



BROCKWAY
ENGINEERING
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Hydraulics

Hydrology

Water Resources

February 25, 2008

Mr. Kelly Christensen
Idaho Department of Water Resources
1341 Fillmore Street, Suite 200
Twin Falls, ID 83301

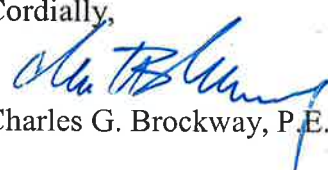
Re: Harry Rinker – Rock Creek water rights
Project No. 128-16-1999

Dear Kelly:

I am enclosing two (2) copies of an irrigation water requirements analysis (excess flow analysis) for Mr. Rinker's water rights on Rock Creek in Blaine County. This analysis is being submitted in support of the objections filed against the IDWR recommendations, which allowed only 0.02 cfs per acre. The irrigated lands were segregated into three areas as per the recommended water right structure, and a per-acre total diversion requirement (on farm plus seepage) was calculated utilizing procedures accepted by IDWR. This per-acre total was then applied to the acres within each of the areas, as calculated by our office. The final diversion requirement will depend on the acreage ultimately agreed upon.

Please do not hesitate to call if you have any questions.

Cordially,


Charles G. Brockway, P.E.

CHARLES E.
BROCKWAY,
PH.D., P.E.

CHARLES G.
BROCKWAY,
PH.D., P.E.

Enc. Report (2 copies)
Cc: Harry Rinker (w/ 1 copy of report)
Rob Williams (w/ 1 copy of report)

2016 NORTH
WASHINGTON
STREET • SUITE 4

TWIN FALLS,
IDAHO 83301

208•736•8543

FAX: 736•8506

Project No. 128-16-1999

Irrigation Water Requirements Analysis for Water Rights on Rock Creek, Blaine County, Idaho

Prepared for Harry S. Rinker

February 25, 2008

For information concerning this report, contact
Charles G. Brockway, Ph.D., P.E.



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Irrigation Water Requirements Analysis for Water Rights on Rock Creek, Blaine County, Idaho

C. G. Brockway, P.E.
February 25, 2008

General Methodology

This report presents a determination of water requirements for gravity-irrigated lands in the Rock Creek drainage in Blaine County, Idaho. The lands are owned by Harry S. Rinker, or entities controlled by Mr. Rinker, and are covered by water rights 37-1150, 37-1151B, 37-1212, 37-1151D, 37-627. This "excess flow analysis" utilized standard procedures outlined in Hubble¹ and IDWR². Brockway Engineering in conjunction with C. W. Robison, P.E. of the University of Idaho developed a computer model to implement these procedures. This model has been used for numerous analyses over the past 10 years, which have been accepted by IDWR.

Three separate evaluations were performed to correspond to the water right groupings as recommended by IDWR. These include the south area (water right 37-1150), the north area (water rights 37-1151D and 37-627), and the small middle area (water rights 37-1151B and 37-1212).

Type of Irrigation

Based on a review of aerial photos from 1957 to the present, irrigation configuration and methods have changed little over the past 50+ years on the property. Irrigation generally occurs via wild flooding, with some degree of land grading and corregrations implemented to direct the flow. On some fields, however, it appears no effort at topographic modification has been made. No sprinkler systems exist or have existed on the property.

Field Delineation

The property was divided into fields based on historical and current irrigation practices. Aerial photo years consulted included 1957, 2004, and 2006. In addition, two site inspections have been made to the property to identify irrigation practices. In most cases, the field lines were relatively evident on the photos. Field delineations are shown on the attached aerial maps, and pertinent field information is provided in Table 1.

¹ Hubble Engineering (1991). Guidelines for the Evaluation of Irrigation Diversion Rates.

² IDWR (1996). Report Regarding Evaluation of Irrigation Diversion Rates. Report to the SRBA Court, August 15, 1996.

Irrigation Run

Because of the narrow width of the irrigated valley, irrigation generally takes place via high ditches on either side of the valley, with water being directed toward Rock Creek. In some instances, however, the aerial photos indicate a flow path parallel to the creek, either from the main ditches or lateral ditches running perpendicular to the valley. The flow directions are shown on the aerial maps. Average run length was calculated by measuring the length of run from the ditch to the end of the field at several points and taking the average (Table 1).

Slope

Slope of each field was determined from USGS DEM data superimposed on the aerial photo. The contours are shown on the attached aerial maps. Where the slope varied significantly across a field, average slope was calculated by examining three representative locations. Slopes ranged from 0.009 ft/ft to 0.05 ft/ft (Table 1).

Soil Characteristics

The published soil data from the NRCS was utilized. Soils on the site are generally loam, with gravel layers below 2 to 3 feet, and bedrock within some units at approximately 36 inches. Soil texture ranges from loam to gravelly coarse sand, but the top 2 feet is generally loam, silt loam, or clay loam. Available water capacity was calculated for each foot of soil based on the NRCS physical soil property data tables (see Appendix A).

Evapotranspiration Data

Crop consumptive use data was taken from Allen & Robison³. The Picabo NWS station was selected due to its relatively close proximity to the site and adequate record length. The Magic Dam NWS station is closer to the site but has only 8 years of record. Actual crop evapotranspiration (ET) was used rather than precipitation deficit, or "irrigation requirement." For peak diversion purposes, ET is most appropriate since no precipitation can be counted on to occur during the few days having the peak ET.

The "20% Exceedance" value for the 7-day moving average reported by Allen & Robison was used for this analysis without further adjustment. The 7-day average was chosen since one week is a typical return time for pasture irrigation sets. This statistic was calculated by finding the highest 7-day average ET in each month for each year of record, and determining the 20% exceedance level for each month using a distribution-free probability density function. This value is appropriate to use for irrigation system

³ Allen, Richard G. and Clarence W. Robison, 2006 (Revised 2007). Evapotranspiration and Consumptive Irrigation Water Requirements for Idaho, Research Technical Completion Report, Kimberly Research and Extension Center, University of Idaho, Moscow, ID

design or similar studies, according to the Allen & Robison report, and takes the place of the previous approach in which the monthly average was increased according to the standard normal deviate for an 80% probability level, with the result being further increased by a peak daily : peak monthly ratio based on water application depth.

The monthly ET values used for the analysis are provided in Table 2.

Cropping and Allowable Depletion

The only crop which has likely been historically been grown to any appreciable extent on the property is pasture. For this crop, an allowable soil moisture depletion of 50% was assumed. The Allen & Robison consumptive use data includes two types of pasture: high management and low management. The high management condition is defined as "pasture having high management and rotated grazing." The low management condition is defined as "pasture having relatively low management and with less vigorous growth and with sustained lower grazing height. In the case of Rock Creek irrigation, it appears that the pasture has not been managed to the highest degree, likely due to short water supply in some years and the generally difficulty of irrigation due to the narrowness of the valley and variable land topography. However, pasture yields are reasonably high and the land has been actively used for beef cattle grazing. Since the actual conditions appear to lie between the two Allen & Robison categories, a mean value between the two was calculated and used for the analysis (Table 2).

Set Time

Due to the non-intensive management of the pasture irrigation, set times are assumed to be 24 hours or greater (shorter set times are unlikely to have been used on this land even for very short-run fields). The set time along with the furrow flow was varied in order to ensure that the model predicts water reaching the end of the field and adequately replenishing the soil moisture deficit. In rare instances on fields with long runs, the set time needed to be increased to 48 or 72 hours. The longest set time was 96 hours on Field I.

Furrow Spacing and Flow

Although the irrigation practice is classified as wild flooding, a furrow spacing of 2.5 feet was used, per IDWR guidelines. Modeling the irrigation as a furrow method will tend to overestimate the irrigation efficiency. Furrow flow was varied in conjunction with the set time to ensure adequate water application. A minimum furrow flow of 3 gpm was used. Most fields required either 3 gpm or 4 gpm, while a few fields required as much as 8 or 10 gpm. Generally, furrow flow was increased above 3 gpm for fields with run lengths greater than about 600 feet. Manning roughness coefficient for the furrows was selected as 0.10.

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Set time limited by
decrease to 2 days
Per owner.
3 Septems

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Ditch Identification

Water is diverted from Rock Creek, Guy Creek, and Smith Creek into a network of open ditches (see attached aerial maps). The locations of the diversions and ditches were determined from site inspections and inspection of the historic and current aerial photos (it should be noted that some of IDWR's recommended points of diversion do not correspond to actual diversion points). Ditch lengths were calculated by GIS methods and are shown in Table 2.

Ditch Seepage

Ditches are unlined earthen conveyances dug in the native soil. The Worstell method was used to calculate seepage losses, using a seepage coefficient of 1.5 ft/day, which is applicable to loamy to sandy soils (IDWR recommends using a value on the upper end of any potential range of values). Based on visual inspection of the ditches, an average width of 4 feet and a cross-sectional area of 2.0 feet (corresponding to a flow depth of 0.5 feet) was used for all ditches (Table 3).

Results

As noted above, three excess flow analyses were performed for the three distinct water right groupings recommended by IDWR. Calculated on-farm water requirements, seepage losses, and total project requirements are reported for each grouping in the following table. Complete printouts from the excess flow model are provided in Appendices C, D, and E. Acreages shown in the table were calculated by Brockway Engineering and differ from IDWR's recommended acreages. The acreage which is ultimately agreed upon will dictate the diversion requirement in cfs based on the per-acre on-farm requirements plus the seepage losses.

Crop: Pasture – Mean

Area	Acres (Brockway)	On-Farm Requirement		Seepage Losses (cfs)	Total Diversion Reqm't (cfs)
		(in/ac)	(cfs)		
South	272*	2.456	13.36	2.15	15.51
North	361	2.093	15.11	3.47	18.58
Middle	43	2.514	2.16	0.50	2.66
TOTAL	676	--	30.63	6.12	36.75 cfs

*Includes disallowed claim 37-4192 covering 32 acres in extreme southern portion

Physical Water Supply Availability

The sum of the three calculated peak diversion rates for the low-management scenario 36.8 cfs. This is the total peak requirement to be supplied by the stream, which will

acreage does not include total

*table 1 total = 636.7 ac
diversion = 584 ac (92-00)*

typically be required in June or July. The ability of Rock Creek and its tributaries to have physically supplied this rate historically was examined.

Systematic discharge records are nonexistent since no stream gauges have ever been in place on Rock Creek. The USGS has historically made miscellaneous spot measurements in waterways around Idaho, but none have been made on Rock Creek or similar nearby tributaries in the period of interest (June-July). Therefore, the most reasonable approach is to utilize statistical methods to estimate streamflow based on observed records in similar basins. The USGS has developed such regression equations to estimate monthly flow statistics for ungauged streams in Idaho⁴. Using this approach, the estimated monthly flows in July with exceedance probabilities of 20%, 50%, and 80% for Rock Creek at a point near the lower end of the irrigated lands are as follows (see Appendix B for more detail):

Q20 = 23.7 cfs

Q50 = 9.2 cfs

Q80 = 2.3 cfs

The USGS procedure does not include estimates of flows with lower exceedance probabilities such as Q10 or Q5 due to the high potential error. Plotting the above three calculated values and extrapolating with a smooth curve (see Figure 2) suggests that Q10 may be approximately 31 cfs, and Q5 may be approximately 34 cfs.

Although uncertainties are inherent to the USGS regression procedure, it is the only means available at this time to estimate physical water supply, and it does suggest that the calculated duty of water of 36.8 cfs is not unreasonable, since there have likely been years when this amount was available in July.

⁴ Hortness, J. E., and Berenbrock, Charles, 2001, Estimating Monthly and Annual Streamflow Statistics at Ungauged Sites in Idaho: U.S. Geological Survey Water Resources-Investigations Report 01-4093, 36 p.

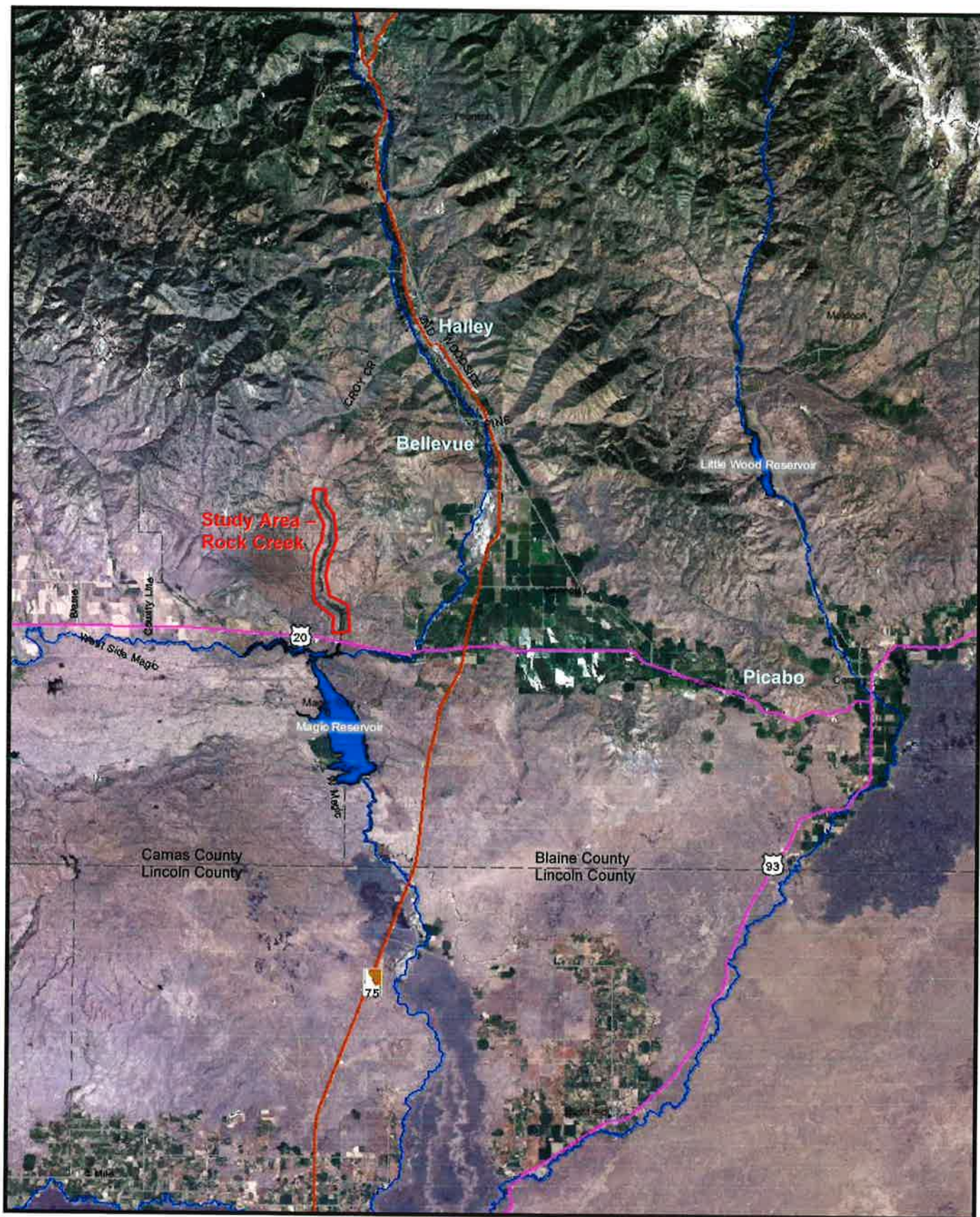


Figure 1. Vicinity map showing location of Rock Creek study area

Figure 2. July Monthly Flow Statistics Estimated with USGS (2001) Procedure

Rock Creek 0.5 miles above Highway 20, Blaine County, Idaho
C. G. Brockway 2/17/08

