Montana Water Court
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IN THE WATER COURT OF THE STATE OF MONTANA
UPPER MISSOURI DIVISION
TETON RIVER BASIN (410)

* *

CLAIMANT: Skelton Angus Ranch, Inc,; Wayvan Campbell (deceased) OBJECTOR: Skelton Angus Ranch Inc. NOIA: Kenneth C. Rice; Elaine M. Rice; Lane Yeager; Pondera County Canal & Reservoir Company	**Case 410-35** 41M 25166-00 41M 25167-00 410 25168-00 41M 25169-00 41M 25170-00 **Implied Claim** 41M 30052591
CLAIMANT: Gregory W. Duncan; Sherri L. Donovan; Terry L. Dougherty NOIA: Pondera County Canal & Reservoir Company	**Case 410-38** 41M 121495-00 41M 121496-00 41M 121497-00 **Implied Claim** 41M 30052592

NOTICE OF FILING MASTER'S REPORT

This Master's Report was filed with the Clerk of the Montana Water Court on the above stamped date. Please read this Report carefully.

If you disagree with the Master's Findings of Fact, Conclusions of Law, or Recommendations; or if there are errors in the Report, you may file a written objection to the Report within **10 days** from the above stamped date. (Rule 23, Water Right Adjudication Rules.) If you file an objection, you must also mail a copy of the objection to all parties on the Service List found at the end of the Master's Report. The original objection and a certificate of mailing to all parties on the Service List must be filed with the Water Court. If you do not file a timely objection, the Water Court will conclude that you agree with the content of this Master's Report.

Index to Master's Report

Attachments:

Master's Exhibits 1-4 Calculations for Manning's Formula

Post Decree Abstracts of Water Right Claims

MASTER'S REPORT 410-35 AND 410-38

PROCEDURAL BACKGROUND

This report addresses claims in cases 410-35 and 410-38. Case 410-32A has been on the same hearing track but is addressed in a separate master's report. All three cases include claims from South Fork, Dupuyer Creek. The claims are based on the same notices of appropriation. All claims at issue claim the same point of diversion and means of diversion referred to in this report as the "Thomas" diversion or "Thomas Ditch."[1]

Claimant Campbell Brothers in case 410-32A did not file a proposed prehearing order. Campbell Brothers failed to appear at hearing. As a result, the two claims in case 410-32A are addressed in a separate Master's Report which recommends terminating both claims. This recommendation serves to remove all Campbell Brothers' interest in South Fork, Dupuyer Creek water. Therefore, the claims in case 410-32A are not considered in the determination of the historical elements of the claims in cases 410-35 and 410-38 as addressed in this report.

The Tee Six Ranch is located along Gansman Coulee below claimant Skelton Angus Ranch, Inc. Some of the place of use claimed in notices of appropriation at issue in these cases is located on Tee Six Ranch property. However, Tee Six Ranch is not claiming South Fork, Dupuyer Creek water. The ranch has claimed irrigation and stock water rights from Gansman Coulee itself (See Case 410-41). As a result, any connection Tee Six Ranch property may have had to the historical use of the water rights at issue here is not taken into account.

The South Fork of Dupuyer Creek is located in the Two Medicine River Basin

[1] Various exhibits refer to the ditch as the Clark Ditch, the Bean Ditch, the Clark-Bean Ditch, Ditch No. 1, and Ditch #284. The Teton County Water Resource Survey refers to it as the Thomas Ditch. Hence, Thomas Ditch is used in this report no matter the name reference in the particular exhibit.

(41M). With one exception,[2] the water right claims in cases 410-35 and 410-38 assert water from the South Fork, Dupuyer Creek in Basin 41M is transported out of that Basin for irrigation on land located in the Teton River Basin (410). This water does not return to Basin 41M. In this adjudication, interbasin claiins such as these appear in the decree for both Basins and are subject to objection in both Basins. The Temporary Preliminary Decree (TPD) for Basin 410 was issued on December 29,2005. Basin 41M has yet to be issued in a Water Court decree. As a result, the first objections to the claims and issue remarks are addressed in Basin 41 0 proceedings. The basin designation for a claim number is based on point of diversion. Hence, all South Fork of Dupuyer Creek claiins have a 41M designation even though this is a 41 0 proceeding.

Case 410-35 includes five claims currently owned by Skelton Angus Ranch, Inc. (Skelton) and Wayvan J. Campbell. According to the claim abstracts, Sltelton is purchasing the property associated with 'these claims from Wayvan J. Campbell through a contract for deed. As a result, Mr. Campbell, who is deceased, is retained as a record owner. The Estate of Wayvan J. Campbell, which is represented by the same counsel as Campbell Brothers, did not appear at hearing. The four claiins in this case from the South Fork, Dupuyer Creek all received the same flow rate remark. The fifth claim, 41 0 25168-00, from Gansman Coulee, received several issue remarks. All five claiins received objections from Skelton. Lane Yeager, Kenneth Rice, and Elaine Rice (Rice/Yeager) filed notices of intent to appear on two of the claims but did not participate in the hearing. The Pondera County Canal and Reservoir Company (PCCRC) filed notices of intent to appear on the four South Fork, Dupuyer Creek claims.

Case 410-38 includes three claims currently owned by Gregory W. Duncan, Sherri L. Donovan, and Terry L. Dougherty (Duncan). All three claiins appeared in the TPD with multiple issue remarks. None of the claims received objections. All three claims

[2] Claim 41 0 25168-00 in case 410-35 is for Gansman Coulee. Water diverted out of South Fork, Dupuyer Creek is used in Gansman Coulee.

received notices of intent to appear from PCCRC and AMS Ranch, Inc. The AMS Ranch notices were subsequently dismissed for its failure to file a proposed prehearing order and failure to appear at the prehearing conference.

On September 28,2010, Duncan (410-38) filed a Motion in Limine seeking to exclude all documents prepared on behalf of PCCRC or its predecessors in anticipation of water right litigation. The documents at issue date generally from 1900 to 1940. Skelton (410-35) joined in the motion but did not file briefs. Responses opposing the motion were filed by PCCRC and Rice/Yeager. Hearing on the motions took place in conjunction with the prehearing conference. Following arguments, the Master denied the motion.

A joint hearing for cases 41O-32A, 410-35, and 410-38 took place on February 16 and 17, 2011 in Choteau, Montana. Present were Duncan (410-38), Sltelton (41O-35), and PCCRC. Rice/Yeager were excused. Claimant Campbell Brothers (410-32A) and Estate of Wayvan J. Campbell (410-35) failed to appear. Following hearing, the Master issued an order setting an April 11,2011 deadline for post hearing filings. Upon motion of the parties, this deadline was extended first to May 2,2011 and then to May 18,2011. Post hearing filings were received from Duncan, Skelton, and PCCRC.

MEMORANDUM REGARDING EVIDENTIARY ISSUES

A significant amount of the historical information about the diversion of water from South Fork, Dupuyer Creek for use in Gansman Coulee comes from records kept by PCCRC. These records were the subject of a prehearing Motion in Limine filed by all claimants and denied by the Master. Claimants Duncan and Sltelton renewed objections to the exhibits at hearing. The documents at issue were prepared by employees and agents of PCCRC and its predecessors. They consist generally of reports, surveys, maps, hydraulic data, memoranda, and interview notes. They cover a time period from about 1900 to 1940.

In preparing for this hearing, PCCRC identified several documents that pertain to the Thomas diversion from South Fork, Dupuyer Creek. PCCRC provided copies of

these documents to all parties. In addition, PCCRC made its records available to all parties for their own research. Claimant Skelton in particular has asserted PCCRC is withholding documents that could be damaging to its position in these proceedings. At the close of hearing, PCCRC agreed to provide additional documents discussed during the testimony of expert witness John Westenberg. Mr. Westenberg stated some of the documents at issue were reviewed by him but had little to do with the Thomas diversion. In addition, other documents were identified in PCCRC records but could not be located. PCCRC provided the additional documents it was able to locate on March 7, 2011. The Master finds no basis for any allegation PCCRC failed to comply with all discovery requests or inappropriately withheld documents.

The thrust of the objections to these exhibits is they were all documents prepared by PCCRC and its predecessors in anticipation of litigation. That anticipated litigation was apparently initiated by PCCRC but settled without a trial. Duncan and Skelton acknowledge the exhibits are ancient documents allowable as an exception to hearsay under Rule 803(16), M.R.Evid. At hearing, Duncan and Skelton argued the documents must also be statements against interest because they were prepared in anticipation of litigation. Counsel for Duncan noted she was placed in the awkward position of asserting the documents should be excluded while at the same time offering several of the documents as exhibits. She argued it was necessary to offer certain exhibits to counter other exhibits offered by PCCRC. Objections at hearing notwithstanding, Duncan's post hearing filing found the correct middle ground. That being, the documents are admissible, but little weight or credibility should be placed on the self-serving declarations included in the documents.

For its part, Skelton continues to argue the exhibits in question are so self-serving and lacking in credibility they should be completely excluded.

The current PCCRC irrigation system was developed over several years. The process of keeping records and gathering information on water use within the area where PCCRC acquired water began as early as the system itself. Surveyors and engineers employed or under contract with PCCRC and its predecessor made extensive studies of

this entire area. In reviewing the records introduced as exhibits in these cases, it is clear a certain amount of that data was acquired in anticipation of potential water right litigation. However, it is apparent this was not the only reason for the work. An irrigation project as large as PCCRC needed to know what water resources were available. This includes gathering information and assessing other appropriations. While there may have been a tendency to minimize competing appropriations, it is not appropriate to dismiss all of this documentation as inadmissibly self-serving. For example, exhibits identifying the flume used by the Thomas diversion calculated the capacity of that flume. While there is disagreement about the proper elements to insert in the equation to detennine capacity, it is accepted the diversion used a flume of an approximate size. Thus, it is appropriate to accept the exhibit to establish the use of a flume of a certain size while at the same time questioning the capacity of the flume as calculated in the same exhibit. It is properly a matter of weight and credibility, not admissibility.

Duncan and Skelton cite Hill *v. Merrimac*, 211 Mont. 479, 501, 687 P.2d 59, 74 (1984), as authority for rejecting the PCCRC exhibits. However, the Hill, decision addressed pleadings from a previous district court case. That is significantly different from the documents at issue here. They are work produced by company employees and agents, not pleadings. Extending the rule from Hill beyond pleadings to include any document, whatever its nature, that may have been used in previous litigation or generated in anticipation of litigation is not warranted. This argument could prevent an irrigation company from using any of its records in this adjudication if there was even anticipated litigation that did not result in a district court decision. That is not the rule in Hill.

The Master's previous ruling denying the Motion in Limine was correct. The rulings allowing the various exhibits at hearing were also correct. All of these documents are admissible under Rule 803(16), M.R.Evid. as ancient documents. Their value in deciding the issues presented in these cases is a matter of weight and credibility best decided in the context of the record developed by the parties at hearing.

This Master's Report is lengthy and factually complicated. The following map and table are provided as references.

Map: Point of Diversion, Duncan Property, and Skelton Property.

