had investigated the United States' claim of 95 acre-feet per annum for sulphuric acid production on the Reservation, and concluded that the existing plant does not use any sulphur or natural gas from the Reservation in producing sulphuric acid. Tr. 11577-11578 (Watts). Since the Court was presented with no evidence concerning the fact that natural gas processing or sulphuric acid manufacturing on the Reservation makes use of mineral resources held in trust by the United States for the Tribes, the Court should conclude that reserved water rights for developing such resources are inappropriate.

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Future Mineral Development

In addition to existing uses, the United States presented testimony concerning proposals for future mineral development which, if they all occurred simultaneously, would result in a peak annual water requirement of approximately 11,000 acre-feet. These proposals included plans for an anhydrous ammonia fertilizer plant; two underground coal mines; an in situ coal gasification facility; an electrical generating plant; a uranium mine and processing facility; a phosphate mine, benefaction plant and phosphoric acid production facility; and a gypsum mine and wallboard production facility.

46-5

Mr. Merchant's testimony concerning proposed future mineral developments on the Wind River Indian Reservation is contained in Tr. 515-602 (Merchant). The results of peak annual water requirements for each of these suggested developments are given in U.S. Exh. WRIR C-29. As pointed out in Finding of Fact 46-2, above, this exhibit does not give estimates of annual water requirements for future mineral development on the Wind River Indian Reservation.

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No basis for reserved right for future mineral development

The Court finds no basis for awarding a water right for these claims for the following reasons:

1. Both the United States and Wyoming agreed that mineral resources on the Reservation constitute a non-renewable resource, which, if developed, would be exhausted in a finite period of time. Wyoming argued that it would be economically inefficient to award a water right in perpetuity to develop a resource with a relatively short, finite lifetime. The Court concurs with Wyoming's position that a perpetual water right is not needed to develop non-renewable resources.

2. The Court was presented with no evidence that these potential developments are in any sense practical, or can be undertaken at reasonable cost. In fact, the United

States' witness Mr. Merchant stated that he did not undertake any studies of the potential costs and returns of such proposals;

3. Mr. Watts, testifying on behalf of Wyoming, stated that without exception the proposed projects were highly speculative or infeasible in the foreseeable future;
4. The United States presented no evidence to the Court concerning what the average annual water requirements of these combined developments would be, and when and for how long the water would be required; and
5. The Court sees no reason why water for future mineral development, if needed, could not be diverted temporarily from the reserved right award in perpetuity for agricultural development; or alternatively, obtained under Wyoming state law.

1. The United States clearly recognizes that mineral development is entirely different in nature than the other uses for which it requested water:

I like to begin by saying that I consider Mineral Development different in character from other opportunities for development on the reservation, and the reason for that is the Mineral Development involved depletable resources, as opposed to the renewable resources that we consider for livestock, and that has been considered for irrigated agriculture.

Question: (By Ms. Sleater) What is a depletable resource?

Answer: (sic) Depletable resource is one that is once used is not available for future consumption.
Tr. 486-487 (Merchant)

Mr. Watts, testifying on behalf of Wyoming, argued that it would be economically inefficient to allocate a water right in perpetuity for a non-renewable resource.
Tr. 11587-11588 (Watts).

The Special Master agreed when he stated:

I could hardly give a reserved right to use some (sic) in perpetuity for a resource that's going to exhaust itself in twelve or twenty-five or thirty years."
Tr. 11589 (The Special Master).

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2. Mr. Merchant, testifying on behalf of the United States, indicated that his opinions concerning the feasibility of mineral development on the Wind River Indian Reservation are based only upon his own experience and knowledge, rather than upon an explicit study of costs and returns. Tr. 717.

3. Under cross examination, Mr. Watts, testifying on behalf of Wyoming, also stated that he did not conduct in-depth studies of the potential for mineral development on the Wind River Indian Reservation. Tr. 11590 (Watts). Mr. Watts did testify, however, that:

Using those facts and making a judgment gives you some indication of what the potential feasibility is . . . Tr. 11590.

Mr. Watts testified that, when determining economic feasibility, it is necessary to consider the cost of mining various minerals, the transportation costs of getting those minerals to appropriate markets and the extent to which substitutes may affect future demand for various mineral resources. Tr. 11556. Mr. Watts then went on to testify that the various future

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proposals put forth by United States for mineral development on the Reservation were for the most part highly speculative. Tr. 11557-11589.

4. Even if the United States had shown that its proposed future mineral developments were feasible, the United States presented the Court with absolutely no evidence concerning what average annual water requirements for these minerals would be. See Finding of Fact 46-2, supra.

5. Finally, since the time and extent of any potential future need for mineral development on the Wind River Indian Reservation is uncertain, it would behoove the Court to require the Tribes to obtain any needed water for such purposes from other allotments.

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Findings of Fact
Relating to
Tribes Contingency Claims

47-1 No competent evidence has been submitted to the Court in support of a contingency claim for water by the Tribes, over and above the specific amounts by them and on their behalf. While the record reflects that the Tribes have, in the past, acquired lands that were included within the Wind River Indian Reservation to be held in trust for the Tribes, no evidence was presented concerning specific future planned acquisitions. Therefore, an award of a reserved water right to serve future acquisitions of lands would require speculation by the Court, which is beyond the reasonable bounds contemplated by the doctrine set forth in Winters v. United States.