	Ex Prob	CFS
Q20	0.2	23.7
Q50	0.5	9.17
Q80	0.8	2.31

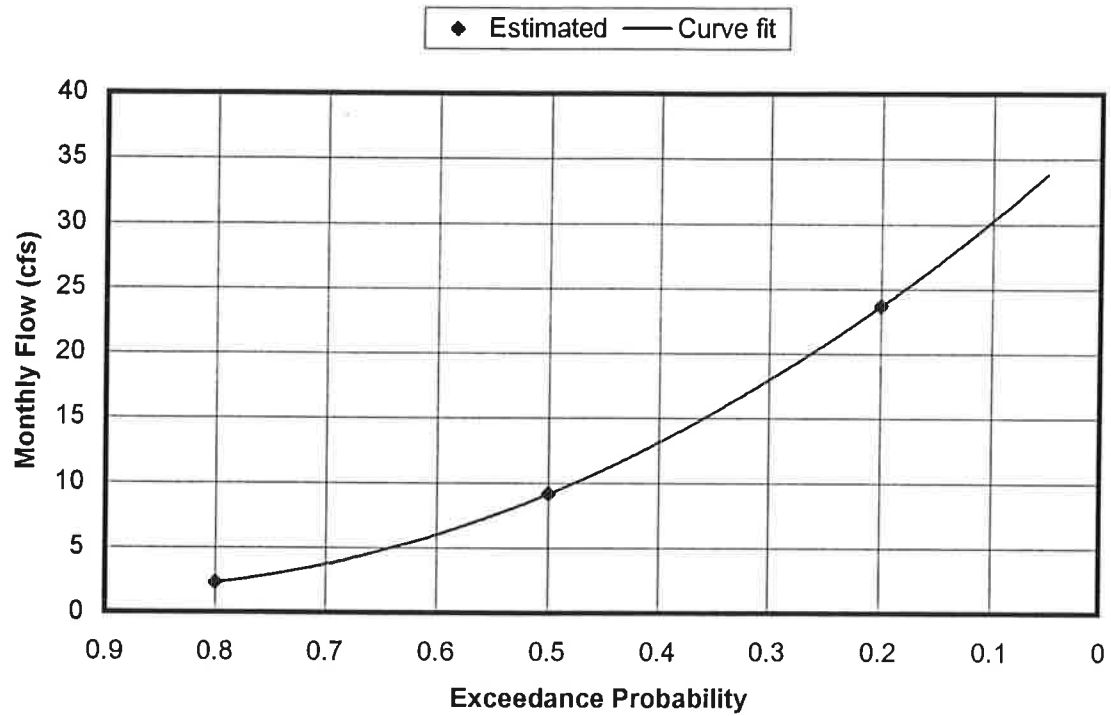


Table 1. Field run lengths and slopes.

RINKER - ROCK CREEK EXCESS FLOW ANALYSIS

BROCKWAY ENGINEERING, PLLC.

ALR - FEB. 11, 2008

Field	Acres	Field ID	Avg Run Length (ft)	Avg Slope in Direction of Run	
A	5.57	A	410	0.036	
B	13.50	B	330	0.03	
C	9.04	C	335	0.04	
D	7.74	D	230	0.017	
E	12.67	E	410	0.05	
F	37.31	F	765	0.017	Yellow = Lower area
G	33.39	G	954	0.025	
H	24.41	H	400	0.034	
I	26.50	I	2580	0.0094	
J	11.05	J	173	0.06	
K	21.80	K	1950	0.0091	
L	14.18	L	1280	0.011	
M	40.71	M	698	0.029	
N	26.50	N	1760	0.02	
O	26.97	O	1141	0.024	
P	18.94	P	1830	0.012	
Q	27.19	Q	550	0.036	
R	16.30	R	365	0.02	
S	16.89	S	838	0.013	
T	5.17	T	305	0.013	Blue = Upper area
U	37.81	U	645	0.028	
V	29.44	V	432	0.025	
W	25.49	W	577	0.0099	
X	9.04	X	310	0.029	
Y	30.58	Y	300	0.021	
Z	46.88	Z	592	0.028	
AA	40.40	AA	370	0.046	Pink = Small middle area
AB	22.29	AB	4055	0.008	including Guy Creek

Note: Acres are for calculation purposes and do not sum to total on water right recommendations or objections.

my #2249
Total = 257.87
mine 286
total 317.2
62.69
includes ac in Sec 35 SE NW
includes
636.7
584

Possible 300 ac
37-22264

Table 2. Monthly Crop Evapotranspiration

Allen & Robison (Revised 2007), 20% Exceedance Value
 "Pasture - Mean" used for the water requirements analysis

Month	Crop ET (mm/day)		
	Pasture - High	Pasture - Low	Pasture - Mean
March	1.03	1.03	1.03
April	3.10	2.52	2.81
May	6.59	5.12	5.86
June	7.63	6.32	6.98
July	7.32	6.30	6.81
August	6.87	5.76	6.32
September	5.10	4.56	4.83
October	3.17	2.95	3.06
Total Seasonal	883	722	803

Table 3. Ditch information.

RINKER - ROCK CREEK EXCESS FLOW ANALYSIS

DITCH SEGMENT LENGTHS

BROCKWAY ENGINEERING, PLLC.

ALR - FEB. 12, 2008

Upstream						Diversion
Ditch ID	Ditch ID	Length - FT	Length - MI	Width	Xsec area	Right No.
1	0	1365	0.26	4.00	2.00	37-1150
2	1	1792	0.34	4.00	2.00	
3	1	1098	0.21	4.00	2.00	
4	3	1450	0.27	4.00	2.00	
5	4	3947	0.75	4.00	2.00	
6	5	889	0.17	4.00	2.00	
7	5	2828	0.54	4.00	2.00	
8	7	721	0.14	4.00	2.00	
9	7	3440	0.65	4.00	2.00	
10	0	560	0.11	4.00	2.00	37-1150
11	10	1994	0.38	4.00	2.00	
12	11	895	0.17	4.00	2.00	
13	11	2335	0.44	4.00	2.00	
14	13	2709	0.51	4.00	2.00	
15	14	2375	0.45	4.00	2.00	
16	0	1167	0.22	4.00	2.00	37-1151D
17	16	3114	0.59	4.00	2.00	
18	0	1495	0.28	4.00	2.00	
19	18	1387	0.26	4.00	2.00	37-1151D
20	0	753	0.14	4.00	2.00	
21	20	2184	0.41	4.00	2.00	
22	21	2571	0.49	4.00	2.00	37-1151D
23	22	2297	0.44	4.00	2.00	
24	0	2879	0.55	4.00	2.00	
25	0	2579	0.49	4.00	2.00	37-1151D
26	25	5439	1.03	4.00	2.00	
27	0	585	0.11	4.00	2.00	
28	27	4737	0.90	4.00	2.00	37-1151D
29	0	1044	0.20	4.00	2.00	
30	29	2345	0.44	4.00	2.00	
31	29	2220	0.42	4.00	2.00	37-1151B, 37-1212
32	31	3577	0.68	4.00	2.00	
33	0	916	0.17	4.00	2.00	
34	33	4393	0.83	4.00	2.00	37-1151B, 37-1212
35	0	4184	0.79	4.00	2.00	

Yellow = Lower area

Blue = Upper area

Pink = Small middle area
including Guy Creek

Appendix A

Soil Information

RINKER - ROCK CREEK EXCESS FLOW
Soil AWC from SCS tables

Soil No. 20 Bruneel Loam

Depth From	Depth To	AWC (in/in)	Cumulative AWC (in)	
0	14	0.17	0-1'	2.04
14	23	0.145	0-2'	3.72
23	27	0.035	0-3'	4.14
27	61	0.035	0-4'	4.56
			0-5'	4.98

Soil No. 72 Marshdale-Bruneel Loam
60% Marshdale, 40% Bruneel

Depth From	Depth To	AWC (in/in)	Cumulative AWC (in)	
0	14	0.176	0-1'	2.11
14	23	0.166	0-2'	4.08
23	27	0.122	0-3'	5.45
27	50	0.11	0-4'	6.77
50	61	0.041	0-5'	7.40

Soil No. 82 Moonstone-Earcree Association
60% Moonstone, 40% Earcree

Depth From	Depth To	AWC (in/in)	Cumulative AWC (in)	
0	26	0.103	0-1'	1.24
26	34	0.109	0-2'	2.47
34	37	0.046	0-3'	3.64
37	52	0.085	0-4'	4.66
52	70	0.06	0-5'	5.48

Soil No. 88 Peaveywell-Simonton
60% Peaveywell, 40% Simonton

Depth From	Depth To	AWC (in/in)	Cumulative AWC (in)	
0	12	0.164	0-1'	1.97
12	22	0.178	0-2'	4.08
22	30	0.166	0-3'	5.50
30	44	0.07	0-4'	6.34
44	61	0.07	0-5'	7.18

Soil No. 102 Simonton Loam

Depth From	Depth To	AWC (in/in)	Cumulative AWC (in)	
0	12	0.17	0-1'	2.04
12	52	0.075	0-2'	2.94
52	64	0.095	0-3'	3.84
			0-4'	4.74
			0-5'	5.80

Soil No. 111 Winu-Gaib
60% Winu, 40% Gaib

Depth From	Depth To	AWC (in/in)	Cumulative AWC (in)	
0	5	0.078	0-1'	1.13
5	13	0.106	0-2'	1.96
13	35	0.069	0-3'	2.72
35	60	0	0-4'	2.72
			0-5'	2.72

Report—Physical Soil Properties

Physical Soil Properties— Blaine County Area, Idaho														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	<i>In</i>	<i>Pct</i>	<i>Pct</i>	<i>Pct</i>	<i>g/cc</i>	<i>micro m/sec</i>	<i>In/in</i>	<i>Pct</i>	<i>Pct</i>					
20—Bruneel loam, 0 to 2 percent slopes														
Bruneel	0-14	—	—	10-25	1.50-1.60	4.00-14.11	0.16-0.18	0.0-2.9	2.0-3.0	.28	.32	3	5	56
	14-23	—	—	10-18	1.45-1.60	4.00-14.11	0.11-0.18	0.0-2.9	1.0-2.0	.24	.28			
	23-27	—	—	0-5	1.40-1.60	141.14-141.14	0.02-0.05	0.0-2.9	0.0-0.5	.05	.20			
	27-61	—	—	0-5	1.40-1.60	141.14-141.14	0.02-0.05	0.0-2.9	0.0-0.5	.05	.20			
34—Earcree- Moonstone association, 30 to 60 percent slopes														
Earcree	0-37	—	—	10-18	1.40-1.50	14.11-42.34	0.10-0.13	0.0-2.9	3.0-6.0	.10	.15	5	5	56
	37-52	—	—	5-15	1.30-1.50	14.11-42.34	0.05-0.12	0.0-2.9	0.5-1.0	.10	.20			
	52-70	—	—	5-10	1.30-1.50	14.11-42.34	0.05-0.07	0.0-2.9	0.0-0.5	.10	.28			
Moonstone	0-26	—	—	10-15	1.45-1.50	14.11-42.34	0.07-0.12	0.0-2.9	1.0-3.0	.17	.28	3	5	56
	26-34	—	—	10-15	1.55-1.65	14.11-42.34	0.08-0.13	0.0-2.9	0.5-1.0	.10	.15			
	34-44	—	—	—	—	—	—	—	—					