Table of Significant Land Transactions

Clark Family

↙ ↘

Flacker → Aman → Cook → Thomas → Duncan

Blackleaf Land & Cattle (Clark Family) → Rosenfield → Smith → Campbell Family → Skelton

This table shows certain land transactions discussed in this report. It is not a complete listing of all land transactions for property currently owned by Duncan or Skelton.

FINDINGS OF FACT

1. South Fork, Dupuyer Creek arises on the Rocky Mountain Front West of Conrad, Montana. It flows generally north and northeast to its confluence with the Middle and East Forks to form Dupuyer Creek. Dupuyer Creek flows northeast until it joins Birch Creek. Birch Creek continues the journey north to the Two Medicine River. At a point in the NWSWSE of Section 25, T27N, R9W, Teton County, early settlers developed a diversion system capable of transporting water out of South Fork Dupuyer Creek for use in the Gansman Coulee area. It is not clear who first commenced work on the diversion and ditch. Early references to the diversion refer to it as the Bean or Bean-Clark Ditch. Records indicate possible claims through the ditch filed by Joseph Bean (PCCRC 9). One of the interviews conducted of area residents indicates Samuel Bean may have developed the ditch for his property in Gansman Coulee (PCCRC 14 #17). However, any use by these appropriators soon ended. The earliest appropriation claimed by Duncan and Skelton was filed by B. Percy Clark in 1895 (PCCRC 5d).

2. The right to use this diversion and ditch is currently claimed by Skelton (410-35) and Duncan (410-38) and referred to as the Thomas Ditch. Both Duncan and Sltelton claim irrigation on land along both sides of Gansman Coulee (PCCRC 6). Duncan's irrigated land is located at the top of the coulee in Sections 28, 29, 30, 33, and 34, T27N, R8W. Skelton's irrigated land is located along the coulee immediately below Duncan in Sections 34 and 35, T27N, R8W and Sections 1, 2, and 12, T26N, R8W (PCCRC 6).

3. After diverting water from South Fork, Dupuyer Creek, the Thomas Ditch transports that water over the divide and into Gansman Coulee. At the top of the coulee, the ditch splits into a south and north branch. The branches carry water to irrigated land on each side of Gansman Coulee. Water can also be dumped into the coulee and transported for diversion at other ditches along the coulee. Through this system of ditches and Gansman Coulee as a natural carrier, Duncan and Skelton are able to irrigate

a total of 890.00 acres. The testimony of Greg Duncan[3] and Steve Skelton indicates the system is somewhat integrated for both ranches. Duncan typically takes all available flow into the north and south branches of the Thomas Ditch for irrigation on his property. Skelton picks up that water as it leaves Duncan's property and uses it to irrigate his property. Depending on the field, Skelton may pick the water up before it returns to Gansman Coulee or may divert the water out of the coulee itself. Skelton will also take any water that spills into the coulee rather than being diverted into the two branches of the Thomas Ditch. Although Steve Skelton testified the natural flow of Gansman is minimal, he claims a water right for that natural flow.

4. The original size of the Thomas Ditch is unknown. Duncan and Skelton assert the current ditch is the same size as the original ditch. The capacity of that ditch, as calculated by Duncan's expert witness David Schmidt, is 50.74 cfs (D-H). While this capacity is disputed by PCCRC, the size of the ditch itself is not dispositive. The historical flow rates of water rights using the Thomas Ditch are dictated by a flume used to divert water for the first several hundred feet below the point of diversion. The Thomas Ditch has used this flume since at least 1912. While there are calculations of the capacity of the flume in various exhibits, the validity of these calculations and the appropriate way to calculate the capacity of the flume has been a point of dispute. Determining this capacity is complicated by the number of repairs and improvements that took place over the years. The record includes at least four different estimates for the width and depth of the flume.

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[3] Mr. Duncan wore two hats in these proceedings. He is a claimant in case 41O-38 and was represented by counsel. He testified as a claimant in his case in chief. Mr. Duncan, who is a licensed attorney, represented Skelton Angus Ranch, Inc. in case 410-35. He cross examined all witnesses and called his own witnesses as counsel for Skelton. In post hearing filings, Duncan the claimant, through his attorney, is asserting he has exclusive right to all South Fork, Dupuyer Creek water diverted through the Thomas Ditch. Skelton's post hearing filing, submitted by Duncan the attorney, asserts Skelton is entitled to four different water rights claims from South Fork, Dupuyer Creek with a total flow rate of 50.70 cfs. Any conflict has apparently been resolved by Mr. Duncan and Mr. Skelton.

I. Historv of the Thomas Ditch and Flume

5. The original Thomas Ditch had a relatively short life. B. Percy Clark filed a notice of water right for this point of diversion in 1895. The ditch may have been in use as early as 1895 or 1896 (PCCRC 14 #51). In 1908, a flood shifted the course of the stream and cut into the hillside on its right (east) bank (PCCRC 14 #33). This wiped out the first several hundred feet of the ditch and made it impossible to maintain the diversion with a ditch. The hillside became too steep and unstable. It continually sloughed rock and dirt into the creek and whatever structure was in its path. By 1912, the first several hundred feet of the ditch had been replaced with a flume (PCCRC 13). All parties agree the flume and the diversion structure have been washed out and rebuilt on many occasions. In fact, maintaining this diversion has been a huge problem. South Fork, Dupuyer Creek is prone to flood events. The creek is capable of rising to huge flows and causing significant destruction. The Thomas headgate is located in such a way that the full force of the creek slams directly into the diversion structure (D-O, testimony of Tom Salansky and Lewis Clark). At low flow, this can work to the advantage of the diversion. At high flow it has often resulted in partial destruction and in some cases total destruction of the structure. Nonetheless, a flume has been used as part of the means of conveyance since at least 1912. In 1999, the flume was replaced with a 30 inch culvert. In 2009, this culvert was replaced with a 36 inch culvert (testimony of Louis Clark).

6. The two earliest notices of appropriation for the Thomas Ditch that are claimed by Duncan and Skelton were filed by B. Percy Clark in 1895 (PCCRC 5d) and Armedia Clark in 1902 (PCCRC 55a). Based on the similarities in these filings and subsequent documents conveying land and water rights, it is apparent the Clark family (Bainbridge, Armedia, B. Percy, Walter, and Cora) acted as a single entity even when. assets were held in the name of a single family member. In 1903, Armedia Clark sold land at the top of Gansman Coulee and 4.50 cfs of the 1902 appropriation to Adolph Aman (PCCRC 10j). In 1910, Blackleaf Land and Cattle Company conveyed property and all appurtenant water rights to Walter A. Rosenfield (PCCRC 11k). Shareholders and

officers of the Blackleaf Land and Cattle Company included Armedia, Walter, and Cora Clark. It appears this transaction conveyed all remaining Clark family interest in the 1895 and 1902 appropriations. Both Aman and Rosenfield are frequently mentioned in historical documents addressing the Thomas Ditch and flume. These same documents only reference the Clark family as former owners.

7. The use of the flume on the Thomas Ditch is a significant factor in the South Fork, Dupuyer Creek claims owned by Duncan and Skelton. The flume was the focal point of many early investigations conducted by PCCRC's predecessors. The size and capacity of the flume has been a central issue in cases 410-35 and 410-38.

8. One of the earliest references to the flume is in a field work notebook from 1912. There are several such notebooks contained in an index of field work for Dupuyer, Schoffin, and Sheep Creeks (D-X). This book is numbered 534 and is credited to H.A. Bestor (PCCRC 13 and D-Y). Bestor was apparently an engineer or surveyor doing field work for PCCRC's predecessor in 1912.[4] Book 534 is one of the earliest references to field work on Dupuyer Creek. Bestor's notes reference Ditch #284 (Thomas Ditch) with a wood flume 24 inches wide and 8 inches deep (PCCRC 13). He did not give a length for the flume but states there was a gate "of typical design" in the ditch approximately 600 feet below the headgate. Bestor's calculations set the capacity of the flume at 4.22 cfs. However, it is possible the calculation is based on water flowing through the flume at that time rather than maximum capacity (testimony of Ryan Casne). Bestor also notes the Flacker Ditch (#283), located just above the Thomas Ditch, was under construction at the time.

9. A July 8, 1918 Memorandum by Chief Engineer C. E. Atwood recounts a field trip to inspect diversions taking water from the Dupuyer Creek drainage for use in the Blackleaf drainage (PCCRC 14 Diary #2). The inspection found both the Flaclcer and Thomas Ditches. The Flacker Ditch was not usable and appeared to have been out of use

[4] PCCRC 13 includes "1912 Survey Notes" hand written on page 1. The actual notes with information on the Thomas Ditch are not dated. It is presumed they reflect work done in the summer of 1912.

for some time. The Thomas Ditch was in use and diverting about 2.69 cfs at the time of the inspection. Atwood calculated the size of the flume at 1.94 feet wide and .84 feet deep. This converts to just over 1 foot 11 inches wide by 10 inches deep. Atwood calculated the length of the flume at 400 feet.

10. Exhibits PCCRC 14 and D-FF include notes from several interviews conducted by irrigation company personnel. The interviewers sought out area residents with knowledge of ditch use and irrigation practices. They do not include much detail or background indicating the credibility of the person interviewed. All interviews were assigned a number and indexed. The same index number applies to PCCRC 14 and D-FF. PCCRC and Duncan included interviews based on some reference to the Thomas Ditch.

a. H. J. Hamann was interviewed as part of a November 2, 1921 field trip (#6). At the time, Hamann lived on the Aman ranch but was about to lose it to foreclosure. He purchased the ranch in the spring of 1920 and rebuilt part of the flume that year. He used water every year and refused to share with other Gansman Coulee water users because he had done all the work on the system. During this visit, irrigation company investigators had found an old partially destroyed flume which they initially thought was the Thomas Ditch. (Based on information from several other sources, it was probably the Flacker Ditch.)

b. Henry Howe was interviewed on April 4, 1922 (#17) and again on July 6, 1922 (#29). He took up residence at the forks of Dupuyer Creek and lived there until he sold the property. At the time of the interviews, he lived on Sheep Creek. In the first interview, he claimed to have built all of the Bean Ditches including the Bean or Clark Ditch (Thomas Ditch). He stated the ditch took water into Blacldeaf Creek for use on Sam Bean's ranch. In his second interview, Howe distinguished the Clark Ditch as separate from the Bean Ditches. However, he indicated the Clark Ditch was actually the Flacker Ditch. He referred to the Aman Ditch as the ditch taking water from South Fork, Dupuyer Creek for use on the Aman ranch. He recalled the Flacker and Aman Ditches both lost their intalte structures in the

1908 flood. (The Flacker Ditch was not built until at least 1912. The Flacker appropriation claims a 1913 priority date.)

c. Fred Lathrop was interviewed on July 14, 1922 (#33). He moved to the area in 1914. The Clark (Thomas) Ditch was in use for all but two years. It was damaged in a flood in 1916 but was rebuilt and back in use by 1918. All of the water went to the Aman ranch although most of it was owned lower down Gansman Coulee by Rosenfield and Campbell. In the 1918 rebuild, Aman did the work and Rosenfield furnished the material. The 1918 rebuild was the same size as the previous flume but did a better job of holding water.