Physical Soil Properties-- Blaine County Area, Idaho														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	<i>In</i>	<i>Pct</i>	<i>Pct</i>	<i>Pct</i>	<i>g/cc</i>	<i>micro m/sec</i>	<i>In/In</i>	<i>Pct</i>	<i>Pct</i>					
36—Elkcreek-Polecreek complex, 4 to 30 percent slopes														
Elkcreek	0-11	—	—	15-25	1.50-1.60	4.00-14.11	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	2	6	48
	11-28	—	—	20-35	1.40-1.50	1.41-4.23	0.12-0.17	3.0-5.9	0.5-1.0	.24	.28			
	28-34	—	—	15-25	1.50-1.60	4.00-14.11	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32			
	34-44	—	—	—	—	—	—	—	—					
Polecreek	0-4	—	—	20-26	1.30-1.35	4.00-14.11	0.08-0.11	0.0-2.9	2.0-3.0	.15	.43	1	8	0
	4-6	—	—	35-60	1.50-1.60	0.42-1.41	0.07-0.10	3.0-5.9	1.0-2.0	.10	.43			
	6-13	—	—	35-60	1.50-1.60	0.00-0.42	0.07-0.10	3.0-5.9	0.5-2.0	.05	.17			
	13-23	—	—	—	—	—	—	—	—					
72—Marshdale-Bruneel loams, 0 to 2 percent slopes														
Marshdale	0-27	—	—	18-27	1.30-1.45	4.00-14.11	0.16-0.20	3.0-5.9	5.0-10.0	.28	.28	4	5	56
	27-50	—	—	18-30	1.30-1.45	4.00-14.11	0.14-0.18	3.0-5.9	1.0-2.0	.28	.32			
	50-65	—	—	0-5	1.30-1.50	141.14-141.14	0.03-0.06	0.0-2.9	0.0-0.5	.10	.20			
Bruneel	0-14	—	—	10-25	1.50-1.60	4.00-14.11	0.16-0.18	0.0-2.9	2.0-3.0	.28	.32	3	5	56
	14-23	—	—	10-18	1.45-1.60	4.00-14.11	0.11-0.18	0.0-2.9	1.0-2.0	.24	.28			
	23-27	—	—	0-5	1.40-1.60	141.14-141.14	0.02-0.05	0.0-2.9	0.0-0.5	.05	.20			
	27-61	—	—	0-5	1.40-1.60	141.14-141.14	0.02-0.05	0.0-2.9	0.0-0.5	.05	.20			

Physical Soil Properties— Blaine County Area, Idaho														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	<i>In</i>	<i>Pct</i>	<i>Pct</i>	<i>Pct</i>	<i>g/cc</i>	<i>micro m/sec</i>	<i>In/In</i>	<i>Pct</i>	<i>Pct</i>					
82—Moonstone-Earcree association, 30 to 60 percent slopes														
Moonstone	0-26	—	—	10-15	1.45-1.50	14.11-42.34	0.07-0.12	0.0-2.9	1.0-3.0	.17	.28	3	5	56
	26-34	—	—	10-15	1.55-1.65	14.11-42.34	0.08-0.13	0.0-2.9	0.5-1.0	.10	.15			
	34-44	—	—	—	—	—	—	—	—					
Earcree	0-37	—	—	10-18	1.40-1.50	14.11-42.34	0.10-0.13	0.0-2.9	3.0-6.0	.10	.15	5	5	56
	37-52	—	—	5-15	1.30-1.50	14.11-42.34	0.05-0.12	0.0-2.9	0.5-1.0	.10	.20			
	52-70	—	—	5-10	1.30-1.50	14.11-42.34	0.05-0.07	0.0-2.9	0.0-0.5	.10	.28			
88—Peevywell-Simonton complex, 8 to 30 percent slopes														
Peevywell	0-12	—	—	15-20	1.25-1.45	4.00-14.11	0.14-0.18	0.0-2.9	1.0-3.0	.37	.43	2	5	56
	12-22	—	—	30-40	1.35-1.50	1.41-4.23	0.17-0.19	3.0-5.9	0.5-1.0	.32	.37			
	22-30	—	—	40-55	1.30-1.50	0.42-1.41	0.15-0.17	6.0-8.9	0.0-0.5	.24	.28			
	30-44	—	—	—	—	—	—	—	—					
	44-61	—	—	5-12	1.50-1.70	42.34-141.14	0.00-0.00	0.0-2.9	0.0-0.5	.10	.32			
Simonton	0-11	—	—	10-20	1.25-1.40	4.00-14.11	0.16-0.18	0.0-2.9	1.0-2.0	.28	.32	5	5	56
	11-61	—	—	18-32	1.35-1.55	1.41-4.23	0.14-0.21	3.0-5.9	0.5-1.0	.37	.43			

Physical Soil Properties— Blaine County Area, Idaho														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	micro m/sec	In/In	Pct	Pct					
95—Povey- Vitale association, 30 to 60 percent slopes														
Povey	0-14	—	—	10-20	1.20-1.40	4.00-14.11	0.07-0.13	0.0-2.9	2.0-3.0	.24	.37	3	6	48
	14-35	—	—	10-20	1.20-1.40	4.00-14.11	0.06-0.08	0.0-2.9	1.0-2.0	.15	.37			
	35-60	—	—	8-15	1.25-1.45	4.00-14.11	0.03-0.05	0.0-2.9	0.5-2.0	.15	.37			
	60-64	—	—	—	—	—	—	—	—					
Vitale	0-6	—	—	15-25	1.30-1.45	14.11-42.34	0.09-0.12	0.0-2.9	1.0-3.0	.20	.28	2	8	0
	6-15	—	—	28-35	1.40-1.50	1.41-4.23	0.05-0.07	3.0-5.9	1.0-3.0	.10	.37			
	15-23	—	—	18-25	1.40-1.55	4.00-14.11	0.05-0.07	0.0-2.9	0.0-1.0	.17	.37			
	23-33	—	—	—	—	—	—	—	—					
102—Simonton loam, 2 to 4 percent slopes														
Simonton	0-12	—	—	10-20	1.25-1.40	4.00-14.11	0.16-0.18	0.0-2.9	1.0-2.0	.28	.32	5	5	56
	12-52	—	—	18-32	1.35-1.55	1.41-4.23	0.14-0.21	3.0-5.9	0.5-1.0	.37	.43			
	52-64	—	—	5-10	1.45-1.65	14.11-42.34	0.06-0.13	0.0-2.9	0.0-0.5	.20	.24			

Physical Soil Properties— Blaine County Area, Idaho														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	micro m/sec	In/In	Pct	Pct					
104—Simonton-Bauscher complex, 4 to 15 percent slopes														
Simonton	0-11	—	—	10-20	1.25-1.40	4.00-14.11	0.16-0.18	0.0-2.9	1.0-2.0	.28	.32	5	5	56
	11-61	—	—	18-32	1.35-1.55	1.41-4.23	0.14-0.21	3.0-5.9	0.5-1.0	.37	.43			
Bauscher	0-14	—	—	12-20	1.35-1.40	4.00-14.11	0.16-0.18	0.0-2.9	2.0-5.0	.32	.37	4	5	56
	14-37	—	—	18-30	1.50-1.60	1.41-4.23	0.12-0.18	3.0-5.9	1.0-3.0	.28	.32			
	37-42	—	—	10-15	1.55-1.65	14.11-42.34	0.09-0.13	0.0-2.9	0.5-1.0	.17	.24			
	42-52	—	—	—	—	—	—	—	—					
109—Vitale-Povey association, 30 to 60 percent slopes														
Vitale	0-6	—	—	15-25	1.30-1.45	14.11-42.34	0.09-0.12	0.0-2.9	1.0-3.0	.20	.28	2	8	0
	6-15	—	—	28-35	1.40-1.50	1.41-4.23	0.05-0.07	3.0-5.9	1.0-3.0	.10	.37			
	15-23	—	—	18-25	1.40-1.55	4.00-14.11	0.05-0.07	0.0-2.9	0.0-1.0	.17	.37			
	23-33	—	—	—	—	—	—	—	—					
Povey	0-14	—	—	10-20	1.20-1.40	4.00-14.11	0.07-0.13	0.0-2.9	2.0-3.0	.24	.37	3	6	48
	14-35	—	—	10-20	1.20-1.40	4.00-14.11	0.06-0.08	0.0-2.9	1.0-2.0	.15	.37			
	35-60	—	—	8-15	1.25-1.45	4.00-14.11	0.03-0.05	0.0-2.9	0.5-2.0	.15	.37			
	60-64	—	—	—	—	—	—	—	—					

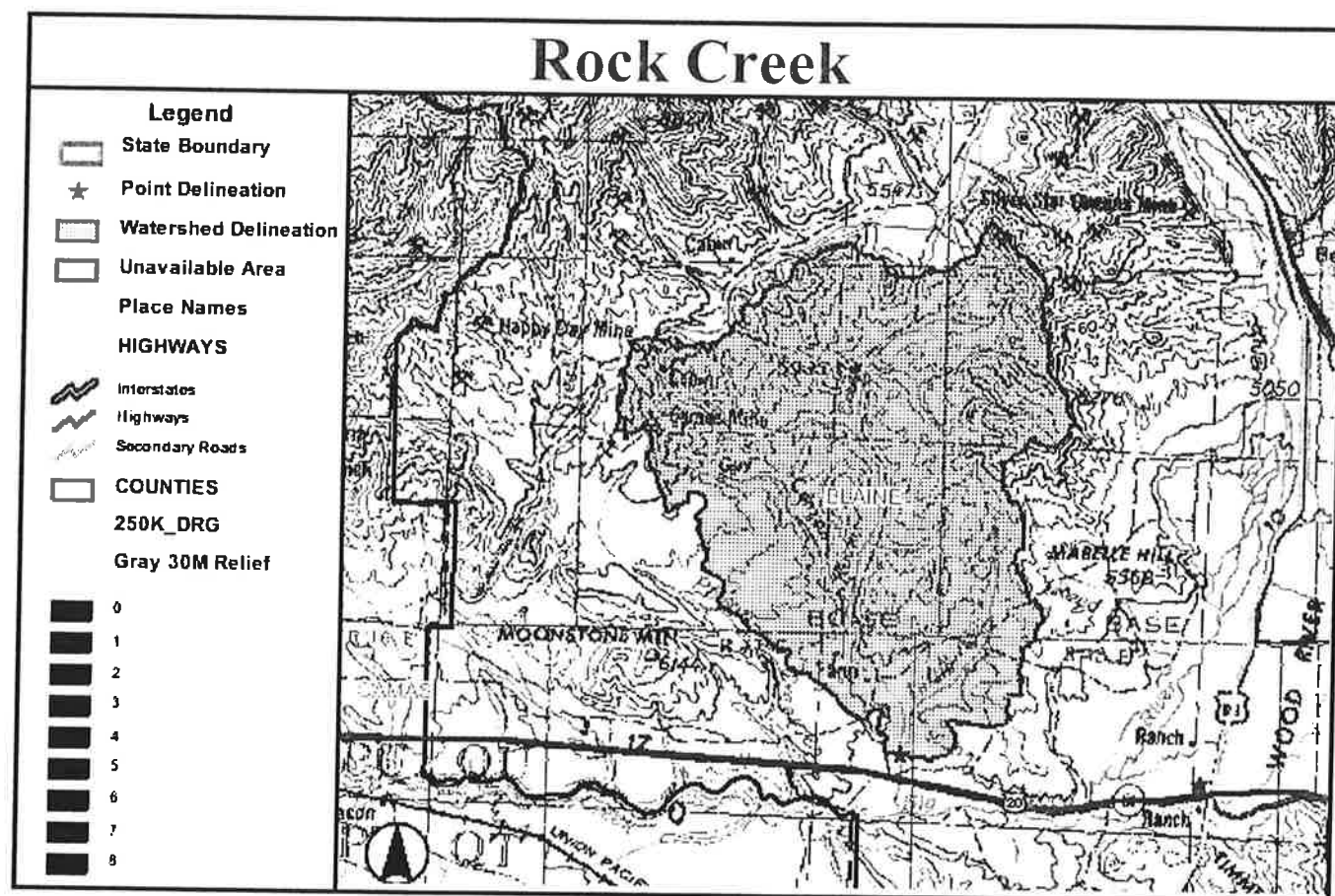
Physical Soil Properties— Blaine County Area, Idaho														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	<i>In</i>	<i>Pct</i>	<i>Pct</i>	<i>Pct</i>	<i>g/cc</i>	<i>micro m/sec</i>	<i>In/In</i>	<i>Pct</i>	<i>Pct</i>					
111—Winu-Gaib association, 30 to 60 percent slopes														
Winu	0-13	—	—	15-25	1.00-1.10	4.00-14.11	0.08-0.10	0.0-2.9	4.0-5.0	.28	.43	2	6	48
	13-35	—	—	20-30	1.10-1.20	1.41-4.23	0.10-0.13	3.0-5.9	1.0-2.0	.24	.49			
	35-45	—	—	—	—	0.00-0.07	—	—	—					
Gaib	0-5	—	—	15-25	1.40-1.50	4.00-14.11	0.05-0.07	0.0-2.9	1.0-3.0	.24	.37	1	8	0
	5-13	—	—	24-35	1.50-1.60	1.41-4.23	0.10-0.16	3.0-5.9	0.5-2.0	.20	.37			
	13-23	—	—	—	—	—	—	—	—					
112—Water														
Water	—	—	—	—	—	—	—	—	—					

Data Source Information

Soil Survey Area: Blaine County Area, Idaho
 Survey Area Data: Version 7, Jan 31, 2008

Appendix B

Basin Water Supply Calculation





StreamStats

StreamStats Ungaged Site Report

Date: Sun Feb 17 2008 20:59:02

Site Location: Idaho

Latitude (NAD83): 43.3402 (43 20 24)

Longitude (NAD83): -114.3813 (-114 22 52)

Drainage Area: 40.195 mi²

Peak Flow Basin Characteristics

100% Peak Flow Region 5 (40.20 mi²)

Parameter	Value	Regression Equation Valid Range	
		Min	Max
Drainage Area (square miles)	40.20	3.6	12228
Mean Annual Precipitation (inches)	15 (below min value 19.8)	19.8	49.73
North Facing Slopes Grt Than 30 Percent (percent)	5.3	2.5	32.9

Warning: Some parameters are outside the suggested range. Estimates will be extrapolations with unknown errors.

Low Flow Basin Characteristics

100% Low Flow Region 5 (40.20 mi²)

Parameter	Value	Regression Equation Valid Range	
		Min	Max
Drainage Area (square miles)	40.20	19.3	12228
Mean Basin Slope from 30m DEM (percent)	20.2	20.2	46.7
Slopes Greater Than 30 Percent (percent)	21.6 (below min value 24.7)	24.7	77.8
Percent Forest (percent)	0.052 (below min value 22.4)	22.4	88.7
Mean Basin Elevation (feet)	5510 (below min value 6171.1)	6171.1	8204

Warning: Some parameters are outside the suggested range. Estimates will be extrapolations with unknown errors.

Streamflow Statistics

Statistic	Flow (ft ³ /s)	Prediction Error (percent)	Equivalent years of record	90-Percent Prediction Interval	
				Minimum	Maximum
PK1_5	103				
PK2	134				
PK2_33	145				
PK5	214				
PK10	272				
PK25	346				
PK50	400				

PK100	464		
PK200	519		
PK500	595		

Streamflow Statistics

Statistic	Flow (ft ³ /s)	Estimation Error (percent)	Equivalent years of record	90-Percent Prediction Interval	
				Minimum	Maximum
Mean Annual Flow Statistics					
Qa	31.6				
January Flow-Duration Statistics					
Jan_Q20	81.8				
Jan_Q50	64.2				
Jan_Q80	78.6				
February Flow-Duration Statistics					
Feb_Q20	67.8				
Feb_Q50	61.3				
Feb_Q80	77.6				
March Flow-Duration Statistics					
Mar_Q20	135				
Mar_Q50	90.4				
Mar_Q80	146				
April Flow-Duration Statistics					
Apr_Q20	167				
Apr_Q50	88.9				
Apr_Q80	48.1				
May Flow-Duration Statistics					
May_Q20	980				
May_Q50	638				
May_Q80	409				
June Flow-Duration Statistics					
Jun_Q20	23.2				
Jun_Q50	11.4				
Jun_Q80	9.03				
July Flow-Duration Statistics					
Jul_Q20	23.7				
Jul_Q50	9.17				
Jul_Q80	2.3				
August Flow-Duration Statistics					
Aug_Q20	5.4				
Aug_Q50	2.27				
Aug_Q80	0.72				
September Flow-Duration Statistics					
Sep_Q20	7.18				

Sep_Q50	3.09			
Sep_Q80	0.67			
October Flow-Duration Statistics				
Oct_Q20	16.4			
Oct_Q50	6.68			
Oct_Q80	1.71			
November Flow-Duration Statistics				
Nov_Q20	27			
Nov_Q50	13.1			
Nov_Q80	3.1			
December Flow-Duration Statistics				
Dec_Q20	97.3			
Dec_Q50	72.2			
Dec_Q80	76.9			

Appendix C
Water Requirement Model Output
South Area

Irrigation Water Requirements Analysis

Version 1.00

2008-02-18 @ 13:35:02

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust

South Area: Water Right 37-1150

C.G. Brockway, Brockway Engineering

Crop Water Requirements Datafile: picabo20.cir

Probability Level for Analysis: 50.0

Number of Canal/Lateral Segments: 15

Number of Irrigation Methods: 13

Number of Soil Types: 5

Number of Crops: 1

Number of Analysis Periods: 8

CANAL/LATERAL INFORMATION

#	Name	Segment	Upstream Length miles	Width feet	F-Area sq-ft	Seepage Method
1	Ditch 14-15	2	.96	4.0	2.0	Worstell i= 1.50 ft/day
2	Ditch 13	4	.44	4.0	2.0	Worstell i= 1.50 ft/day
3	Ditch 12	4	.17	4.0	2.0	Worstell i= 1.50 ft/day
4	Ditch 11	5	.38	4.0	2.0	Worstell i= 1.50 ft/day
5	Ditch 10	15	.11	4.0	2.0	Worstell i= 1.50 ft/day
6	Ditch 9	8	.65	4.0	2.0	Worstell i= 1.50 ft/day
7	Ditch 8	8	.14	4.0	2.0	Worstell i= 1.50 ft/day
8	Ditch 7	10	.54	4.0	2.0	Worstell i= 1.50 ft/day
9	Ditch 6	10	.17	4.0	2.0	Worstell i= 1.50 ft/day
10	Ditch 5	11	.75	4.0	2.0	Worstell i= 1.50 ft/day
11	Ditch 4	12	.28	4.0	2.0	Worstell i= 1.50 ft/day
12	Ditch 3	14	.21	4.0	2.0	Worstell i= 1.50 ft/day
13	Ditch 2	14	.34	4.0	2.0	Worstell i= 1.50 ft/day
14	Ditch 1	15	.26	4.0	2.0	Worstell i= 1.50 ft/day
15	Effective.Div	0	.00	.0	.0	Specified S= .00 cfs/mi

IRRIGATION SYSTEM INFORMATION

Name	Assumed Efficiency	Set Time	Run Flow	Length	Slope-Furrows Width-Others
FURROW FLD.A	50.0	24.	3.0	410.	.036
FURROW FLD.B	50.0	24.	3.0	330.	.030
FURROW FLD.C	50.0	24.	3.0	335.	.040
FURROW FLD.D	50.0	24.	3.0	230.	.017
FURROW FLD.E	50.0	24.	3.0	410.	.050
FURROW FLD.F	50.0	24.	4.0	765.	.017
FURROW FLD.G	50.0	24.	4.0	954.	.025
FURROW FLD.H	50.0	24.	3.0	400.	.034
FURROW FLD.I	50.0	96.	10.0	2580.	.009
FURROW FLD.J	50.0	24.	3.0	173.	.060
FURROW FLD.K	50.0	72.	8.0	1950.	.009
FURROW FLD.L	50.0	72.	8.0	1280.	.011
FURROW FLD.M	50.0	24.	4.0	698.	.029

SOILS INFORMATION

Name	Intake Family	Water Holding Capacity 1ft	2ft	3ft	4ft	5ft

20.BRUNEEL	2.0	2.04	3.72	4.14	4.56	5.98
72.MARSH-BRUN	2.0	2.11	4.08	5.45	6.77	7.40
82.MOON-EARCR	3.0	1.24	2.47	3.64	4.66	5.48
88.PEAVEY-SIM	2.0	1.97	4.08	5.50	6.34	7.18
102.SIMONTON	2.0	2.04	2.94	3.84	4.74	5.80

CROP SYSTEM INFORMATION

Name	Allowable Deficit	Furrow Spacing	Roughness
PASTURE MEAN	50.0	2.500	.100

Irrigation Water Requirements Analysis

Version 1.00

2008-02-18 @ 13:35:02

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust

South Area: Water Right 37-1150

C.G. Brockway, Brockway Engineering

CROP DISTRIBUTION FOR 20.BRUNEEL									
Crop	Total	01	02	03	by Irrigation System				
		08	09	10	04	05	06	07	
PASTURE MEAN	37.7	1.7	.0	7.8	.1	.3	15.6	11.3	
		.0	.9	.0	.0	.0	.0		

CROP DISTRIBUTION FOR 72.MARSH-BRUN									
Crop	Total	01	02	03	by Irrigation System				
		08	09	10	04	05	06	07	
PASTURE MEAN	169.2	3.9	11.4	1.2	7.7	10.1	18.7	11.6	
		6.5	25.6	9.9	21.2	14.2	27.2		

CROP DISTRIBUTION FOR 82.MOON-EARCR									
Crop	Total	01	02	03	by Irrigation System				
		08	09	10	04	05	06	07	
PASTURE MEAN	6.5	.0	2.1	.0	.0	.0	3.0	.0	
		1.3	.0	.0	.1	.0	.0		

CROP DISTRIBUTION FOR 88.PEAVEY-SIM									
Crop	Total	01	02	03	by Irrigation System				
		08	09	10	04	05	06	07	
PASTURE MEAN	21.7	.0	.0	.0	.0	2.2	.0	4.2	
		.0	.0	1.2	.5	.0	13.6		

CROP DISTRIBUTION FOR 102.SIMONTON									
Crop	Total	01	02	03	by Irrigation System				
		08	09	10	04	05	06	07	
PASTURE MEAN	22.9	.0	.0	.0	.0	.0	.0	6.3	
		16.6	.0	.0	.0	.0	.0		

Irrigation System Key

01 - FURROW FLD.A	02 - FURROW FLD.B	03 - FURROW FLD.C
04 - FURROW FLD.D	05 - FURROW FLD.E	06 - FURROW FLD.F
07 - FURROW FLD.G	08 - FURROW FLD.H	09 - FURROW FLD.I
10 - FURROW FLD.J	11 - FURROW FLD.K	12 - FURROW FLD.L
13 - FURROW FLD.M		

Project/Farm Irrigation Water Requirement Analysis
Version 1.00

Crop Requirements (in/day)
Crop Rooting Depths (ft)

BASED ON NORMAL DISTRIBUTION

Adjusted Crop Water Requirements for 50.0% probability level
Total Mar Apr May Jun Jul Aug Sep Oct

				PASTURE MEAN						
---CU---	31.6	.041	.111	.231	.275	.268	.249	.190	.120	
---IR---	28.5	.037	.081	.225	.273	.265	.249	.188	.117	
Root Depth		.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	

CU Peak to Ave Ratio vs Application Depth Curve (11 pts)

App.Depth(in)	.61	1.06	1.51	2.12	2.73	3.63	4.54	5.60	6.36
	6.96	7.57							
Peak:Average	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	1.000	1.000							

2008-02-18 @ 13:35:02

C.G. Brockway, Brockway Engineering

[illegible]

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:35:02

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
South Area: Water Right 37-1150
C.G. Brockway, Brockway Engineering

Peak Consumptive Use based on Peak:Mean(ASWD)
50.0 Percent Probability Level of CU

	SOIL CATAGORY: 20.BRUNEEL								
Crop	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	
PASTURE MEAN	.041	.111	.231	.275	.268	.249	.190	.120	
	SOIL CATAGORY: 72.MARSH-BRUN								
Crop	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	
PASTURE MEAN	.041	.111	.231	.275	.268	.249	.190	.120	
	SOIL CATAGORY: 82.MOON-EARCR								
Crop	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	
PASTURE MEAN	.041	.111	.231	.275	.268	.249	.190	.120	
	SOIL CATAGORY: 88.PEAVEY-SIM								
Crop	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	
PASTURE MEAN	.041	.111	.231	.275	.268	.249	.190	.120	
	SOIL CATAGORY: 102.SIMONTON								
Crop	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	
PASTURE MEAN	.041	.111	.231	.275	.268	.249	.190	.120	

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:35:02

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
South Area: Water Right 37-1150
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 20.BRUNEEL

Irrigation System Efficiency Analysis: FURROW FLD.A
Furrow Irrigation-> 24.Hours @ 3.0gpm on 410.ft @ .036ft/ft
CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN --- 27.5 27.5 27.5 27.5 27.5 27.5 27.5

Note the following symbol meanings
@@@ = Water did not reach end of furrow
* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 .619 1.716 2.086 2.019 1.899 1.433 .893

Based on analysis period peak consumptive use

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 .844 1.761 2.098 2.046 1.899 1.451 .920

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:35:02

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
South Area: Water Right 37-1150
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 20.BRUNEEL

Irrigation System Efficiency Analysis: FURROW FLD.C
Furrow Irrigation-> 24.Hours @ 3.0gpm on 335.ft @ .040ft/ft
CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	---	22.5	22.5	22.5	22.5	22.5	22.5	22.5

Note the following symbol meanings
@@@ = Water did not reach end of furrow
* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	.000	.758	2.100	2.552	2.472	2.324	1.754	1.092

Based on analysis period peak consumptive use

CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	.000	1.033	2.155	2.567	2.505	2.324	1.776	1.125

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:35:02

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
South Area: Water Right 37-1150
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 20.BRUNEEL

Irrigation System Efficiency Analysis: FURROW FLD.D
Furrow Irrigation-> 24.Hours @ 3.0gpm on 230.ft @ .017ft/ft
CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN --- 15.4 15.4 15.4 15.4 15.4 15.4 15.4

Note the following symbol meanings
@@@ = Water did not reach end of furrow
* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 1.104 3.059 3.718 3.600 3.386 2.555 1.591

Based on analysis period peak consumptive use

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 1.505 3.139 3.739 3.648 3.386 2.587 1.639

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:35:02

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
South Area: Water Right 37-1150
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 20.BRUNEEL

Irrigation System Efficiency Analysis: FURROW FLD.E
Furrow Irrigation-> 24.Hours @ 3.0gpm on 410.ft @ .050ft/ft
CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	---	27.5	27.5	27.5	27.5	27.5	27.5	27.5

Note the following symbol meanings
@@@ = Water did not reach end of furrow
* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.619	1.716	2.086	2.019	1.899	1.433	.893

Based on analysis period peak consumptive use

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.844	1.761	2.098	2.046	1.899	1.451	.920

Irrigation Water Requirements Analysis

Version 1.00

2008-02-18 @ 13:35:02

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
South Area: Water Right 37-1150

C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 20.BRUNEEL

Irrigation System Efficiency Analysis: FURROW FLD.F

Furrow Irrigation-> 24.Hours @ 4.0gpm on 765.ft @ .017ft/ft

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	---	38.5	38.5	38.5	38.5	38.5	38.5	38.5

Note the following symbol meanings

@@@ = Water did not reach end of furrow

* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.442	1.226	1.490	1.443	1.357	1.024	.638

Based on analysis period peak consumptive use

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.603	1.258	1.499	1.462	1.357	1.037	.657

Irrigation Water Requirements Analysis

Version 1.00

2008-02-18 @ 13:35:02

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
South Area: Water Right 37-1150

C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 20.BRUNEEL

Irrigation System Efficiency Analysis: FURROW FLD.G

Furrow Irrigation-> 24.Hours @ 4.0gpm on 954.ft @ .025ft/ft

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	---	48.0	48.0	48.0	48.0	48.0	48.0	48.0

Note the following symbol meanings

@@@ = Water did not reach end of furrow

* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.355	.983	1.195	1.157	1.088	.821	.511