d. James Reilly was interviewed on September 22, 1922 (#41). He began working for ranches in this area in 1900. In 1906 he helped clean the Clark (Thomas) Ditch. At the time the ditch was used extensively by Aman.

e. Bob Johnson was interviewed on October 3, 1922 (#51). He stated Walter Clark began the Clark (Thomas) Ditch in 1895 or 1896. He thought a man named Heighton did the work. A flume in the SENE of Section 30 took water from this ditch to a desert land entry owned by Theresa Flacker. Johnson recalled Jack Shields purchased an interest in the Percy Clark appropriation for $500.00 (PCCRC 10d) and used it through the Connor Ditch. He recalled Walter Clark attempted to acquire an additional water right for use through the Bean-Clark (Thomas) Ditch, but never followed through on the project.

f. John Matchett was interviewed on October 20, 1922 (#71). He moved to the Howe ranch in 1907 and lived there for about five years. He was familiar with the Clark (Thomas) Ditch and said it was used extensively in these years. He recalled the flume on the ditch was 2 feet wide and 8 inches deep. The Flaclter ditch was above the Clark (Thomas) Ditch and had a similar flume. A year after the Flacker Ditch was built, he tore out the lieadgate and flume. It was never rebuilt.

g. R. D. Halpin was interviewed on September 27, 1922 (#44). At the time, he

was acting as the leasing agent for W. A. Rosenfield who owned property in Gansman Coulee and claimed water rights through the Thomas Ditch. Mr. Halpin was not familiar with the water rights but stated there was seldom sufficient water to irrigate the 400.00 acres of Rosenfield property in Gansman Coulee. He noted there was continuing trouble between Rosenfield and Aman and that Aman was only entitled to irrigate 160.00 acres through the Clark (Thomas) Ditch. Mr. Halpin had ordered repairs to the flume and ditch whenever necessary to protect his leasors.

11. Field Book 926 was compiled in 1920 by Mr. Mattison (D-AA and D-X). His notes from August 26, 1920 discuss Ditch #284 (Thomas Ditch). He measured the flume at 24 inches wide by 11 inches deep. The flume was in fair shape, but was full of shale and mud to the point it could not carry water. However, the ditch below the flume appeared to have carried water that year. He was informed the current condition was the result of a recent cloudburst.

12. PCCRC Exhibit 19 is entitled "Summary of Hydraulic Data." It is a summary of the capacity of various Dupuyer Creek ditches based on 1921 and 1922 field work. The Exhibit does not identify the author. It is not clear if the ditch capacity estimates reflect the full capacity of each diversion or the amount of flow in that ditch at the time of the field work. Capacity calculations used Kutter's Formula, which was common at the time (Testimony of Bruce Anderson). Kutter's Formula was eventually replaced by Manning's Formula for slope-area flow rate calculations (See Part II). Exhibit 19 identifies the Bean or Clark (Thomas) Ditch and calculates a 3.49 cfs flow rate for the flume. A note for the ditch states: "Original capacity if flume grade were perfect."

13. The affidavit of long time area resident Woodrow W. Collins was an attachment to Skelton claim 41M 25166-00. Collins recalls the Thomas Ditch coining out of South Fork, Dupuyer Creek to irrigate land along Gansman Coulee. Collins was apparently old enough in 1931 to remember Omer Cook installing a concrete dam in the creek which was at a lower elevaton than the existing ditch. Nonetheless, the structure

still diverted water into the Thomas Ditch. Omer Cook was a successor to Adolph Aman. Collins does not mention the flume. Prior sources (PCCRC 14, p #2) identified a rock and cobble stone dam at the point of diversion. The Collins affidavit, while offering limited information, is the first mention of what appears to be a significant system improvement in the 1930s.

14. In about 1936, George Ebner drafted a memorandum for PCCRC's predecessor Valier-Montana Land & Water Company addressing the Thomas diversion (PCCRC 21). It appears Ebner was not aware of a diversion from South Fork, Dupuyer Creek to Gansman Coulee. He makes no mention of any of the information previously coinpiled by his company and indicates steps should be taken to protest any such diversion. Ebner conducted a field investigation and found the Thomas Ditch. Ebner calculated the size of the flume at 30 inches wide by 22 inches high. He estimated the length at 200 feet. A hand written note at the bottom of the first page of the memorandum states the flume was diverting 4-5 second feet at the time of the field inspection and was capable of a maximum diversion of 12-15 second feet. Ebner interviewed rancher Grover Parker as part of the field trip and was informed the ditch was used by Cook and Rosenfield. Rosenfield had financed the latest rebuild of the diversion structure and Cook had done the work. However, Cook was taking all the water and Rosenfeld was suing him (PCCRC 22).

15. Ken Duncan is the father of the current claimants in case 410-38. In 1947, he married into the Thomas Family and became familiar with their ranch on Gansman Coulee. Ken has been to the Thomas diversion on many occasions over the years. He estimates the size of the flume as 3 feet wide, 2 feet deep, and 300 feet long. This size was consistent from 1947 until the flume was replaced with a culvert in 1999. It was common to run the flume completely full of water. The concrete headwall washed out in 1948 and was replaced. The Thomas ranch (now Duncan) has been consistently irrigated since 1947 using the flume and Thomas Ditch. He does not recall irrigation on either the Skelton property or the Campbell property. Ken was eighty-four at the time of the

hearing.

16. Ken Duncan's testimony was supported by the testimony of his brother Earl Duncan and the testimony of neighbor Tom Salansky. Earl Duncan was eighty-two at the time of the hearing. He has been to the headgate on occasion since the early 1950s, but has not worked on it. He did clean the Thomas Ditch in the 1970s with a backhoe. Earl recalls Woody Collins (See Finding 12) ran the Thomas Ranch for several years and irrigated along both sides of Gansman Coulee. Tom Salansky owns the property where the Thomas diversion is located. He acquired his property in 1959 at age nineteen. He has lived there since 1965. He passes by the point of diversion several times a year on the way to his point of diversion. He agrees the flume was probably about 3 feet wide, 2 feet deep, and often ran full.

11. Capacity and Priority Dates for the 1912 and 1931 Thomas Ditch Flumes

17. The evidence includes several references to the size of the Thomas Ditch Flume. In three instances, the reference includes an estimated capacity of the flume:

Reference	Flume Size	Flume Capacity
Bestor Report 1912 (PCCRC 13)	24"w x 8"d	4.22 cfs
Atwood Report 1918 (PCCRC 14 #2)	23"w x 10"d	---
Mattison Report 1920 (D-AA)	24"w x 11"d	---
Summary of Hydraulic Data (PCCRC 19)	1.66 sq ft.	3.49 cfs
Matchett Interview 1922 (PCCRC 14 #71)	24"w x 8"d	---
Ebner Report 1936 (PCCRC 21)	30"w x 22"d	12-15 cfs
Ken Duncan 1947 (Testimony)	36"w x 24"d	---
Tom Salansky 1965 (Testimony)	36"w x 24"d	---

It is not clear if the different sizes for the flume as found in various exhibits are accurate reflections of the flume observed by that person or simply different opinions on the actual size of the same flume. We do not know how accurate each size estimate may be. Nonetheless, it does appear there were two different sized flumes in use between 1912

and 1999. From 1912 to 1922, the width of the flume remained the same. The height may have increased by as much as three inches. At some point prior to 1936, it is apparent an entirely new flume was installed. While there is some question about the actual dimensions of that flume, there is no question it was significantly larger than the original flume. Based on this record, the Master finds there were two distinct flumes used on the Thomas Ditch. The original flume, referred to in the report as the 1912 flume, replaced the first several hundred feet of the Thomas Ditch between 1908 and 1912. The second flume, referred to in this report as the 1931 flume, replaced the original flume in 1931.

A. Calculating Flume Capacity

18. Both Duncan and PCCRC presented expert testimony regarding the capacity of the flumes. The first issue addressed by the experts was determining the proper way to calculate flume capacity. Depending on the length and slope, the flume could be more accurately viewed as outlet controlled or inlet controlled. The shorter the length and steeper the slope, the more likely the flume is inlet controlled. The problem with the Thomas Ditch flume was the range of flurne length and slope reflected in the historical record. The flume at various times may have been as long as 400 feet and as short as 200 feet. The slope varied accordingly. However, during their testimony PCCRC expert Bruce Anderson and Duncan Expert Ryan Casne both stated calculating flume capacity for an outlet controlled flume was acceptable.

19. Flow rate for an outlet controlled flume is based on slope and area. The generally accepted equation employed for this is "Manning's Formula." Variables in the formula include the size of the flume, the slope of the flume from point of diversion to the outlet, and the roughness of the flume lining. Slight differences in the value assigned to each variable can have significant results in the calculated capacity. A fourth value is the hydraulic radius or wetted perimeter. For a flume capable of running completely full, the hydraulic radius is the total surface size touching water. Without actual measurements, calculating capacity with Manning's Formula is an educated guess. The water

measurement manual published by the Bureau of Reclamation states discharge determined by the slope-area method is only approximate. Bureau of Reclamation Water Measurement Manual p. 171 (2d ed., rev. reprint 1984). In these cases, the situation was further complicated by conflicting historical information on size, slope, and roughness. In addition, the parties failed to provide any evidence as to the capacity of a 24 inch wide by 11 inch deep flume. Instead, they focused on the 24 inch wide by 8 inch deep flume identified in the 1912 Bestor report (PCCRC 13) and the validity of Bestor's calculations. As a result, the Master calculated the capacity of the 1912 flume and 1931 flume based on the proper components for Manning's Formula. The Master was able to calculate flow rate with assistance from two different internet sites that performed the actual Mannings Formula calculations. These calculations are attached as Master's Exhibits 1-4 to this report.

B. **Capacity and Priority Date for the 1912 Flume**

20. Four PCCRC survey records seem to indicate relatively small increases in flume size between 1912 and 1922. This may reflect some increase in the size of the flume or a range of error in the size estimates. Attempting to apply a distinct flow rate to each possible flume size would be confusing and serve only to complicate administration of these water rights. The Master finds the original flume was a single ditch replacement that required constant maintenance. During that maintenance, the size of the flume may have changed. All these changes can reasonably relate back to the original work of replacing the ditch. Therefore, it is reasonable to assign a size of 24 inches wide by 11 inches deep to the 1912 flume.

21. Manning's Formula provides the following flow rate for the 1912 flume:

a. Area 24"x11"= 264 square inches = 1.83 square feet.

b. Hydraulic Radius (24+11+11)÷12=3.83 feet

c. Slope The appropriate slope is more problematic. It is apparent the slope could have changed with repairs to the flume. Based on the evidence, particularly the testimony of experts Anderson and Casne, it appears the slope calculation used

by Bestor in 1912 (PCCRC 13) is within reason. Therefore, the proper slope for Manning's Formula is .003.

d. Roughness This component addresses the material used in the diversion structure, the rougher the material, the more resistence and lower flow rate. There is no question the 1912 flume was made of wood. The question for roughness is the type of wood, was it rough sawn or planed? Bestor's calculation is based on planed lumber. PCCRC Exhibit 32 provides a range for roughness values based on the type of material. The range for planed timber is .010 to .014. Therefore, a roughness value of .012 is appropriate for the 1912 flume.