Based on analysis period peak consumptive use

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.484	1.009	1.202	1.173	1.088	.832	.527

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:35:02

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
South Area: Water Right 37-1150
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 20.BRUNEEL

Irrigation System Efficiency Analysis: FURROW FLD.I
Furrow Irrigation-> 96.Hours @10.0gpm on 2580.ft @ .009ft/ft
CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN --- 13.0 13.0 13.0 13.0 13.0 13.0 13.0

Note the following symbol meanings
@@@ = Water did not reach end of furrow
* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 1.312 3.636 4.419 4.279 4.024 3.037 1.891

Based on analysis period peak consumptive use

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 1.789 3.731 4.444 4.336 4.024 3.075 1.948

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:35:02

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
South Area: Water Right 37-1150
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 72.MARSH-BRUN

Irrigation System Efficiency Analysis: FURROW FLD.A
Furrow Irrigation-> 24.Hours @ 3.0gpm on 410.ft @ .036ft/ft
CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN --- 30.2 30.2 30.2 30.2 30.2 30.2 30.2

Note the following symbol meanings
@@@ = Water did not reach end of furrow
* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 .564 1.565 1.902 1.841 1.732 1.307 .814

Based on analysis period peak consumptive use

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 .770 1.606 1.913 1.866 1.732 1.323 .838

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:35:02

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
South Area: Water Right 37-1150
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 72.MARSH-BRUN

Irrigation System Efficiency Analysis: FURROW FLD.B
Furrow Irrigation-> 24.Hours @ 3.0gpm on 330.ft @ .030ft/ft
CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN --- 24.3 24.3 24.3 24.3 24.3 24.3 24.3

Note the following symbol meanings
@@@ = Water did not reach end of furrow
* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 .701 1.944 2.363 2.288 2.151 1.624 1.011

Based on analysis period peak consumptive use

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 .957 1.995 2.376 2.318 2.151 1.644 1.042

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:35:02

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
South Area: Water Right 37-1150
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 72.MARSH-BRUN

Irrigation System Efficiency Analysis: FURROW FLD.C
Furrow Irrigation-> 24.Hours @ 3.0gpm on 335.ft @ .040ft/ft
CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN --- 24.7 24.7 24.7 24.7 24.7 24.7 24.7

Note the following symbol meanings
@@@ = Water did not reach end of furrow
* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 .691 1.915 2.327 2.253 2.119 1.600 .996

Based on analysis period peak consumptive use

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 .942 1.965 2.341 2.284 2.119 1.620 1.026

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:35:02

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
South Area: Water Right 37-1150
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 72.MARSH-BRUN

Irrigation System Efficiency Analysis: FURROW FLD.D
Furrow Irrigation-> 24.Hours @ 3.0gpm on 230.ft @ .017ft/ft
CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN --- 16.9 16.9 16.9 16.9 16.9 16.9 16.9

Note the following symbol meanings
@@@ = Water did not reach end of furrow
* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 1.006 2.789 3.390 3.282 3.087 2.330 1.451

Based on analysis period peak consumptive use

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 1.372 2.862 3.409 3.326 3.087 2.359 1.495

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:35:02

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
South Area: Water Right 37-1150
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 72.MARSH-BRUN

Irrigation System Efficiency Analysis: FURROW FLD.E
Furrow Irrigation-> 24.Hours @ 3.0gpm on 410.ft @ .050ft/ft
CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN --- 30.2 30.2 30.2 30.2 30.2 30.2 30.2

Note the following symbol meanings
@@@ = Water did not reach end of furrow
* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 .564 1.565 1.902 1.841 1.732 1.307 .814

Based on analysis period peak consumptive use

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 .770 1.606 1.913 1.866 1.732 1.323 .838

Irrigation Water Requirements Analysis

Version 1.00

2008-02-18 @ 13:35:02

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
South Area: Water Right 37-1150

C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 72.MARSH-BRUN

Irrigation System Efficiency Analysis: FURROW FLD.G

Furrow Irrigation-> 24.Hours @ 4.0gpm on 954.ft @ .025ft/ft

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	---	52.7	52.7	52.7	52.7	52.7	52.7	52.7

Note the following symbol meanings

@@@ = Water did not reach end of furrow

* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.323	.897	1.090	1.055	.992	.749	.466

Based on analysis period peak consumptive use

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.441	.920	1.096	1.069	.992	.758	.480

Irrigation Water Requirements Analysis

Version 1.00

2008-02-18 @ 13:35:02

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
South Area: Water Right 37-1150

C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 72.MARSH-BRUN

Irrigation System Efficiency Analysis: FURROW FLD.H

Furrow Irrigation-> 24.Hours @ 3.0gpm on 400.ft @ .034ft/ft

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	---	29.4	29.4	29.4	29.4	29.4	29.4	29.4

Note the following symbol meanings

@@@ = Water did not reach end of furrow

* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.579	1.604	1.949	1.887	1.775	1.340	.834

Based on analysis period peak consumptive use

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.789	1.646	1.960	1.913	1.775	1.356	.859

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:35:02

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
South Area: Water Right 37-1150
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 72.MARSH-BRUN

Irrigation System Efficiency Analysis: FURROW FLD.I
Furrow Irrigation-> 96.Hours @10.0gpm on 2580.ft @ .009ft/ft
CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN --- 14.2 14.2 14.2 14.2 14.2 14.2 14.2

Note the following symbol meanings

@@@ = Water did not reach end of furrow

* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 1.196 3.315 4.029 3.901 3.669 2.769 1.724

Based on analysis period peak consumptive use

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 1.631 3.402 4.052 3.954 3.669 2.804 1.777

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:35:02

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
South Area: Water Right 37-1150
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 72.MARSH-BRUN

Irrigation System Efficiency Analysis: FURROW FLD.J
Furrow Irrigation-> 24.Hours @ 3.0gpm on 173.ft @ .060ft/ft

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	---	12.7	12.7	12.7	12.7	12.7	12.7	12.7

Note the following symbol meanings
 @@@ = Water did not reach end of furrow
 * = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	1.338	3.708	4.507	4.364	4.104	3.097	1.929

Based on analysis period peak consumptive use

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	1.825	3.805	4.533	4.422	4.104	3.136	1.987

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:35:02

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
South Area: Water Right 37-1150
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 72.MARSH-BRUN

Irrigation System Efficiency Analysis: FURROW FLD.K
Furrow Irrigation-> 72.Hours @ 8.0gpm on 1950.ft @ .009ft/ft
CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	---	17.9	17.9	17.9	17.9	17.9	17.9	17.9

Note the following symbol meanings
@@@ = Water did not reach end of furrow
* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.949	2.632	3.198	3.097	2.913	2.198	1.369

Based on analysis period peak consumptive use

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	1.295	2.701	3.217	3.139	2.913	2.226	1.410

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:35:02

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
South Area: Water Right 37-1150
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 72.MARSH-BRUN

Irrigation System Efficiency Analysis: FURROW FLD.L
Furrow Irrigation-> 72.Hours @ 8.0gpm on 1280.ft @ .011ft/ft
CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	---	11.8	11.8	11.8	11.8	11.8	11.8	11.8

Note the following symbol meanings
@@@ = Water did not reach end of furrow
* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	.000	1.446	4.009	4.873	4.718	4.437	3.349	2.085

Based on analysis period peak consumptive use

CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	.000	1.973	4.114	4.901	4.781	4.437	3.391	2.148

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:35:02

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
South Area: Water Right 37-1150
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 72.MARSH-BRUN

Irrigation System Efficiency Analysis: FURROW FLD.M
Furrow Irrigation-> 24.Hours @ 4.0gpm on 698.ft @ .029ft/ft
CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	---	38.5	38.5	38.5	38.5	38.5	38.5	38.5

Note the following symbol meanings
@@@ = Water did not reach end of furrow
* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	.000	.442	1.225	1.489	1.442	1.356	1.024	.637

Based on analysis period peak consumptive use

CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	.000	.603	1.258	1.498	1.461	1.356	1.036	.657

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:35:02

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
South Area: Water Right 37-1150
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 82.MOON-EARCR

Irrigation System Efficiency Analysis: FURROW FLD.B
Furrow Irrigation-> 24.Hours @ 3.0gpm on 330.ft @ .030ft/ft
CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	---	14.7	14.7	14.7	14.7	14.7	14.7	14.7

Note the following symbol meanings
@@@ = Water did not reach end of furrow
* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	.000	1.158	3.211	3.902	3.779	3.554	2.682	1.670

Based on analysis period peak consumptive use

CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	.000	1.580	3.295	3.925	3.829	3.554	2.716	1.721

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:35:02

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
South Area: Water Right 37-1150
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 82.MOON-EARCR

Irrigation System Efficiency Analysis: FURROW FLD.F
Furrow Irrigation-> 24.Hours @ 4.0gpm on 765.ft @ .017ft/ft
CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN --- 25.6 25.6 25.6 25.6 25.6 25.6 25.6

Note the following symbol meanings
@@@ = Water did not reach end of furrow
* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 .666 1.847 2.245 2.173 2.044 1.543 .961

Based on analysis period peak consumptive use

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 .909 1.895 2.257 2.203 2.044 1.562 .990

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:35:02

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
South Area: Water Right 37-1150
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 82.MOON-EARCR

Irrigation System Efficiency Analysis: FURROW FLD.H
Furrow Irrigation-> 24.Hours @ 3.0gpm on 400.ft @ .034ft/ft
CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	---	17.8	17.8	17.8	17.8	17.8	17.8	17.8

Note the following symbol meanings
@@@ = Water did not reach end of furrow
* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	.000	.956	2.649	3.220	3.117	2.932	2.213	1.378

Based on analysis period peak consumptive use

CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	.000	1.304	2.719	3.238	3.159	2.932	2.241	1.420

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:35:02

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
South Area: Water Right 37-1150
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 82.MOON-EARCR

Irrigation System Efficiency Analysis: FURROW FLD.K
Furrow Irrigation-> 72.Hours @ 8.0gpm on 1950.ft @ .009ft/ft
CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	---	10.9	10.9	10.9	10.9	10.9	10.9	10.9

Note the following symbol meanings
@@@ = Water did not reach end of furrow
* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	.000	1.568	4.347	5.283	5.116	4.811	3.631	2.261

Based on analysis period peak consumptive use

CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	.000	2.139	4.461	5.314	5.184	4.811	3.677	2.330

Irrigation Water Requirements Analysis
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Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
South Area: Water Right 37-1150
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 88.PEAVEY-SIM

Irrigation System Efficiency Analysis: FURROW FLD.E
Furrow Irrigation-> 24.Hours @ 3.0gpm on 410.ft @ .050ft/ft
CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	---	30.2	30.2	30.2	30.2	30.2	30.2	30.2

Note the following symbol meanings
@@@ = Water did not reach end of furrow
* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.564	1.565	1.902	1.841	1.732	1.307	.814

Based on analysis period peak consumptive use

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.770	1.606	1.913	1.866	1.732	1.323	.838

Irrigation Water Requirements Analysis

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Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
South Area: Water Right 37-1150

C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 88.PEAVEY-SIM

Irrigation System Efficiency Analysis: FURROW FLD.G

Furrow Irrigation-> 24.Hours @ 4.0gpm on 954.ft @ .025ft/ft

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	---	52.7	52.7	52.7	52.7	52.7	52.7	52.7

Note the following symbol meanings

@@@ = Water did not reach end of furrow

* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.323	.897	1.090	1.055	.992	.749	.466

Based on analysis period peak consumptive use

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.441	.920	1.096	1.069	.992	.758	.480

Irrigation Water Requirements Analysis
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Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
South Area: Water Right 37-1150
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 88.PEAVEY-SIM

Irrigation System Efficiency Analysis: FURROW FLD.J
Furrow Irrigation-> 24.Hours @ 3.0gpm on 173.ft @ .060ft/ft
CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN --- 12.7 12.7 12.7 12.7 12.7 12.7 12.7

Note the following symbol meanings
@@@ = Water did not reach end of furrow
* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 1.338 3.708 4.507 4.364 4.104 3.097 1.929

Based on analysis period peak consumptive use

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 1.825 3.805 4.533 4.422 4.104 3.136 1.987

Irrigation Water Requirements Analysis

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Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
South Area: Water Right 37-1150

C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 88.PEAVEY-SIM

Irrigation System Efficiency Analysis: FURROW FLD.K

Furrow Irrigation-> 72.Hours @ 8.0gpm on 1950.ft @ .009ft/ft

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	---	17.9	17.9	17.9	17.9	17.9	17.9	17.9

Note the following symbol meanings

@@@ = Water did not reach end of furrow

* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.949	2.632	3.198	3.097	2.913	2.198	1.369

Based on analysis period peak consumptive use

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	1.295	2.701	3.217	3.139	2.913	2.226	1.410

Irrigation Water Requirements Analysis
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Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
South Area: Water Right 37-1150
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 88.PEAVEY-SIM

Irrigation System Efficiency Analysis: FURROW FLD.M
Furrow Irrigation-> 24.Hours @ 4.0gpm on 698.ft @ .029ft/ft

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	---	38.5	38.5	38.5	38.5	38.5	38.5	38.5

Note the following symbol meanings

@@@ = Water did not reach end of furrow

* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.442	1.225	1.489	1.442	1.356	1.024	.637

Based on analysis period peak consumptive use

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.603	1.258	1.498	1.461	1.356	1.036	.657

Irrigation Water Requirements Analysis
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Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
South Area: Water Right 37-1150
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 102.SIMONTON

Irrigation System Efficiency Analysis: FURROW FLD.G
Furrow Irrigation-> 24.Hours @ 4.0gpm on 954.ft @ .025ft/ft
CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	---	37.9	37.9	37.9	37.9	37.9	37.9	37.9

Note the following symbol meanings

@@@ = Water did not reach end of furrow

* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	.000	.449	1.244	1.512	1.464	1.377	1.039	.647

Based on analysis period peak consumptive use

CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	.000	.612	1.277	1.521	1.484	1.377	1.052	.667

Irrigation Water Requirements Analysis

Version 1.00

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Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
South Area: Water Right 37-1150

C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 102.SIMONTON

Irrigation System Efficiency Analysis: FURROW FLD.H

Furrow Irrigation-> 24.Hours @ 3.0gpm on 400.ft @ .034ft/ft

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	---	21.2	21.2	21.2	21.2	21.2	21.2	21.2

Note the following symbol meanings

@@@ = Water did not reach end of furrow

* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.803	2.225	2.705	2.619	2.463	1.859	1.158

Based on analysis period peak consumptive use

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	1.095	2.284	2.720	2.654	2.463	1.882	1.193

Irrigation Water Requirements Analysis

Version 1.25

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Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust

South Area: Water Right 37-1150

C.G. Brockway, Brockway Engineering

Overall Project On-Farm Diversion Requirement

With a 50.0% Water Requirement Probability Level

Based on analysis period irrigation requirement

CROP	Total	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	ac-ft		-----	miners	inches	per ac.	-----		
PASTURE MEAN	2556.	.000	.729	2.021	2.456	2.378	2.237	1.688	1.051

*Entire Project	2556.	.000	.729	2.021	2.456	2.378	2.237	1.688	1.051

Based on analysis period peak consumptive use

CROP	Total	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	arces		-----	miners	inches	per ac.	-----		
PASTURE MEAN	258.	.000	.995	2.074	2.470	2.410	2.237	1.709	1.083

*Entire Project	258.	.000	.995	2.074	2.470	2.410	2.237	1.709	1.083

Irrigation Water Requirements Analysis
Version 1.25
2008-02-18 @ 13:35:02

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
South Area: Water Right 37-1150
C.G. Brockway, Brockway Engineering

Fraction of Soil Type Area served by Canal/Lateral Segment

Canal\Soil Class	01	02	03	04	05
Ditch 14-15	.000	.164	.216	.022	.724
Ditch 13	.000	.000	.000	.000	.000
Ditch 12	.414	.111	.462	.000	.000
Ditch 11	.000	.000	.000	.000	.000
Ditch 10	.000	.067	.321	.000	.000
Ditch 9	.000	.161	.000	.625	.000
Ditch 8	.000	.084	.000	.000	.000
Ditch 7	.000	.058	.000	.055	.000
Ditch 6	.024	.151	.000	.000	.001
Ditch 5	.299	.068	.000	.195	.275
Ditch 4	.009	.060	.000	.102	.000
Ditch 3	.207	.007	.000	.000	.000
Ditch 2	.002	.045	.000	.000	.000
Ditch 1	.045	.023	.000	.000	.000
Effective.Div	.000	.000	.000	.000	.000

Table Soil Type Key

01 - 20.BRUNEEL	02 - 72.MARSH-BRUN	03 - 82.MOON-EARCR
04 - 88.PEAVEY-SIM	05 - 102.SIMONTON	

Irrigation Water Requirements Analysis
Version 1.25
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Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
South Area: Water Right 37-1150
C.G. Brockway, Brockway Engineering

Canal/Lateral Discharge Summary
(cubic feet per second)

Canal/Lateral Mar Apr May Jun Jul Aug Sep Oct

Ditch 14-15 **** Seepage Rate: .40 cfs/mi or .39 cfs **** = 5.7 mi

Based on analysis period irrigation requirement

DS Delivery	.0	.0	.0	.0	.0	.0	.0	.0
On-Farm Div.	.0	.7	2.0	2.4	2.3	2.2	1.6	1.0
Seepage Loss	.0	.4	.4	.4	.4	.4	.4	.4
US Div. Req.	.0	1.1	2.4	2.8	2.7	2.6	2.0	1.4

Based on analysis period peak consumptive use

DS Delivery	.0	.0	.0	.0	.0	.0	.0	.0
On-Farm Div.	.0	1.0	2.0	2.4	2.3	2.2	1.7	1.1
Seepage Loss	.0	.4	.4	.4	.4	.4	.4	.4
US Div. Req.	.0	1.4	2.4	2.8	2.7	2.6	2.1	1.4

Ditch 13 **** Seepage Rate: .40 cfs/mi or .18 cfs ****

Based on analysis period irrigation requirement

DS Delivery	.0	1.1	2.4	2.8	2.7	2.6	2.0	1.4
On-Farm Div.	.0	.0	.0	.0	.0	.0	.0	.0
Seepage Loss	.0	.2	.2	.2	.2	.2	.2	.2
US Div. Req.	.0	1.3	2.5	3.0	2.9	2.7	2.2	1.6

Based on analysis period peak consumptive use

DS Delivery	.0	1.4	2.4	2.8	2.7	2.6	2.1	1.4
On-Farm Div.	.0	.0	.0	.0	.0	.0	.0	.0
Seepage Loss	.0	.2	.2	.2	.2	.2	.2	.2
US Div. Req.	.0	1.5	2.6	3.0	2.9	2.7	2.2	1.6

Ditch 12 **** Seepage Rate: .40 cfs/mi or .07 cfs ****

Based on analysis period irrigation requirement

DS Delivery	.0	.0	.0	.0	.0	.0	.0	.0
On-Farm Div.	.0	.5	1.4	1.7	1.7	1.6	1.2	.7
Seepage Loss	.0	.1	.1	.1	.1	.1	.1	.1
US Div. Req.	.0	.6	1.5	1.8	1.8	1.7	1.3	.8

Based on analysis period peak consumptive use

DS Delivery	.0	.0	.0	.0	.0	.0	.0	.0
On-Farm Div.	.0	.7	1.5	1.7	1.7	1.6	1.2	.8
Seepage Loss	.0	.1	.1	.1	.1	.1	.1	.1
US Div. Req.	.0	.8	1.5	1.8	1.8	1.7	1.3	.8

Ditch 11 **** Seepage Rate: .40 cfs/mi or .15 cfs ****

Based on analysis period irrigation requirement

DS Delivery	.0	1.9	4.0	4.8	4.6	4.4	3.5	2.4
On-Farm Div.	.0	.0	.0	.0	.0	.0	.0	.0
Seepage Loss	.0	.2	.2	.2	.2	.2	.2	.2
US Div. Req.	.0	2.0	4.2	4.9	4.8	4.5	3.6	2.5

Based on analysis period peak consumptive use

DS Delivery	.0	2.3	4.1	4.8	4.7	4.4	3.5	2.5
On-Farm Div.	.0	.0	.0	.0	.0	.0	.0	.0
Seepage Loss	.0	.2	.2	.2	.2	.2	.2	.2
US Div. Req.	.0	2.5	4.3	4.9	4.8	4.5	3.7	2.6

Ditch 10 **** Seepage Rate: .40 cfs/mi or .04 cfs ****

Based on analysis period irrigation requirement

DS Delivery	.0	2.0	4.2	4.9	4.8	4.5	3.6	2.5
On-Farm Div.	.0	.2	.6	.7	.7	.7	.5	.3
Seepage Loss	.0	.0	.0	.0	.0	.0	.0	.0
US Div. Req.	.0	2.3	4.8	5.7	5.5	5.3	4.2	2.9

Based on analysis period peak consumptive use

DS Delivery	.0	2.5	4.3	4.9	4.8	4.5	3.7	2.6
On-Farm Div.	.0	.3	.6	.7	.7	.7	.5	.3
Seepage Loss	.0	.0	.0	.0	.0	.0	.0	.0
US Div. Req.	.0	2.8	4.9	5.7	5.6	5.3	4.2	3.0

Ditch 9 **** Seepage Rate: .40 cfs/mi or .26 cfs ****

Based on analysis period irrigation requirement

DS Delivery	.0	.0	.0	.0	.0	.0	.0	.0
On-Farm Div.	.0	.6	1.6	1.9	1.9	1.8	1.3	.8
Seepage Loss	.0	.3	.3	.3	.3	.3	.3	.3
US Div. Req.	.0	.8	1.8	2.2	2.1	2.0	1.6	1.1

Based on analysis period peak consumptive use

DS Delivery	.0	.0	.0	.0	.0	.0	.0	.0
On-Farm Div.	.0	.8	1.6	1.9	1.9	1.8	1.3	.8
Seepage Loss	.0	.3	.3	.3	.3	.3	.3	.3
US Div. Req.	.0	1.0	1.9	2.2	2.2	2.0	1.6	1.1

Ditch 8 **** Seepage Rate: .40 cfs/mi or .05 cfs ****

Based on analysis period irrigation requirement

DS Delivery	.0	.0	.0	.0	.0	.0	.0	.0
On-Farm Div.	.0	.2	.6	.8	.7	.7	.5	.3
Seepage Loss	.0	.1	.1	.1	.1	.1	.1	.1
US Div. Req.	.0	.3	.7	.8	.8	.8	.6	.4

Based on analysis period peak consumptive use

DS Delivery	.0	.0	.0	.0	.0	.0	.0	.0
On-Farm Div.	.0	.3	.7	.8	.8	.7	.5	.3
Seepage Loss	.0	.1	.1	.1	.1	.1	.1	.1
US Div. Req.	.0	.4	.7	.8	.8	.8	.6	.4

Ditch 7 **** Seepage Rate: .40 cfs/mi or .21 cfs ****

Based on analysis period irrigation requirement

DS Delivery	.0	1.1	2.5	3.0	2.9	2.8	2.2	1.5
On-Farm Div.	.0	.2	.5	.6	.6	.5	.4	.2
Seepage Loss	.0	.2	.2	.2	.2	.2	.2	.2
US Div. Req.	.0	1.5	3.2	3.8	3.7	3.5	2.8	1.9

Based on analysis period peak consumptive use

DS Delivery	.0	1.4	2.6	3.0	3.0	2.8	2.2	1.5
On-Farm Div.	.0	.2	.5	.6	.6	.5	.4	.3
Seepage Loss	.0	.2	.2	.2	.2	.2	.2	.2
US Div. Req.	.0	1.9	3.3	3.8	3.7	3.5	2.8	2.0

Ditch 6 **** Seepage Rate: .40 cfs/mi or .07 cfs ****

Based on analysis period irrigation requirement

DS Delivery	.0	.0	.0	.0	.0	.0	.0	.0
On-Farm Div.	.0	.4	1.2	1.4	1.4	1.3	1.0	.6
Seepage Loss	.0	.1	.1	.1	.1	.1	.1	.1
US Div. Req.	.0	.5	1.2	1.5	1.4	1.4	1.0	.7

Based on analysis period peak consumptive use

DS Delivery	.0	.0	.0	.0	.0	.0	.0	.0
On-Farm Div.	.0	.6	1.2	1.4	1.4	1.3	1.0	.6
Seepage Loss	.0	.1	.1	.1	.1	.1	.1	.1
US Div. Req.	.0	.6	1.3	1.5	1.5	1.4	1.1	.7

Ditch 5 **** Seepage Rate: .40 cfs/mi or .30 cfs ****

Based on analysis period irrigation requirement

DS Delivery	.0	2.0	4.5	5.3	5.1	4.9	3.8	2.6
On-Farm Div.	.0	.4	1.2	1.5	1.4	1.3	1.0	.6
Seepage Loss	.0	.3	.3	.3	.3	.3	.3	.3
US Div. Req.	.0	2.7	5.9	7.0	6.8	6.5	5.1	3.5

Based on analysis period peak consumptive use

DS Delivery	.0	2.5	4.6	5.3	5.2	4.9	3.9	2.7
On-Farm Div.	.0	.6	1.2	1.5	1.4	1.3	1.0	.6
Seepage Loss	.0	.3	.3	.3	.3	.3	.3	.3
US Div. Req.	.0	3.4	6.1	7.1	6.9	6.5	5.2	3.6

Ditch 4 **** Seepage Rate: .40 cfs/mi or .11 cfs ****

Based on analysis period irrigation requirement

DS Delivery	.0	2.7	5.9	7.0	6.8	6.5	5.1	3.5
On-Farm Div.	.0	.2	.5	.6	.6	.6	.4	.3
Seepage Loss	.0	.1	.1	.1	.1	.1	.1	.1
US Div. Req.	.0	3.0	6.6	7.8	7.6	7.2	5.7	3.9

Based on analysis period peak consumptive use

DS Delivery	.0	3.4	6.1	7.1	6.9	6.5	5.2	3.6
On-Farm Div.	.0	.3	.5	.6	.6	.6	.4	.3
Seepage Loss	.0	.1	.1	.1	.1	.1	.1	.1
US Div. Req.	.0	3.8	6.7	7.8	7.7	7.2	5.7	4.0

Ditch 3 **** Seepage Rate: .40 cfs/mi or .08 cfs ****

Based on analysis period irrigation requirement

DS Delivery	.0	3.0	6.6	7.8	7.6	7.2	5.7	3.9
On-Farm Div.	.0	.1	.3	.3	.3	.3	.2	.1
Seepage Loss	.0	.1	.1	.1	.1	.1	.1	.1
US Div. Req.	.0	3.2	6.9	8.2	8.0	7.6	6.0	4.1

Based on analysis period peak consumptive use

DS Delivery	.0	3.8	6.7	7.8	7.7	7.2	5.7	4.0
On-Farm Div.	.0	.1	.3	.3	.3	.3	.2	.1
Seepage Loss	.0	.1	.1	.1	.1	.1	.1	.1
US Div. Req.	.0	4.0	7.1	8.2	8.1	7.6	6.0	4.2

Ditch 2 **** Seepage Rate: .40 cfs/mi or .14 cfs ****

Based on analysis period irrigation requirement

DS Delivery	.0	.0	.0	.0	.0	.0	.0	.0
On-Farm Div.	.0	.1	.3	.4	.4	.4	.3	.2
Seepage Loss	.0	.1	.1	.1	.1	.1	.1	.1
US Div. Req.	.0	.3	.5	.6	.5	.5	.4	.3