Applying these values in Manning's Formula results in a flow rate of approximately 7.60 cfs for the 1912 flume.

22. It is generally accepted the first several hundred feet of the original Thomas Ditch were destroyed in 1908. The flume replacing the ditch was in use by 1912. It may have been in use prior to that time. 1912 is simply the date of the first document referencing the flume. There is no evidence showing the flume was ever out of service for more than two consecutive irrigation seasons after 1912. Rather, the evidence shows the flume was repaired as necessary and water was consistently running through the flume. As a result, the 1912 flume is a continuation of the original water right appropriations that are claimed by Duncan and Skelton. However, as addressed in Part III of this report, those interests are limited to the amount of each appropriation that can be traced to Duncan or Skelton and by the capacity of the 1912 flume.

C. Capacity and Priority Date for the 1931 Flume

23. The 1936 Ebner report indicates a 30 inch by 22 inch flume was in use on the Thomas Ditch (PCCRC 21). Ken Duncan and Tom Salansky both recall a 36 inch by 24 inch flume throughout the years they were familiar with that flume. Those memories begin in 1947. The Master finds the Duncan and Salansky testimony is more credible and compelling evidence. The Ebner report (PCCRC 21) reads like an attempt to find ways to eliminate rival water rights. As such, it has less credibility. In addition, Ebner's flow

calculations are significantly lower than what appears to be reasonable, particularly with a flume that is only 200 feet long and may have had a steeper slope. Ebner did not provide the basis for his flow rate calculations.[5] Based on the Ken Duncan and Tom Salansky testimony, the 1931 replacement flume was approximately 36 inches wide by 24 inches deep.

24. Manning's Formula provides the following flow rate for the 1931 flume:

a. Area 36"x24"= 864 square inches = 6.00 square feet.

b. Hydraulic Radius (36+24+24)÷12=7.00 feet

c. Slope Absent a more compelling figure, the same slope as the 1912 fluine is acceptable, .003.

d. Rouahness Absent a more compelling figure, the same roughness as the 1912 flume is acceptable, .012.

Applying these values in Manning's Formula results in a flow rate capacity of approximately 36.32 cfs for the 1931 flume. The flow rate for any water right based on use of the 1931 flume cannot exceed the capacity of the 1931 flume minus the capacity of the 1912 flume: 36.32 cfs -7.60 cfs = 28.72 cfs. Therefore, the maximum flow rate for water right claims based on use of the 1931 flume cannot exceed 28.72 cfs.

25. The 1931 flume is an expansion of the 1912 flume. While this expansion may have been precipitated by destruction of the original flume, it is nonetheless a significant increase that constitutes a new appropriation of water. The expansion took place at least nineteen years after the original flume was installed. Nothing in the record indicates the 1912 flume was considered a temporary ditch replacement that would be enlarged when time and finances allowed. Rather, it is apparent the 1912 flume replaced the Thomas Ditch. Nearly twenty years later, the first flume was replaced with a second flume capable of diverting four to five times as much water. Therefore, that increase is

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[5] Applying Manning's Formula to a 30 inch wide by 22 inch high flume with the same slope and roughness used by Bestor in 1912 results in a flow rate of approximately 25.50 cfs. Ebner may have been using a different method to calculate flow rate.

entitled to a priority date reflecting the date the second flume was first put to use.

26. While there is no clear date of first use for the 1931 flume, lifelong area resident Woodrow W. Collins stated a new concrete diversion structure was installed in 1931. That appears to be a significant improvement to the existing cobble and rock diversion dam and signaled a major upgrade. The 1936 Ebner Report (PCCRC 21) includes notes of an interview with area resident Grover Parker. Mr. Parker stated the diversion structure and flume inspected by Ebner in 1936 had been in use for four or five years. This appears to agree with the Collins affidavit and places first use at some point in 1931. Setting a priority date at the end of the identified time period is reasonable. Therefore, a December 31, 1931 priority date is appropriate for the water rights first used through the 1931 expanded flume.

III. Water Right Ownership

A. Historical Water Rights Claimed by Duncan and Skelton

27. Given the capacity of the 1912 flume, only a small portion of the historical water rights claimed by Duncan and Skelton continue to be significant. However, the Duncan and Skelton interests in these historical water rights are distinct and were acquired in different ways. They are not entitled to the same flow rates and priority dates. As a result, a review of these historical rights is necessary for a determination of those flow rates and priority dates.

28. Both Duncan and Skelton own property previously owned by the Clark family. Duncan is the successor to Clarks through the 1903 conveyance from Arrnedia Clark to Adolph Aman (PCCRC 10j). Aman was succeeded through mesne conveyances by Cook, then Thomas and finally Duncan. Skelton is a successor to Clarks through the 1910 conveyance from Blackleaf Land and Cattle Company to Rosenfield (PCCRC 11k). Rosenfield was succeeded through mesne conveyances by Smith, then Campbell and finally Skelton. The Aman and Rosenfield lines of ownership are based on the deeds and other exhibits placed in evidence at hearing. They give a general idea of the chain of title, but are clearly not a complete accounting of all land transactions for what is now Duncan

and Skelton property.

29. Five different notices of appropriation were claimed in this adjudication as the basis for a water right claim from South Fork, Dupuyer Creek through the Thomas Ditch:

Appropriator	Priority Date	Flow Rate	Claimed By
B. Percy Clark	9/19/1895	25.00 cfs	Duncan & Skelton
Armedia Clark	1/14/1902	50.00 cfs	Duncan & Skelton
Mustard/Roberts/Deschenau	9/17/1904	50.00 cfs	Skelton
Walter Clark	5/25/1906	50.00 cfs	Skelton
Theresa Flacker	4/8/1913	10.00 cfs	Duncan

i. Mustard/Roberts/Deschenau and Walter Clark Appropriations

30. The Mustard/Roberts/Deschenau (1904), and Walter Clark (1906) appropriations were probably never perfected. The places of use claimed in these filings are so broadly defined it is not even clear they intended to use the Thomas Ditch. If they did intend to use the Thomas Ditch, there was no room in that ditch. When the Clarks sold to Rosenfield in 1910, they still claimed flow rates in excess of the original 50.75 cfs capacity of the Thomas Ditch as calculated by Duncan's expert witness David Schmidt. It is not reasonable to assume Clarks or their successors ever diverted a junior right, such as the Walter Clark 1906 appropriation, at the expense of their own senior rights. It is even less reasonable to assume Clarks or their successors allowed others, such as Mustard/Roberts/Deschenau, to divert water through their ditch to their own detriment. If these appropriations were ever perfected, they have not been used through the Thomas Ditch since 1912. Since the Thomas Ditch is the only means of conveyance for South Fork, Dupuyer Creek used in Gansman Coulee, neither appropriation could have been used on Duncan or Skelton property after 1912. Therefore, any statement of claim based on the Mustard/Roberts/Deschenau or Walter Clark appropriations is not valid.

ii. B. Percy Clark Appropriation

31. B. Percy Clark appropriated his 25.00 cfs South Fork, Dupuyer Creek water right in 1895. This is the most senior right claimed by either Duncan or Skelton. The evidence presented at hearing shows B. Percy Clark sold three portions of this water right between 1897 and 1901:

Date Recorded	Flow Rate	Recipient	Exhibit
November 6,1897	4.00 cfs	Estate of Max Grotthus	PCCRC 10c
March 23, 1900	2.50 cfs	John W. Shields	PCCRC 10d
April 24, 1901	5.00 cfs	Cora H. Clark	PCCRC 11a

The Grotthus and Cora Clark transactions probably never left the control of the Clark family. B. Percy Clark was the administrator for the Estate of Max Grotthus. In 1900, the Estate sold land and presumably this share of the 1895 appropriation to Arrnedia Clark (PCCRC 11f). Cora Clark was a family member and shareholder in the Blackleaf Land and Cattle Company. On the other hand, the Shields transaction was actually removed from the Thomas Ditch and used elsewhere (PCCRC 14 #51). In any case, when the Blackleaf Land and Cattle Company sold its Gansman Coulee property to Rosenfield in 1910, what remained of the 1895 appropriation transferred as part of that sale. However, Rosenfield was only able to use 7.60 cfs of this right after the 1912 flume was installed. Therefore, only 7.60 cfs of the 1895 appropriation remained valid. As discussed below none of the 1895 appropriation passed through the Aman line of ownership.

iii. Armedia Clark Appropriation

32. Although the 1895 B. Percy Clark appropriation was large enough to completely fill the 1912 flume, the 1902 Armedia Clark 50.00 cfs appropriation continued to be a factor. The evidence presented at hearing shows the Clark family sold several portions of this appropriation between 1903 and 1905:

Date Recorded	Flow Rate	Recipient	Exhibit
August 14, 1903	2.50 cfs	Marion Hawkins	PCCRC 10i
August 3, 1904	2.50 cfs	William Greer	PCCRC 10e
August 3,1904	2.50 cfs	Arthur D. Lambie	PCCRC 10f
August 3, 1904	3.00 cfs	David D. Lambie	PCCRC 10g
August 3, 1904	2.50 cfs	Mary P. Larnbie	PCCRC 10h
August 29, 1903	4.50 cfs	Adolph Aman	PCCRC 10j
February 24, 1905	7.00 cfs	Cora H. Clark	PCCRC 101

The Aman transaction is significant. It is the only portion of the 1902 appropriation that the evidence shows was acquired by Duncan's predecessors. The Cora Clark transaction never left the control of the Clark family. The history of the five remaining transactions are unknown. They may have been intended for use along Gansman Coulee through the Thomas Ditch, or they may have moved to another ditch. Absent evidence showing they remained in the Thomas Ditch, it is assumed they were used elsewhere and ceased to be a factor. The remainder of the 1902 appropriation passed to Rosenfield in 1910. However, when the 1912 flume restricted the maximum flow rate to 7.60 cfs, Rosenfield no longer had the ability to divert any of the 1902 appropriation. From 1912 forward, Rosenfield and his successors could fill the flume with the 1895 appropriation. Therefore, only the 4.50 cfs of the 1902 appropriation conveyed through the Aman line of ownership continues to be a factor in these cases. None of the 1902 appropriation passed through the Rosenfield line of ownership.

iv. Theresa Flacker Appropriation

33. The Theresa Flacker 1913 appropriation (PCCRC 5e) was originally diverted through its own ditch (PCCRC 14 interviews 51 & 71, and PCCRC 16b). Flacker's claimed place of use is located on what is now Duncan property. Theresa Flacker was apparently related to Adolph Aman and presumably conveyed the 1913 appropriation to Aman as part of a 1915 land transaction (PCCRC 10m). This indicates Aman acquired an additional 10.00 cfs appropriation from South Fork, Dupuyer Creek in

1915. He was probably using the Flacker appropriation prior to that time. When the Flacker Ditch was destroyed, Duncan asserts Aman moved the 1913 Flacker appropriation to the Thomas Ditch. If this is accurate, by 1915 Aman owned 4.50 cfs of the 1902 appropriation and 10.00 cfs of the 1913 appropriation. However, Aman could only divert 7.60 cfs through the 1912 flume. Therefore, his interest in the 1913 appropriation was limited to flume capacity minus his interest in the 1902 appropriation (7.60-4.50=3.10 cfs).

34. Evidence presented at hearing raised questions about the priority date for the Flacker appropriation. Flacker may not have complied with the filing requirement found in Section 89-810, RCM (1947) (repealed 1973). The flaw in the notice of water right is unique. Flacker claims an April 8, 1913 priority date. The notice was signed and notarized on April 8, 1912. The exhibit does not indicate when the notice was filed with the clerk and recorder. Therefore, it is not possible to determine if the filing complied with controlling statute. In any case, sufficient evidence of actual beneficial use of this water was provided to support an April 8, 1913 priority date as a use right. The original Flacker Ditch was in progress in 1912 (PCCRC 13). It was diverting water within a year and was torn out soon after it began diverting water (PCCRC 14 # 71). Based on this record, the April 8, 1913 priority date is reasonable for this use right.

B. **Skelton's Ownership of the Historical Water Right Appropriations**

35. The Skelton interest in the 1895 and 1902 appropriations seems to be fairly straight forward. When Blackleaf Land and Cattle Company (Clark family) sold to Rosenfield in 1910 (PCCRC 11k), its interest in both appropriations conveyed as part of that transaction. When Rosenfield sold his Gansman Coulee property to E. Broadhurst Smith in 1940, his interest in the 1895 appropriation transferred as part of that transaction.[6] By 1940, the Rosenfield portion of the 1902 appropriation had been

[6] At the same time Rosenfield conveyed his Gansman Coulee property to E. Broadhurst Smith (PCCRC 11m), he conveyed his Blackleaf Creek property to Frederick G. Campbell (PCCRC 11n). Frederick G. Campbell is the predecessor of Campbell Brothers. In case 41O-32A, the Master found none of the South Fork, Dupuyer Creek claims were ever used on or perfected for the Campbell Brothers' claimed place of use. Therefore, it

abandoned through nonuse since 1912. Therefore, none of the 1902 appropriation transferred to Smith. As a successor to Rosenfield and Smith, Skelton acquired an interest in the 1895 appropriation up to the capacity of the conveyance system. That capacity was limited by the 1912 flume to 7.60 cfs. Therefore, Skelton can claim no more than 7.60 cfs of the waters of South Fork, Dupuyer Creek with a September 19, 1895 priority. As addressed in Part III C of this report, Skelton's interest in the 1895 appropriation is actually 7.25 cfs based on a small share Duncan acquired at some point after 1940.

C. Duncan's Ownership of the Historical Water Right Appropriations

36. Duncan is a successor to Adolph Aman. In 1903, Armedia Clark sold land and a specific 4.50 cfs interest in the 1902 appropriation to Adolph Aman (PCCRC 11c). By making the specific conveyance, it is presumed this is the only water right that transferred through this deed. Therefore, as the successor to Aman, Duncan can claim none of the 1895 appropriation and only 4.50 cfs of the 1902 appropriation.

37. Duncan is also a successor to Walter Rosenfield. At some point after 1940, Duncan or his predecessor acquired the SWNW of Section 34, T27N, R8W. This 40.00 acre parcel was part of the Rosenfield line of ownership. Rosenfield sold the property to Smith in 1940. Therefore, any sale to Duncan or his predecessor took place after 1940. No evidence was provided to show when Duncan or his predecessor acquired this property. Nonetheless, it is part of his claimed place of use and has been confirmed as historically irrigated by the DNRC. Duncan acquired a share of the 1895 appropriation with this 40.00 acre parcel.

38. The interest Duncan acquired for this 40.00 acre parcel is based on a proportional share of the 1895 appropriation, as it existed after 1940, in relation to total acres irrigated. Since 1912, Rosenfield and his successors have only been able to divert 7.60 cfs of the 1895 appropriation. Therefore, Duncan's share is based on this total flow

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is presumed all of the 1895 appropriation transferred to Smith and none of the appropriation transferred to Campbell.

rate. Skelton's total acres irrigated, as corrected by the Master in Part IV of this report, is 454.00 acres. Duncan is claiming 20.00 irrigated acres in the SWNW of Section 34, T27N, R8W. Therefore, the number of acres claimed as irrigated by the 1895 appropriation totals 474.00 acres. Flow rate is based on a pro rata share of total flow rate and total acres irrigated:

Flow Rate Per Acre:	7.60 cfs ÷ 474.00 = 0.016 cfs/acre
Skelton Flow Rate:	454.00 acres x 0.016 cfs = 7.25 cfs
Duncan Flow Rate:	20.00 acres x 0.016 cfs = 0.35 cfs
	Total 7.60 cfs

39. Evidence at hearing indicates Aman and his successors often controlled the Thomas Ditch and used all water diverted through the ditch at the expense of other water users. As a result, it appears Aman and his successors maintained a combination of historical appropriations up to the capacity of the 1912 flume. The original combination would have included 4.50 cfs of the 1902 appropriation and 3.10 cfs of the 1913 Flaclter appropriation (4.50 + 3.10 = 7.60). At some point after 1940, Duncan or his predecessor acquired the interest in the 1895 appropriation. By this time, the larger 1931 flume was in use. As a result, Duncan was able to add his newly acquired interest in the 1895 appropriation to his existing interests in the 1902 and 1913 appropriations. Therefore, Duncan is entitled to two water right claims based on historical notices of appropriation and a third water right as a historical use right:

Priority Date	Flow Rate
September 19, 1895	0.35 cfs
January 14, 1902	4.50 cfs
April 8, 1913	3.10 cfs

D. Duncan and Skelton Ownership of a 1931 Use Right

40. The history of water use through the Thomas Ditch has included a certain amount of conflict between the owner of the land at the top of Gansman Coulee and the owner of land farther down the coulee. Duncan is the current owner of land at the top of

the coulee. Skelton is the owner of land farther down the coulee (PCCRC 6). Several exhibits admitted into evidence indicate Duncan's predecessors often denied others access to the Thomas Ditch (PCCRC 14 #6, #33, & #44). At the same time, there is also evidence of cooperation between the two interests (PCCRC 14 #33 & #44). This conflict finally resulted in litigation in the 1930s when Rosenfield sued Cook (Aman successor) over use of the Thomas Ditch. On December 11, 1936, Cook and Rosenfield filed a stipulation vacating their January 7, 1937 hearing (late (PCCRC 22a). This apparently signaled some kind of agreement resolving their water right and ditch right conflict. There is no record providing the terms of that agreement. At the same time, no evidence was presented indicating there has been any further conflict between Cook and his successors (Duncan) and Rosenfield and his successors (Skelton). This may be the result of the 1931 flume expansion. More water could be diverted out of South Fork, Dupuyer Creek.

41. After 1936, it appears, the predecessors to Duncan and Skelton were able to receive sufficient water for their needs. Ken Duncan testified that he did not recall irrigation on the Skelton property after 1947. However, all of Skelton's claimed place of use was confirmed as irrigated in the 1962 Teton County Water Resource Survey. Ken Duncan did not indicate there were ever conflicts over the water. It is apparent both the Duncan and Skelton places of use were irrigated throughout this period of time.

42. Based on what appears to be mutual use of the 1931 flume, both Duncan and Skelton are entitled to a use right for the increased flow rate resulting from the 1931 flume expansion. As addressed in Finding of Fact 23, the capacity of the 1931 flume above the capacity of the 1912 flume is 28.72 cfs. The evidence indicates Duncan and Skelton historically irrigated at the same time and shared the full capacity of the 1931 flume when it was available. It is also apparent Duncan and Skelton each had the ability to use all the capacity of the 1931 flume when the other party was not irrigating. Therefore, both Duncan and Skelton are entitled to a water right claim representing the increased flow rate resulting from installation of the 1931 flume. These water rights are

entitled to a flow rate equal to the capacity of the 1931 fluine minus individual flow rates for the Duncan and Skelton senior water right claims.

E. **Summary of Priority Dates and Flow Rates for Duncan and Skelton**

43. Based on the record before the Master, Skelton is entitled to water rights based on the 1895 notice of appropriation. Duncan is entitled to water rights based on the 1895 and 1902 notices of appropriation and a 1913 use right. In addition, Duncan and Skelton are each entitled to a use right for the capacity of the 1931 flume minus their senior water rights. The total flow rate for the Duncan water rights and the Skelton water rights cannot exceed the 36.32 cfs capacity of the 1931 flume:

Duncan		**Skelton**	
Priority Date	**Flow Rate**	**Priority Date**	**Flow Rate**
September 19, 1895 B. Percy Clark	0.35 cfs	September 19, 1895 B. Percy Clark	7.25 cfs
January 14, 1902 Armedia Clark	4.50 cfs		None
April 8, 1913 Theresa Flacker (Use Right)	3.10 cfs		None
December 31, 1931 Use Right	28.37 cfs	December 31, 1931 Use Right	29.07cfs
Total	36.32 cfs		36.32 cfs

A review of all Duncan and Skelton statements of claim show both parties claimed the maximum flow rate for every notice of appropriation they claimed. While no single claim has a flow rate as high as the capacity of the 1931 flume or the use right identified in this table, the combined flow rates for the Duncan claims and the combined flow rates for the Skelton claims are each significantly higher than the 1931 flume capacity. As addressed in the conclusions of law, creating implied claims for the 1931 use rights will not result in flow rates exceeding what Duncan and Skelton originally claimed.

IV. Place of Use and Acres Irrigated

44. All three Duncan claims in case 410-38 and Skelton claim 41O 25168-00 in case 410-35 received acres irrigated and place of use issue remarks. None of the Duncan claims received objections regarding acres irrigated and place of use. Skelton objected to acres irrigated and place of use for claim 41O 25168-00. There were no other acres irrigated and place of use objections to any of the Skelton claims. At hearing, acres irrigated and place of use were addressed in the context of nonperfection and abandonment. PCCRC argued Skelton could show no irrigation prior to the 1962 Teton County Water Resource Survey. None of the parties pursued testimony regarding incremental development or pre-1973 changes to the places of use. There is no evidence indicating an expansion of the places of use coinciding with the expanded flume capacity in 1931.

45. Based on the record, the Master find:; the places of use claimed by Duncan and Skelton were historically irrigated from South Fork, Dupuyer Creek. Various historical documents in evidence support historical irrigation along both sides of Gansman Coulee. Although this acreage was not all specifically identified in the notices of appropriation, it is clear the land along Gansman Coulee is the only area that could be effectively irrigated with the Thomas Ditch. The original appropriators may have had bigger plans, but it is apparent actual irrigation practices settled into a predictable pattern relatively quickly. The irrigated acreage identified in the Water Resource Survey appears to be an accurate reflection of historical use. There is no evidence indicating a significant expansion in the claimed places of use after 1931.