Based on analysis period peak consumptive use

DS Delivery	.0	.0	.0	.0	.0	.0	.0	.0
On-Farm Div.	.0	.2	.4	.4	.4	.4	.3	.2
Seepage Loss	.0	.1	.1	.1	.1	.1	.1	.1
US Div. Req.	.0	.3	.5	.6	.5	.5	.4	.3

Ditch 1 **** Seepage Rate: .40 cfs/mi or .10 cfs ****

Based on analysis period irrigation requirement

DS Delivery	.0	3.5	7.4	8.8	8.5	8.1	6.4	4.4
On-Farm Div.	.0	.1	.2	.3	.3	.2	.2	.1
Seepage Loss	.0	.1	.1	.1	.1	.1	.1	.1
US Div. Req.	.0	3.6	7.7	9.1	8.9	8.4	6.7	4.7

Based on analysis period peak consumptive use

DS Delivery	.0	4.3	7.6	8.8	8.6	8.1	6.5	4.5
On-Farm Div.	.0	.1	.2	.3	.3	.2	.2	.1
Seepage Loss	.0	.1	.1	.1	.1	.1	.1	.1
US Div. Req.	.0	4.5	7.9	9.2	9.0	8.4	6.8	4.8

Effective.Div **** Seepage Rate: .00 cfs/mi or .00 cfs ****

Based on analysis period irrigation requirement

DS Delivery	.0	5.9	12.6	14.8	14.4	13.7	10.9	7.6
On-Farm Div.	.0	.0	.0	.0	.0	.0	.0	.0
Seepage Loss	.0	.0	.0	.0	.0	.0	.0	.0
US Div. Req.	.0	5.9	12.6	14.8	14.4	13.7	10.9	7.6

Based on analysis period peak consumptive use

DS Delivery	.0	7.3	12.8	14.9	14.6	13.7	11.0	7.7
On-Farm Div.	.0	.0	.0	.0	.0	.0	.0	.0
Seepage Loss	.0	.0	.0	.0	.0	.0	.0	.0
US Div. Req.	.0	7.3	12.8	14.9	14.6	13.7	11.0	7.7

Irrigation Water Requirements Analysis
Version 1.25
2008-02-18 @ 13:35:02

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
South Area: Water Right 37-1150
C.G. Brockway, Brockway Engineering

PROJECT IRRIGATION DIVERSION REQUIREMENTS
SUMMARY

Total Irrigated Area: 258.00 acres

Based on analysis period irrigation requirement

Max Project Diversion: 14.82 cfs(2.872 mi/ac)

Based on analysis period peak consumptive use

Peak Project Diversion: 14.89 cfs(2.886 mi/ac)

Appendix D
Water Requirement Model Output
North Area

Irrigation Water Requirements Analysis

Version 1.00

2008-02-18 @ 13:45:24

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
North Area: Water Right 37-1151D (reduced number of ditches)

C.G. Brockway, Brockway Engineering

Crop Water Requirements Datafile: picabo20.cir

Probability Level for Analysis: 50.0

Number of Canal/Lateral Segments: 15

Number of Irrigation Methods: 13

Number of Soil Types: 5

Number of Crops: 1

Number of Analysis Periods: 8

CANAL/LATERAL INFORMATION

#	Name	Segment	Upstream Length miles	Width feet	F-Area sq-ft	Seepage Method			
1	Ditch 32	2	.68	4.0	2.0	Worstell	i=	1.50	ft/day
2	Ditch 31	4	.42	4.0	2.0	Worstell	i=	1.50	ft/day
3	Ditch 30	4	.44	4.0	2.0	Worstell	i=	1.50	ft/day
4	Ditch 29	15	.20	4.0	2.0	Worstell	i=	1.50	ft/day
5	Ditch 28	6	.90	4.0	2.0	Worstell	i=	1.50	ft/day
6	Ditch 27	15	.11	4.0	2.0	Worstell	i=	1.50	ft/day
7	Ditch 26	8	1.03	4.0	2.0	Worstell	i=	1.50	ft/day
8	Ditch 25	9	.49	4.0	2.0	Worstell	i=	1.50	ft/day
9	Ditch 24	15	.55	4.0	2.0	Worstell	i=	1.50	ft/day
10	Ditch 23	11	.44	4.0	2.0	Worstell	i=	1.50	ft/day
11	Ditch 22	12	.49	4.0	2.0	Worstell	i=	1.50	ft/day
12	Ditch 20-21	15	.56	4.0	2.0	Worstell	i=	1.50	ft/day
13	Ditch 18-19	15	.55	4.0	2.0	Worstell	i=	1.50	ft/day
14	Ditch 16-17	15	.81	4.0	2.0	Worstell	i=	1.50	ft/day
15	Effective.Div	0	.00	.0	.0	Specified S=		.00	cfs/mi

IRRIGATION SYSTEM INFORMATION

Name	Assumed Efficiency	Set Time	Run Flow	Slope-Furrows Length	Width-Others
FURROW FLD.N	50.0	48.	5.0	1760.	.020
FURROW FLD.O	50.0	48.	4.0	1141.	.024
FURROW FLD.P	50.0	48.	7.0	1830.	.012
FURROW FLD.Q	50.0	24.	3.0	550.	.036
FURROW FLD.R	50.0	24.	3.0	365.	.020
FURROW FLD.S	50.0	24.	4.0	838.	.013
FURROW FLD.T	50.0	24.	3.0	305.	.013
FURROW FLD.U	50.0	24.	3.0	645.	.028
FURROW FLD.V	50.0	24.	3.0	432.	.025
FURROW FLD.W	50.0	24.	4.0	577.	.010
FURROW FLD.X	50.0	24.	3.0	310.	.029
FURROW FLD.Y	50.0	24.	3.0	300.	.021
FURROW FLD.Z	50.0	24.	4.0	592.	.028

SOILS INFORMATION

Name	Intake Family	Water Holding Capacity 1ft	2ft	3ft	4ft	5ft

20.BRUNEEL	2.0	2.04	3.72	4.14	4.56	5.98
72.MARSH-BRUN	2.0	2.11	4.08	5.45	6.77	7.40
82.MOON-EARCR	3.0	1.24	2.47	3.64	4.66	5.48
88.PEAVEY-SIM	2.0	1.97	4.08	5.50	6.34	7.18
102.SIMONTON	2.0	2.04	2.94	3.84	4.74	5.80

CROP SYSTEM INFORMATION

Name	Allowable Deficit	Furrow Spacing	Roughness
PASTURE MEAN	50.0	2.500	.100

Irrigation Water Requirements Analysis

Version 1.00

2008-02-18 @ 13:45:24

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
North Area: Water Right 37-1151D (reduced number of ditches)

C.G. Brockway, Brockway Engineering

CROP DISTRIBUTION FOR 20.BRUNEEL				by Irrigation System				
Crop	Total	01	02	03	04	05	06	07
		08	09	10	11	12	13	
PASTURE MEAN	8.0	.0	.0	.0	.0	.4	.7	1.2
		5.7	.0	.0	.0	.0	.0	

CROP DISTRIBUTION FOR 72.MARSH-BRUN				by Irrigation System				
Crop	Total	01	02	03	04	05	06	07
		08	09	10	11	12	13	
PASTURE MEAN	222.4	26.5	27.0	17.6	12.5	8.6	8.4	3.5
		31.8	20.0	25.2	2.1	12.1	27.1	

CROP DISTRIBUTION FOR 82.MOON-EARCR				by Irrigation System				
Crop	Total	01	02	03	04	05	06	07
		08	09	10	11	12	13	
PASTURE MEAN	57.1	.0	.0	.1	10.3	4.6	.0	.5
		.4	7.6	.0	3.9	18.5	11.2	

CROP DISTRIBUTION FOR 88.PEAVEY-SIM				by Irrigation System				
Crop	Total	01	02	03	04	05	06	07
		08	09	10	11	12	13	
PASTURE MEAN	.0	.0	.0	.0	.0	.0	.0	.0
		.0	.0	.0	.0	.0	.0	

CROP DISTRIBUTION FOR 102.SIMONTON				by Irrigation System				
Crop	Total	01	02	03	04	05	06	07
		08	09	10	11	12	13	
PASTURE MEAN	30.1	.0	.0	1.3	4.4	2.7	7.8	.0
		.0	2.0	.3	3.0	.0	8.6	

Irrigation System Key

01 - FURROW FLD.N	02 - FURROW FLD.O	03 - FURROW FLD.P
04 - FURROW FLD.Q	05 - FURROW FLD.R	06 - FURROW FLD.S
07 - FURROW FLD.T	08 - FURROW FLD.U	09 - FURROW FLD.V
10 - FURROW FLD.W	11 - FURROW FLD.X	12 - FURROW FLD.Y
13 - FURROW FLD.Z		

Crop Irrigation Requirements (mm/day)

Title: Picabo CU from Allen & Robison (2007) - 20% Exceedance of 7-day Peak

[illegible]

Project/Farm Irrigation Water Requirement Analysis
Version 1.00

Crop Requirements (in/day)
Crop Rooting Depths (ft)

BASED ON NORMAL DISTRIBUTION

Adjusted Crop Water Requirements for 50.0% probability level
Total Mar Apr May Jun Jul Aug Sep Oct

	Total	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN									
---CU---	31.6	.041	.111	.231	.275	.268	.249	.190	.120
---IR---	28.5	.037	.081	.225	.273	.265	.249	.188	.117
Root Depth		.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0

CU Peak to Ave Ratio vs Application Depth Curve (11 pts)

App.Depth(in)	.61	1.06	1.51	2.12	2.73	3.63	4.54	5.60	6.36
	6.96	7.57							
Peak:Average	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	1.000	1.000							

Irrigation Water Requirements Analysis

Version 1.00

2008-02-18 @ 13:45:24

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
North Area: Water Right 37-1151D (reduced number of ditches)

C.G. Brockway, Brockway Engineering

Peak Consumptive Use based on Peak:Mean(ASWD)
50.0 Percent Probability Level of CU

	SOIL CATAGORY:	20.BRUNEEL						
Crop	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.041	.111	.231	.275	.268	.249	.190	.120

	SOIL CATAGORY:	72.MARSH-BRUN						
Crop	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.041	.111	.231	.275	.268	.249	.190	.120

	SOIL CATAGORY:	82.MOON-EARCR						
Crop	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.041	.111	.231	.275	.268	.249	.190	.120

	SOIL CATAGORY:	88.PEAVEY-SIM						
Crop	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.041	.111	.231	.275	.268	.249	.190	.120

	SOIL CATAGORY:	102.SIMONTON						
Crop	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.041	.111	.231	.275	.268	.249	.190	.120

Irrigation Water Requirements Analysis
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Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
North Area: Water Right 37-1151D (reduced number of ditches)
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 20.BRUNEEL

Irrigation System Efficiency Analysis: FURROW FLD.R
Furrow Irrigation-> 24.Hours @ 3.0gpm on 365.ft @ .020ft/ft
CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN --- 24.5 24.5 24.5 24.5 24.5 24.5 24.5

Note the following symbol meanings
@@@ = Water did not reach end of furrow
* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 .695 1.927 2.343 2.268 2.133 1.610 1.003

Based on analysis period peak consumptive use

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 .949 1.978 2.356 2.299 2.133 1.630 1.033

Irrigation Water Requirements Analysis

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Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
North Area: Water Right 37-1151D (reduced number of ditches)
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 20.BRUNEEL

Irrigation System Efficiency Analysis: FURROW FLD.S

Furrow Irrigation-> 24.Hours @ 4.0gpm on 838.ft @ .013ft/ft

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	---	42.2	42.2	42.2	42.2	42.2	42.2	42.2

Note the following symbol meanings

@@@ = Water did not reach end of furrow

* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.404	1.119	1.361	1.317	1.239	.935	.582

Based on analysis period peak consumptive use

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.551	1.149	1.368	1.335	1.239	.947	.600

Irrigation Water Requirements Analysis
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Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
North Area: Water Right 37-1151D (reduced number of ditches)
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 20.BRUNEEL

Irrigation System Efficiency Analysis: FURROW FLD.T
Furrow Irrigation-> 24.Hours @ 3.0gpm on 305.ft @ .013ft/ft

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	---	20.5	20.5	20.5	20.5	20.5	20.5	20.5

Note the following symbol meanings

@@@ = Water did not reach end of furrow

* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.832	2.307	2.804	2.715	2.553	1.927	1.200

Based on analysis period peak consumptive use

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	1.135	2.367	2.820	2.751	2.553	1.951	1.236

Irrigation Water Requirements Analysis

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Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
North Area: Water Right 37-1151D (reduced number of ditches)
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 20.BRUNEEL

Irrigation System Efficiency Analysis: FURROW FLD.U

Furrow Irrigation-> 24.Hours @ 3.0gpm on 645.ft @ .028ft/ft

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	---	43.3	43.3	43.3	43.3	43.3	43.3	43.3

Note the following symbol meanings

@@@ = Water did not reach end of furrow

* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.394	1.091	1.326	1.284	1.207	.911	.567

Based on analysis period peak consumptive use

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.537	1.119	1.333	1.301	1.207	.923	.585

Irrigation Water Requirements Analysis

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Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
North Area: Water Right 37-1151D (reduced number of ditches)
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 72.MARSH-BRUN

Irrigation System Efficiency Analysis: FURROW FLD.N
Furrow Irrigation-> 48.Hours @ 5.0gpm on 1760.ft @ .020ft/ft

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	---	38.9	38.9	38.9	38.9	38.9	38.9	38.9

Note the following symbol meanings

@@@ = Water did not reach end of furrow

* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.438	1.215	1.477	1.430	1.345	1.015	.632

Based on analysis period peak consumptive use

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.598	1.247	1.485	1.449	1.345	1.028	.651

Irrigation Water Requirements Analysis

Version 1.00

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Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
North Area: Water Right 37-1151D (reduced number of ditches)
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 72.MARSH-BRUN

Irrigation System Efficiency Analysis: FURROW FLD.O

Furrow Irrigation-> 48.Hours @ 4.0gpm on 1141.ft @ .024ft/ft

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	---	31.5	31.5	31.5	31.5	31.5	31.5	31.5