A. Duncan Place of Use and Acres Irrigated

46. All three Duncan water right claims in case 410-38 appeared in the Temporary Preliminary Decree for this Basin with the same 482.00 acre place of use. All three claims received issue remarks questioning the claimed place of use and number of historically irrigated acres. None of the claims received objections on these issues. On October 2,2009 DNRC Deputy Regional Manager Kraig Van Voast filed a Memorandum

addressing these remarks. The Memorandum indicated Duncan had provided sufficient evidence of historical use to resolve the remarks. On December 7,2009, Duncan provided three motions to amend the claims to the DNRC. On December 10,2009, Mr. Van Voast filed a second Memorandum with the Duncan motions to amend as attachments. Mr. Van Voast recommended accepting the proposed amendments to the claims and removing all issue remarks.

47. Based on these filings, the acres irrigated for claims 41M 121495-00, 41M 121496-00, and 41M 121497-00 should be amended to 436.00 acres. The place of use legal descriptions for the place of use should be corrected as necessary to reflect this acres irrigated reduction. In addition, Duncan's implied claim representing an interest in the 1931 flume should have the same place of use and acres irrigated.

B. **Skelton Place of Use and Acres Irrigated**

48. Skelton's four South Fork, Dupuyer Creek claims 41M 25166-00, 41M 25167-00, 41M 25169-00, and 41M 25170-00 were originally filed by Evan A. Campbell in 1981. The original claimed place of use for each claim totaled 537.00 acres. In 2002, Skelton purchased the property subject to a contract for deed held by Wayvan J. Campbell. On September 30,2003, Skelton filed an amendment reducing the place of use on all four claims to 491OO acres. This is the acreage total that appeared on all four claims in the Temporary Preliminary Decree. None of these claims received issue remarks. Skelton objected to the flow rate for all four claims.

49. At hearing, PCCRC expert witness John Westenberg identified 37.00 of the claimed 491OO acres, in the S2NE and NENESE of Section 12, T26N, R8W as located on property owned by Tee Six Ranch. Mr. Westenberg opined this was a mistake by Skelton and the 37.00 acres should be removed from all four South Fork, Dupuyer Creek claims. The area in question is marked on Exhibit PCCRC 6. The issue was not addressed further by any witness at hearing and was not pursued by PCCRC in its post hearing filing. Skelton did not address the issue in its post hearing filing. Rather, Skelton asserts all four claims are correct as they appeared in the Temporary Preliminary Decree.

50. Pursuant to Article II rule 202, M.R.Evid., the Master takes judicial notice of the current property ownership record maintained by the State of Montana as the Montana Cadastral. A review of the Montana Cadastral property ownership maps for Section 12, T26N, R8W confirms this property is currently owned by Tee Six Ranch, Inc. There is nothing in the claim files indicating this property was sold to Tee Six Ranch, Inc. There is no ownership update adding Tee Six Ranch, Inc. as a co-owner. Based on this record, it is apparent the addition of these 37.00 acres was an error. Therefore, the actual total of acres irrigated within Skelton's claimed place of use should be corrected to 454.00 acres (491OO - 37.00 = 454.00 acres).

51. Sltelton's Gansman Coulee claim 41O 25168-00 was also filed by Evan A. Campbell in 1981. The claimed place of use is the same 537.00 acres originally claimed by the four South Fork, Dupuyer Creek claims. The claim was acquired by Skelton at the same time as the South Fork, Dupuyer Creek claims. On September 12,2002, Scott O. Swanson, attorney for Wayvan Campbell, filed a letter with the DNRC in response to an inquiry about these 537.00 acres. Mr. Swanson stated the 537.00 acre figure was an estimate on the number of acres within the historical place of use. Mr. Swanson stated the claimant did not have the tools or expertise to provide a completely accurate acreage figure. Unlike the South Fork, Dupuyer Creek claims, claimants Campbell and Sltelton did not amend the place of use. As a result, claim 41O 25168-00 appeared in the Temporary Preliminary Decree with a 537.00 acre place of use and multiple issue remarks. Skelton filed an objection to the claim listing flow rate and acres irrigated, but gave no information on the nature of the objection.

52. The place of use/acres irrigated issue on claim 41O 25168-00 was completely ignored at hearing. Skelton provided no evidence to support the number of historically irrigated claims. At the same time, it is apparent this claim is asserting the same place of use as the four South Fork, Dupuyer Creek claims. Confirmed irrigation on those claims totals 491OO acres. As discussed above, only 454.00 of those acres are located on Skelton property. Based on the current record, the Master finds claim 41O

25168-00 should reflect the same 454.00 acre place of use.

53. Finally, a DNRC review of water right claims for interbasin transfers included a review of Skelton claim 41O 25170-00. This review had nothing to do with proceedings in case 410-35. Nonetheless, on May 11, 2011, Water Resource Specialist John Beyrau filed a memorandum identifying a place of use legal description error for this claim. The claim appeared in the Temporary Preliminary Decree with parcels 10 and 11 listed in Section 2, T27N, R8W. These parcels are actually located in T26N. This information was provided to Skelton. This correction can be applied to this claim without further proceedings.

CONCLUSIONS OF LAW

1. The Montana Water Court has exclusive jurisdiction to interpret and determine all existing water rights. Mildenberger *v.* Galbraith, 249 Mont. 161, 166, 815 P.2d 130, 134 (1991). An "existing water right" is defined as "a right to the use of water that would be protected under the law as it existed prior to July 1, 1973. The term includes federal non-Indian and Indian reserved water rights created under federal law and water rights created under state law." Section 85-2-102(12), MCA. This includes jurisdiction to review all objections to preliminary decrees, Section 85-2-233, MCA, and all issue remarks resulting from Montana Department of Natural Resources and Conservation (DNRC) claim examination, Section 85-2-248, MCA.

2. If a claim appears in a Water Court decree with issue remarks resulting from DNRC claim examination, the information resulting in the issue remarks and the issue remarks themselves must be weighed against the claimed water right. Section 85-2-247, MCA. The issues raised by the remarks must be resolved as part of the adjudication process. Section 85-2-248(2), MCA.

3. A properly filed Statement of Claim for an existing water right is prima facie proof of its content. Section 85-2-227, MCA. This prima facie validity may be overcome by other evidence that proves one or more elements of the prima facie

Statement of Claim are incorrect. A prima facie claim meets the minimum threshold of evidence necessary to establish the facts alleged, and shifts the burden of production to an objector to overcome that threshold. The burden of persuasion remains ultimately with the claimant to prove up a water right claim. Section 26-1-402, MCA. Burkhartsmeyer et al. v. Burkhartsmeyer et al., Case 40G-2, (MT Water Court Memorandum Opinion and Order Adopting Master's Report Mar. 11, 1997).

4. The degree or weight of evidence needed to contradict or overcome the prima facie proof statute is a preponderance of the evidence. Burkhartsmeyer et al. v. Burkhartsmeyer et al., Case 40G-2, (MT Water Court Memorandum Opinion and Order Adopting Master's Report Mar. 11, 1997). The Montana Supreme Court has defined preponderance as "a relatively modest standard that the statutory criteria are "more probable than not" to have been met." Hohenlohe *v.* State, 2010 MT 203 ¶ 33, 357 Mont. 438,240 P.3d 628. In cases 410-35 (Skelton) and 410-38 (Duncan), objector PCCRC has provided sufficient evidence to meet its burden of proof. The evidence shows that several elements of the statements of claim filed far all claims in cases 410-35 and 410-38 do not accurately reflect historical use.

5. In order to claim the 1895, 1902, and 1913 priority dates, Duncan and Skelton, must show some contractual relationship between themselves and the original appropriators. *Osnes* Livestock Co. v. Warren, 103 Mont. 284,290, 62 P.2d 206,209 (1936). While the record before the Master is not complete, that contractual relationship can be reasonably established through the deeds submitted as exhibits at hearing:

a. The right to use water passes with a conveyance of land unless specifically exempted from that transaction. Section 85-2-403 MCA; Lensing v. Day & Hansen Security Co., 67 Mont. 382, 215 P. 999 (1923). The fact that the deed is silent as to water rights or fails to include reference to appurtenances does not affect this conveyance. Yellowstone Valley Co. v. Assoc. Mtg. Investors, *Inc.,* 88 Mont. 73,290 P. 255 (1930). Therefore, a portion of the 1895 appropriation transferred from the Clark family to Rosenfield in 1910 and then by mesne

conveyances to Skelton, subject to flume capacity. All of the 1913 appropriation transferred from Flacker to Aman in 1915 and then by mesne conveyances to Duncan, subject to flume capacity.

b. By expressly mentioning a specific water right in a deed, all other water rights are considered to be excluded from that transaction. Section 85-3-702, MCA. It is presumed the seller reserved all water rights except for the specific right identified in the deed. *Castillo* v. *Kunnemann*, 197 Mont. 190, 197, 642 P.2d 1019, 1024 (1982). Therefore, only 4.50 cfs of the 1902 appropriation was conveyed from the Clark Family to Adolph Aman in the 1903 transaction and then by mesne conveyances to Duncan.

c. When the owner of a tract of land with appurtenant water rights conveys a portion of the land without an expressed division of the water rights, the rights are divided into amounts that are in proportion to the total number of acres irrigated prior to the conveyance. Spaeth *v.* Emmett, 142 Mont. 231,237,383 P.2d 812, 815 (1963). Therefore, when Duncan or his predecessor acquired a parcel of land with an appurtenant 1895 water right appropriation, they acquired a share of that water right in proportion to the total number of acres irrigated prior to the conveyance.

6. Although certain claims in cases 410-35 and 410-38 received acres irrigated issue remarks, the number and location of the claimed acres irrigated was not a significant issue at hearing. This is likely the result of the interbasin nature of these water rights. Once the water was diverted from South Fork, Dupuyer Creek and transported out of that basin, the location and extent of irrigation has minimal affect on water users in the basin where the water originates. *McIntosh* v. Graveley, 159 Mont. 72, 82-83,495 P.2d 186, 192 (1972). Duncan has addressed and resolved all issues regarding his place of use and acres irrigated. While Skelton did not address the place of use and acres irrigated issues raised on his water rights, the record is sufficient to resolve those issues.

7. Flow rate is based on either need or conveyance facility. If the capacity of the system exceeds the need, the appropriation is limited to need. If the need exceeds the

capacity of the system, the appropriation is limited to system capacity. Bailey v. Tintinger, 45 Mont. 154, 178, 122 P. 575, 583 (1912). Therefore, any water right based on use of the Thomas Ditch is limited to the capacity of the Thomas Ditch. That capacity is properly based on the amount of water that could be diverted through the flume. Prior to 1931, that flume capacity was 7.60 cfs. The original size of the Thomas Ditch is not dispositive. The 1912 flume was not a temporary repair, it was a condition that "existed for such length of time as to indicate an intention on the part of the appropriator to claim no more water than the canal in that condition will carry." Bailey 45 Mont. at 163, 122 P. 575 at 578. Any water right or combination of water rights claiming use of the Thomas Ditch prior to 1931 is limited to the 7.60 cfs capacity of the 1912 flume.

8. Abandonment of a water right requires nonuse and an intent to abandon. The objectors bear the initial burden of showing a iong period of continuous nonuse of the water right claim. This showing raises a rebuttable presumption the claimant intended to abandon the water right. The burden then shifts to the claimant to explain the long period of nonuse. In re the Adjudication of Water Rights of the Clark Fork River, 254 Mont. 11, 15,833 P.2d 1120, 1123 (1992); 79 Ranch v. Pitsch, 204 Mont. 426,432-33, 666 P.2d 215, 218 (1983). The claimant must introduce specific evidence explaining or excusing the long period of nonuse. In re the Adjudication of Water Rights of the Musselshell River, 255 Mont. 43, 51, 840 P.2d 577 (1992). Partial use of a water right over a long period of time does not necessarily show an intent to use the entire water right or prevent a finding of partial abandonment. Holmstrom Land Co. v. Meagher County Newlan Creek Water Dist., 185 Mont. 409,423-24, 605 P.2d 1060, 1068-69 (1979). Therefore, any portion of the 1895 appropriation above the 7.60 cfs capacity of the 1912 flume claimed by either Duncan or Skelton has been abandoned. Any interest Duncan or Sltelton may have had in the 1902 appropriation, except for Duncan's 4.50 cfs share, has been abandoned. Any interest Duncan may have had in the 1913 appropriation, above the capacity of the 1912 flume minus Duncan's interest in the 1902 appropriation, has been abandoned. The evidence tends to show the 1904 and 1906 appropriations were never

perfected. It they were ever perfected, any interest Skelton may have had in either appropriation has been abandoned.

9. Duncan and Skelton both assert their predecessors reacquired any portions of the 1895 and 1902 appropriations conveyed to other parties by adverse possession. Both water users argue they, and their predecessors, have used all water conveyed through the Thomas Ditch throughout the period of time there has been a Thomas Ditch. They assert the various documents showing the sale of portions of the 1895 and 1902 appropriations mean nothing. All of the water was historically used on land they now own in Gansman Coulee. If portions of either appropriation were sold, Duncan or Skelton reacquired them when they acquired the land owned by that party. Or, the recipient of these water right interests lost the interest to either Duncan or Skelton through adverse possession.

10. Adverse possession requires proof the adverse use has been (a) continuous for the statutory period; (b) exclusive (uninterrupted, peaceable); (c) open (notorious); (d) under claim of right (color of title); (e) hostile and an invasion of another's rights which he has a chance to prevent. Courts have applied three basic prerequisites to establish adverse possession of a water right: 1) The claimant used water at a time when the other water user had need of it. (2) The claimant used the water in such a substantial manner as to notify the other water user that they were being deprived of water to which they were entitled. (3) During all of that period, the other water user could have maintained an action against the claimant for so using the water. Smith v. Krutar, 153 Mont. 325, 330, 457 P.2d 459,461-62 (1969).

11. Adverse possession does not apply to Skelton. The record shows Skelton's predecessor (Rosenfield) acquired the majority of the 1895 and 1902 appropriations in 1910. By 1912, Rosenfield could only divert 7.60 cfs of the 1895 appropriation. He did not have the ability to take more water from anyone through adverse possession.

12. Duncan is the successor to Aman. By 1912 Aman had the same problem as Rosenfield, the Thomas Ditch could only carry 7.60 cfs. Nonetheless, Aman could have

adversely possessed portions of the 1895 and 1902 appropriations. Aman only acquired 4.50 cfs of the 1902 appropriation in the conveyance from Armedia Clark. He could have improved his situation by acquiring 7.60 efs of the 1895 appropriation or an additional 3.10 cfs of the 1902 appropriation. There, were two potential sources available to Aman, Rosenfield and the other various interests in the 1895 and 1902 appropriations the Clark family sold before selling the remainder to Rosenfield. A total of 2.50 cfs of the 1895 appropriation was sold to John W. Shields in 1900, A total of 13.00 cfs of the 1902 appropriation was sold to various parties in 1903 and 1904. However, we have no real idea what happened to these shares. Critically, did all of these purchasers continue to divert their share through the Thomas Ditch? The Bob Johnson interview (PCCRC 14 #51) indicates John W. Shields moved his share of the 1895 appropriation to the Connor Ditch. The same could be true of all of the 13.00 cfs of the 1902 appropriation sold by the Clark family. There is simply insufficient evidence to support adverse possession of any of these shares of the 1895 and 1902 appropriations by Aman. This leaves the portions of the 1895 and 1902 appropriations held by Rosenfield.

13. Aman and his successors often attempted to control all of the water diverted into the Thomas Ditch. However it does not appear this use was exclusive. Skelton's predecessors were able to receive water often enough to justify paying for ditch maintenance and repairs. In the 1930s, Skelton's predecessor (Rosenfield) decided the situation warranted more aggressive action. He sued Duncan's predecessor (Cook) over use of the Thomas Ditch. This does not indicate Duncan's predecessors were consistently using all their water to the detriment of other water users or that Skelton's predecessor was allowing any adverse use to go unchallenged. Ken Duncan testified Duncan's predecessor (Thomas) used all of the water in the Thomas Ditch after 1947. However, the 1962 Teton County Water Resource Survey indicates Skelton's property was irrigated. In their testimony, both Greg Duncan and Steve Skelton stated irrigation in Gansman Coulee is only viable with South Fork, Dupuyer Creek water. Therefore, Ken Duncan's testimony is not sufficient to show Duncan's use was exclusive or hostile to Skelton's

use. If anything, it appears after 1931 both interests were able to irrigate with the same water. The Master finds no merit in Duncan's adverse possession argument.

14. Implied claims, as provided for in Rule 35 W.R.C.E.R., are used to separate multiple claims from the single statement of claim filing. The need for an implied claim can be identified through the settlement process or as a result of a hearing. An implied claim should not be an expansion of a water right or an attempt to circumvent claim filing requirements under Sections 85-2-221 and 85-2-225, MCA. *Eliasson Ranch* Co. *v. Rodeghiero, et al.,* Case 40A-115 (Order Amending and Adopting Master's Report Jun. 28,2004). The overstatement of an element on a statement of claim is the most common indicator supporting the need for an implied claim. *Id* at 4-5. The 1931 flume expansion constitutes a new appropriation of water from South Fork, Dupuyer Creek. As such, it should be represented in separate water right claims with a priority date reflecting the date of first use. This requires implied claims for both Duncan and Skelton. The implied claims are unique in that they are based on more than one statement of claim filed by Duncan and Skelton. In addition, this report recommends terminating three of the four of the Skelton South Fork, Dupuyer Creek claims. Nonetheless, these implied claims do not constitute an expansion of the water right claims filed by either claimant. Rather, they amount to a reduction in these water rights. The overall flow rate claimed by both Duncan and Skelton is reduced and a significant portion of the flow rate now has a much more junior priority date. These implied claims arc: entitled to a December 31, 1931 priority date. *Vidal* v. *Kensler,* 100 Mont. 592, 51 P.2d 235 (1935); Rule 13(f)(3), W.R.C.E.R. Key terms for each implied claim are listed below. The relationship of parent claim to implied claim is as follows:

Duncan		Skelton	
Parent Claims (Priority Date)	Implied Claim (Priority Date)	Parent Claims (Priority Date)	Implied Claim (Priority Date)
41M 121495-00 (1/14/1902) 41M 121496-00 (4/8/1913) 41M 121497-00 (911911895)	41M 30052592 (12/31/1931)	41M 25170-00 (911911895)	41M 30052591 (1213111931)

15. This report is based on an imperfect factual record. While PCCRC provided sufficient evidence to prove all of the water right claims involved are not correct as they appeared in the Temporary Preliminary Decree, it was left to the Master to sift through the exhibits and testimony to reach some determination of the historical use of these water rights. Given the record, this determination required a certain amount of speculation. However, that is the nature of cases seeking a factual answer to events that took place 100 years ago. There are no witnesses. The written record, while extensive, could never be complete. Nonetheless, the court must "do the best it can with what it has to work with." Allen v. *Petrick*, 69 Mont. 373, 375,222 P. 451,452 (1924). The factual findings in this report are a reasonable accounting of the historical use of the water right claims at issue. However, the resulting recommendations may not facilitate future administration of the water rights. Controlling water diversions into a single ditch that carries six different water rights claims with different flow rates and priority dates will be challenging. Distributing those water rights down the ditch between two competing claimants will be equally challenging.

RECOMNIENDATIONS

Case 41O-35 (Skelton)

Based on the record before the Master and applicable law, the following changes should be applied to claims in case 410-35:

41M 25166-00

Priority Date:	May 25, 1906	**Terminate as Abandoned**

41M 25167-00

Priority Date:	September 17, 1904	**Terminate as Abandoned**

---

410 25168-00 (Gansman Coulee)

Priority Date:	September 16, 1913	
Acres Irrigated:	~~537.00 acres~~	**454.00 acres**
		The legal descriptions for the place of use are corrected as necessary on the attached water right claim abstract.
Issue Remarks:		**Remove all issue remarks**

All remaining elements of the claim are correct as they appear in the Temporary Preliminary Decree for this Basin.

41M 25169-00

Priority Date:	January 14,1902	**Terminate as Abandoned**

41M 25170-00

Priority Date:	September 19, 1895	

Flow Rate: ~~18.60 cfs~~ **7.25 cfs**

Acres Irrigated: ~~491.00 acres~~ **454.00 acres**

The legal descriptions for the place of use are corrected as necessary on the attached water right claim abstract.

Place of Use, Parcels 10 & 11: ~~T27N~~ **T26N**

Issue Remarks: **Remove all issue remarks**

Infonnation Remarks:

THE FOLLOWING WATER RIGHTS SHARE THE SAME POINT OF DIVERSION. THE COMBINED FLOW RATE FOR THESE RIGHTS CANNOT EXCEED 36.32 CFS. 25170-00 30052591 121495-00 121496-00 121497-00 30052592

THE FOLLOWING WATER RIGHTS SHARE THE SAME POINT OF DIVERSION. THE COMBINED FLOW RATE FOR THESE RIGHTS CANNOT EXCEED 7.60 CFS. 25170-00 121495-00 121496-00 121497-00

All remaining elements of the claim are correct as they appear in the Temporary Preliminary Decree for this Basin.

Implied Claim 41M 30052591

Priority Date: **December 31,1931**

Type Of Right: **Use**

Flow Rate: **29.07 cfs**

Infonnation Remarks:

THE FOLLOWING WATER RIGHTS SHARE THE SAME POINT OF DIVERSION. THE COMBINED FLOW RATE FOR THESE RIGHTS CANNOT EXCEED 36.32 CFS. 25170-00 30052591 121495-00 121496-00 121497-00 30052592

All remaining elements of this implied claim are identical to parent claim 410 25170-00 as corrected by this report.

Case 410-38 (Duncan)

Based on the record before the Master and applicable law, the following changes should applied to claims in case 410-38.

41M 121495-00

Priority Date:		January 14,1902
Flow Rate:	~~18.25 cfs~~	**4.50 cfs**
Acres Irrigated:	~~482.00 acres~~	**436.00 acres**

The legal descriptions for the place of use are corrected as necessary on the attached water right claim abstract.

Issue Remarks: **Remove all issue remarks**

Information Remarks:

THE FOLLOWING WATER RIGHTS SHARE THE SAME POINT OF DIVERSION. THE COMBINED FLOW RATE FOR THESE RIGHTS CANNOT EXCEED 36.32 CFS. 25170-00 30052591 121495-00 121496-00 121497-00 30052592

THE FOLLOWING WATER RIGHTS SHARE THE SAME POINT OF DIVERSION. THE COMBINED FLOW RATE FOR THESE RIGHTS CANNOT EXCEED 7.60 CFS. 25170-00 121495-00 121496-00 121497-00

All remaining elements of the claim are correct as they appear in the Temporary Preliminary Decree for this Basin.

41M 121496-00

Priority Date:		April 8, 1913
Type Of Right:		**Use**
Flow Rate:	~~10.00 cfs~~	**3.10 cfs**
Acres Irrigated:	~~482.00 acres~~	**436.00 acres**

The legal descriptions for the place of use are corrected as necessary on the attached water right claim abstract.

Issue Remarks: **Remove all issue remarks**

Information Remarks:

THE FOLLOWING WATER RIGHTS SHARE THE SAME POINT OF DIVERSION. THE COMBINED FLOW RATE FOR THESE RIGHTS CANNOT EXCEED 36.32 CFS. 25170-00 30052591 121495-00 121496-00 121497-00 30052592

THE FOLLOWING WATER RIGHTS SHARE THE SAME POINT OF DIVERSION. THE COMBINED FLOW RATE FOR THESE RIGHTS CANNOT EXCEED 7.60 CFS. 25170-00 121495-00 121496-00 121497-00

All remaining elements of the claim are correct as they appear in the Temporary Preliminary Decree for this Basin.

41M 121497-00

Priority Date: September 19, 1895

Flow Rate: ~~18.25 cfs~~ **157.10 gpm (0.35 cfs)**

Acres Irrigated: ~~482.00 acres~~ **436.00 acres**

The legal descriptions for the place of use are corrected as necessary on the attached water right claim abstract.

Issue Remarks: **Remove all issue remarks**

Information Remarks:

THE FOLLOWING WATER RIGHTS SHARE THE SAME POINT OF DIVERSION. THE COMBINED FLOW RATE FOR THESE RIGHTS CANNOT EXCEED 36.32 CFS. 25170-00 30052591 121495-00 121496-00 121497-00 30052592

THE FOLLOWING WATER RIGHTS SHARE THE SAME POINT OF DIVERSION. THE COMBINED FLOW RATE FOR THESE RIGHTS CANNOT EXCEED 7.60 CFS. 25170-00 121495-00 121496-00 121497-00

All remaining elements of the claim are correct as they appear in the Temporary Preliminary Decree for this Basin.

Implied Claim 41M 30052592

Priority Date: **December 31,1931**

Type Of Right: **Use**

Flow Rate: **28.37 cfs**

Information Remarks:

THE FOLLOWING WATER RIGHTS SHARE THE SAME POINT OF DIVERSION. THE COMBINED FLOW RATE FOR THESE RIGHTS CANNOT EXCEED 36.32 CFS. 25170-00 30052591 121495-00 121496-00 121497-00 30052592

All remaining elements of this implied claim are identical to parent claims 410 121495-00,410 121496-00, and 410 121497-00 as corrected by this report.

A Post Decree Abstract of Water Right Claim for each claim addressed in this report is attached to confirm that the above changes have been made in the state's centralized water right record system.

DATED this 14th day of March 2012.

Douglas Ritter
Senior Water Master

CER[illegible]E OF SER CE

I, Carol A. Bertke, Deputy Clerk of Court of the Montana Water Court, hereby certify that a true and correct copy of the above **NOTICE OF FILING OF MASTER'S REPORT AND MASTER'S REPORT** was duly served upon the persons listed below by depositing the same, postage prepaid, in the United States mail.

Gregory W. Duncan
Attorney-at-Law
2687 Airport Rd, Ste A
Helena, MT 59601

John E. Bloomquist
Attorney-at-Law
P.O. Box 1185
Helena, MT 59624

Holly Jo Franz
Attorney-at-Law
PO Box 1155
Helena, MT 59624-1155

Havre Regional Office, DNRC
210 Sixth Ave.
PO Box 1828
Havre, MT 59501-1828

DATED this 14th day of March ,2012.

Carol A Bertke

Carol A. Bertke
Deputy Clerk of Court

Manning's Equation Calculator / Software	The open channel flow software website

LMNO Engineering Home Pane Manning n values Unit Conversions Trouble printing?
More calculations: Design of Rectangular Channels Design of Trapezoidal Channels
Circular Culverts using Manning Equation Culvert Design using Inlet and Outlet Control
Q=VA simple flowrate calculator

$$Q = VA \qquad V = \frac{k}{n}\left(\frac{A}{P}\right)^{2/3} S^{1/2}$$

Select units:

- (•) Use feet and seconds units
- ( ) Use meters and seconds units

Select Calculation:

- (•) Velocity (V) and Discharge (Q)
- ( ) Channel Slope (S) from V etc.
- ( ) Channel Slope (S) from Q etc.
- ( ) Manning Coefficient (n) from V etc.
- ( ) Manning Coefficient (n) from Q etc.

k = 1.49, for **unit** conversion

Area, A (ft²): 1.83

Wetted Perimeter, P (A): 3.83

Channel Slope, S (ft/ft): .003

Manning n: 0.012

Velocity, V (ft/s): 4.156558146153611

Discharge, Q (ft³/s, i.e. cfs): 7.606501407460925

Click to Calculate

The Manning Equation is the most commonly used equation to analyze open channel flows. It is a semi-empirical equation for simulating water flows in channels and culverts where the water is open to the atmosphere, i.e. not flowing under pressure, and was first presented in 1889 by Robert Manning. The channel can be any shape - circular, rectangular, triangular, etc. The units in the Manning equation appear to be inconsistent; however, the value k has hidden units in it to make the equation consistent. The Manning Equation was developed for uniform steady state flow (see Discussion and References for Open Channel Flow). S is the slope of the energy grade line and $S=h_f/L$ where h_f is energy (head) loss and L is the length of the channel or reach. For uniform steady flows, the energy grade line = the slope of the water surface = the slope of the bottom of the channel.

The product A/P is also'known as the hydraulic radius, R_h.

LMNO Engineering, Research, and Software, Ltd.
7860 Angel Ridge Rd. Athens, Ohio 45701 USA Phone and fax: (740) 592-1890
LMNO@LMNOeng.com http://www.LMNOeng.com

• Structural

- Allowable Bearing Capacity
- Simple Beam - Uniform Load
- Simple Beam - Triangular Load
- Simple Beam - Load Increasing to Center
- Simple Beam - Concentrated Load
- Plastic Section Modulus
- Welded Wire Fabric
- Reinforcing Steel

$Q = a \times 1.486/n \times R^{2/3} \times S^{1/2}$					
Input Data:			**Results:**		
Area =	1.83	ft²	Hydraulic Radius =	3.83	ft
Mannings 'n' =	0.012		Flow Rate =	7.59	cfs
Wetted Perimeter =	3.83	ft	Velocity =	4.15	ft/s
Slope =	0.003	ft/ft			

MANNING'S FORMULA

$Q = A * 1.486/n * R^{2/3} * S^{1/2}$

- Q = Discharge (cu. ft./sec.)
- A = Cross-sectional Area of Flow (sq. ft.)
- n = Coefficient of Roughness
- R = Hydraulic Radius (ft.)
- S = Slope of Pipe (ft./ft.)

Hydraulic Radius

$R = A / P$

- R = Hydraulic Radius (ft.)
- **A** = Cross-sectional Area of Flow (sq. ft.)
- P = Wetted perimeter (ft.)

Material	Manning's n
Metals	
Brass	0.011
Cast Iron	0.013
Smooth Steel	0.012
Corrugated Metal	0.022
Non-Metals	

Manning's Equation Calculator / Software	The open channel flow software website

LMNO Engineering Home Page Manning n values Unit Conversions Trouble printing;?
More calculations: Design of Rectangular Channels Design of Trapezoidal Channels
Circular Culverts using; Manning Equation Culvert Design using Inlet and Outlet Control
Q=VA simple flowrate calculator

$$Q = VA \qquad V = \frac{k}{n}\left(\frac{A}{P}\right)^{2/3} S^{1/2}$$

Select units:		Click to Calculate
Use feet and seconds units	**k** = 1.49, for unit conversion	
Use meters and seconds units	Area, A (ft²):	6.0
Select Calculation:	Wetted Perimeter, P (A):	7.0
Velocity (V) and Discharge (Q)	Channel Slope, S (ft/ft):	.003
Channel Slope (S) from V etc.	Manning n:	0.012
Channel Slope (S) from Q etc.	Velocity, V (ft/s):	6.136693837019611
Manning Coefficient (n) from V etc.	Discharge, Q (ft³/s, i.e. cfs):	36.82016302211767
Manning Coefficient (n) from Q etc.	© 1998 LMNO Engineering, Research,	and Software, Ltd.

The Manning Equation is the most commonly used equation to analyze open channel flows. It is a semi-empirical equation for simulating water flows in channels and culverts where the water is open to the atmosphere, i.e. not flowing under pressure, and was first presented in 1889 by Robert Manning. The channel can be any shape - circular, rectangular, triangular, etc. The units in the Manning equation appear to be inconsistent; however, the value k has hidden units in it to make the equation consistent. The Manning Equation was developed for uniform steady state flow (see Discussion and References for Open Channel Flow). S is the slope of the energy grade line and $S=h_f/L$ where h_f is energy (head) loss and L is the length of the channel or reach. For uniform steady flows, the energy grade line = the slope of the water surface = the slope of the bottom of the channel.

The product A/P is also known as the hydraulic radius, R_h.

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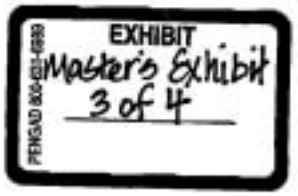

• Structural

- Allowable Bearing Capacity
- Simple Beam - Uniform Load
- Simple Beam - Triangular Load
- Simple Beam - Load Increasing to Center
- Simple Beam - Concentrated Load
- Plastic Section Modulus
- Welded Wire Fabric
- Reinforcing Steel

$Q = a \times 1.486/n \times R^{2/3} \times S^{1/2}$

Input Data:			**Results:**		
Area =	**6.0**	ft^2	Hydraulic Radius =	7.0	ft
Mannings 'n' =	0.012		Flow Rate =	36.72	cfs
Wetted Perimeter =	7.0	ft	Velocity =	6.12	ft/s
Slope =	0.003	ft/ft			

MANNING'S FORMULA

$Q = A * 1.486/n * R^{2/3} * S^{1/2}$

- Q = Discharge (cu. ft./sec.)
- A = Cross-sectional Area of Flow (sq. ft.)
- n = Coefficient of Roughness
- R = Hydraulic Radius (ft.)
- S = Slope of Pipe (ft./ft.)

Hydraulic Radius

$R = A / P$

- R = Hydraulic Radius (ft.)
- A = Cross-sectional Area of Flow (sq. ft.)
- P = Wetted perimeter (ft.)

Material	Manning's n
Metals	
Brass	0.011
Cast Iron	0.013
Smooth Steel	0.012
Corrugated Metal	0.022
Non-Metals