Note the following symbol meanings

@@@ = Water did not reach end of furrow

* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.541	1.499	1.822	1.764	1.659	1.252	.780

Based on analysis period peak consumptive use

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.738	1.539	1.833	1.788	1.659	1.268	.803

Irrigation Water Requirements Analysis
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Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
North Area: Water Right 37-1151D (reduced number of ditches)
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 72.MARSH-BRUN

Irrigation System Efficiency Analysis: FURROW FLD.P
Furrow Irrigation-> 48.Hours @ 7.0gpm on 1830.ft @ .012ft/ft

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	---	28.9	28.9	28.9	28.9	28.9	28.9	28.9

Note the following symbol meanings
 @@@ = Water did not reach end of furrow
 * = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.590	1.636	1.988	1.925	1.811	1.366	.851

Based on analysis period peak consumptive use

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.805	1.679	2.000	1.951	1.811	1.384	.877

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:45:24

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
North Area: Water Right 37-1151D (reduced number of ditches)
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 72.MARSH-BRUN

Irrigation System Efficiency Analysis: FURROW FLD.Q
Furrow Irrigation-> 24.Hours @ 3.0gpm on 550.ft @ .036ft/ft

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	---	40.5	40.5	40.5	40.5	40.5	40.5	40.5

Note the following symbol meanings
 @@@ = Water did not reach end of furrow
 * = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.421	1.166	1.418	1.373	1.291	.974	.607

Based on analysis period peak consumptive use

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.574	1.197	1.426	1.391	1.291	.987	.625

Irrigation Water Requirements Analysis
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Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
North Area: Water Right 37-1151D (reduced number of ditches)
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 72.MARSH-BRUN

Irrigation System Efficiency Analysis: FURROW FLD.R
Furrow Irrigation-> 24.Hours @ 3.0gpm on 365.ft @ .020ft/ft
CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN --- 26.9 26.9 26.9 26.9 26.9 26.9 26.9

Note the following symbol meanings
@@@ = Water did not reach end of furrow
* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 .634 1.757 2.136 2.068 1.945 1.468 .914

Based on analysis period peak consumptive use

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 .865 1.804 2.148 2.096 1.945 1.487 .942

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:45:24

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
North Area: Water Right 37-1151D (reduced number of ditches)
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 72.MARSH-BRUN

Irrigation System Efficiency Analysis: FURROW FLD.S
Furrow Irrigation-> 24.Hours @ 4.0gpm on 838.ft @ .013ft/ft

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	---	46.3	46.3	46.3	46.3	46.3	46.3	46.3

Note the following symbol meanings
 @@@ = Water did not reach end of furrow
 * = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.368	1.021	1.240	1.201	1.130	.853	.531

Based on analysis period peak consumptive use

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.502	1.047	1.248	1.217	1.130	.863	.547

Irrigation Water Requirements Analysis

Version 1.00

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Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
North Area: Water Right 37-1151D (reduced number of ditches)
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 72.MARSH-BRUN

Irrigation System Efficiency Analysis: FURROW FLD.T

Furrow Irrigation-> 24.Hours @ 3.0gpm on 305.ft @ .013ft/ft

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	---	22.4	22.4	22.4	22.4	22.4	22.4	22.4

Note the following symbol meanings

@@@ = Water did not reach end of furrow

* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.759	2.103	2.556	2.475	2.328	1.757	1.094

Based on analysis period peak consumptive use

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	1.035	2.158	2.571	2.508	2.328	1.779	1.127

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:45:24

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
North Area: Water Right 37-1151D (reduced number of ditches)
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 72.MARSH-BRUN

Irrigation System Efficiency Analysis: FURROW FLD.U
Furrow Irrigation-> 24.Hours @ 3.0gpm on 645.ft @ .028ft/ft

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	---	47.5	47.5	47.5	47.5	47.5	47.5	47.5

Note the following symbol meanings

@@@ = Water did not reach end of furrow

* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.359	.995	1.209	1.170	1.101	.831	.517

Based on analysis period peak consumptive use

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.489	1.021	1.216	1.186	1.101	.841	.533

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:45:24

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
North Area: Water Right 37-1151D (reduced number of ditches)
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 72.MARSH-BRUN

Irrigation System Efficiency Analysis: FURROW FLD.V
Furrow Irrigation-> 24.Hours @ 3.0gpm on 432.ft @ .025ft/ft

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	---	31.8	31.8	31.8	31.8	31.8	31.8	31.8

Note the following symbol meanings
 @@@ = Water did not reach end of furrow
 * = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.536	1.485	1.805	1.747	1.643	1.240	.772

Based on analysis period peak consumptive use

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.731	1.524	1.815	1.771	1.643	1.256	.796

Irrigation Water Requirements Analysis

Version 1.00

2008-02-18 @ 13:45:24

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
North Area: Water Right 37-1151D (reduced number of ditches)
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 72.MARSH-BRUN

Irrigation System Efficiency Analysis: FURROW FLD.W
Furrow Irrigation-> 24.Hours @ 4.0gpm on 577.ft @ .010ft/ft
CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN --- 31.8 31.8 31.8 31.8 31.8 31.8 31.8

Note the following symbol meanings

@@@ = Water did not reach end of furrow

* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 .535 1.482 1.802 1.744 1.641 1.238 .771

Based on analysis period peak consumptive use

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 .729 1.521 1.812 1.768 1.641 1.254 .794

Irrigation Water Requirements Analysis

Version 1.00

2008-02-18 @ 13:45:24

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
North Area: Water Right 37-1151D (reduced number of ditches)
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 72.MARSH-BRUN

Irrigation System Efficiency Analysis: FURROW FLD.X

Furrow Irrigation-> 24.Hours @ .3.0gpm on 310.ft @ .029ft/ft

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	---	22.8	22.8	22.8	22.8	22.8	22.8	22.8

Note the following symbol meanings

@@@ = Water did not reach end of furrow

* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.747	2.069	2.515	2.435	2.290	1.729	1.076

Based on analysis period peak consumptive use

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	1.018	2.124	2.529	2.468	2.290	1.750	1.109

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:45:24

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
North Area: Water Right 37-1151D (reduced number of ditches)
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 72.MARSH-BRUN

Irrigation System Efficiency Analysis: FURROW FLD.Y
Furrow Irrigation-> 24.Hours @ 3.0gpm on 300.ft @ .021ft/ft
CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN --- 22.1 22.1 22.1 22.1 22.1 22.1 22.1

Note the following symbol meanings
@@@ = Water did not reach end of furrow
* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 .771 2.138 2.599 2.516 2.367 1.786 1.112

Based on analysis period peak consumptive use

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 1.052 2.194 2.614 2.550 2.367 1.809 1.146

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:45:24

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
North Area: Water Right 37-1151D (reduced number of ditches)
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 72.MARSH-BRUN

Irrigation System Efficiency Analysis: FURROW FLD.Z
Furrow Irrigation-> 24.Hours @ 4.0gpm on 592.ft @ .028ft/ft
CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN --- 32.7 32.7 32.7 32.7 32.7 32.7 32.7

Note the following symbol meanings
@@@ = Water did not reach end of furrow
* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 .521 1.445 1.756 1.700 1.599 1.207 .751

Based on analysis period peak consumptive use

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 .711 1.483 1.766 1.723 1.599 1.222 .774

Irrigation Water Requirements Analysis

Version 1.00

2008-02-18 @ 13:45:24

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
North Area: Water Right 37-1151D (reduced number of ditches)
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 82.MOON-EARCR

Irrigation System Efficiency Analysis: FURROW FLD.P
Furrow Irrigation-> 48.Hours @ 7.0gpm on 1830.ft @ .012ft/ft
CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN --- 17.5 17.5 17.5 17.5 17.5 17.5 17.5

Note the following symbol meanings

@@@ = Water did not reach end of furrow

* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 .975 2.702 3.284 3.180 2.991 2.257 1.405

Based on analysis period peak consumptive use

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 1.330 2.773 3.303 3.223 2.991 2.286 1.448

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:45:24

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
North Area: Water Right 37-1151D (reduced number of ditches)
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 82.MOON-EARCR

Irrigation System Efficiency Analysis: FURROW FLD.Q
Furrow Irrigation-> 24.Hours @ 3.0gpm on 550.ft @ .036ft/ft
CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN --- 24.5 24.5 24.5 24.5 24.5 24.5 24.5

Note the following symbol meanings
@@@ = Water did not reach end of furrow
* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 .695 1.926 2.341 2.267 2.132 1.609 1.002

Based on analysis period peak consumptive use

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 .948 1.977 2.355 2.298 2.132 1.630 1.032

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:45:24

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
North Area: Water Right 37-1151D (reduced number of ditches)
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 82.MOON-EARCR

Irrigation System Efficiency Analysis: FURROW FLD.R
Furrow Irrigation-> 24.Hours @ 3.0gpm on 365.ft @ .020ft/ft
CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	---	16.3	16.3	16.3	16.3	16.3	16.3	16.3

Note the following symbol meanings
@@@ = Water did not reach end of furrow
* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	.000	1.047	2.903	3.528	3.416	3.213	2.425	1.510

Based on analysis period peak consumptive use

CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	.000	1.429	2.979	3.549	3.462	3.213	2.456	1.556

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:45:24

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
North Area: Water Right 37-1151D (reduced number of ditches)
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 82.MOON-EARCR

Irrigation System Efficiency Analysis: FURROW FLD.T
Furrow Irrigation-> 24.Hours @ 3.0gpm on 305.ft @ .013ft/ft
CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	---	13.6	13.6	13.6	13.6	13.6	13.6	13.6

Note the following symbol meanings
@@@ = Water did not reach end of furrow
* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	.000	1.253	3.474	4.222	4.088	3.845	2.902	1.807

Based on analysis period peak consumptive use

CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	.000	1.710	3.565	4.247	4.143	3.845	2.939	1.862

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:45:24

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
North Area: Water Right 37-1151D (reduced number of ditches)
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 82.MOON-EARCR

Irrigation System Efficiency Analysis: FURROW FLD.U
Furrow Irrigation-> 24.Hours @ 3.0gpm on 645.ft @ .028ft/ft
CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN --- 28.7 28.7 28.7 28.7 28.7 28.7 28.7

Note the following symbol meanings
@@@ = Water did not reach end of furrow
* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.593	1.643	1.997	1.933	1.818	1.372	.854

Based on analysis period peak consumptive use

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.808	1.686	2.008	1.959	1.818	1.390	.880

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:45:24

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
North Area: Water Right 37-1151D (reduced number of ditches)
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 82.MOON-EARCR

Irrigation System Efficiency Analysis: FURROW FLD.V
Furrow Irrigation-> 24.Hours @ 3.0gpm on 432.ft @ .025ft/ft
CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN --- 19.2 19.2 19.2 19.2 19.2 19.2 19.2

Note the following symbol meanings
@@@ = Water did not reach end of furrow
* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 .885 2.453 2.981 2.887 2.715 2.049 1.276

Based on analysis period peak consumptive use

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 1.207 2.517 2.998 2.925 2.715 2.075 1.314

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:45:24

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
North Area: Water Right 37-1151D (reduced number of ditches)
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 82.MOON-EARCR

Irrigation System Efficiency Analysis: FURROW FLD.X
Furrow Irrigation-> 24.Hours @ 3.0gpm on 310.ft @ .029ft/ft
CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN --- 13.8 13.8 13.8 13.8 13.8 13.8 13.8

Note the following symbol meanings
@@@ = Water did not reach end of furrow
* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 1.233 3.418 4.154 4.023 3.783 2.855 1.778

Based on analysis period peak consumptive use

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 1.682 3.508 4.178 4.076 3.783 2.891 1.832

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:45:24

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
North Area: Water Right 37-1151D (reduced number of ditches)
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 82.MOON-EARCR

Irrigation System Efficiency Analysis: FURROW FLD.Y
Furrow Irrigation-> 24.Hours @ 3.0gpm on 300.ft @ .021ft/ft
CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN --- 13.4 13.4 13.4 13.4 13.4 13.4 13.4

Note the following symbol meanings
@@@ = Water did not reach end of furrow
* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 1.274 3.532 4.293 4.157 3.909 2.950 1.837

Based on analysis period peak consumptive use

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 1.738 3.625 4.317 4.212 3.909 2.988 1.893

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:45:24

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
North Area: Water Right 37-1151D (reduced number of ditches)
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 82.MOON-EARCR

Irrigation System Efficiency Analysis: FURROW FLD.Z
Furrow Irrigation-> 24.Hours @ 4.0gpm on 592.ft @ .028ft/ft
CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	---	19.8	19.8	19.8	19.8	19.8	19.8	19.8

Note the following symbol meanings
@@@ = Water did not reach end of furrow
* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.861	2.386	2.900	2.809	2.641	1.994	1.241

Based on analysis period peak consumptive use

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	1.174	2.449	2.917	2.846	2.641	2.019	1.279

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:45:24

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
North Area: Water Right 37-1151D (reduced number of ditches)
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 102.SIMONTON

Irrigation System Efficiency Analysis: FURROW FLD.P
Furrow Irrigation-> 48.Hours @ 7.0gpm on 1830.ft @ .012ft/ft
CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN --- 20.8 20.8 20.8 20.8 20.8 20.8 20.8

Note the following symbol meanings
@@@ = Water did not reach end of furrow
* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 .819 2.270 2.759 2.672 2.513 1.896 1.181

Based on analysis period peak consumptive use

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 1.117 2.330 2.775 2.707 2.513 1.920 1.217

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:45:24

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
North Area: Water Right 37-1151D (reduced number of ditches)
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 102.SIMONTON

Irrigation System Efficiency Analysis: FURROW FLD.Q
Furrow Irrigation-> 24.Hours @ 3.0gpm on 550.ft @ .036ft/ft
CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN --- 29.2 29.2 29.2 29.2 29.2 29.2 29.2

Note the following symbol meanings
@@@ = Water did not reach end of furrow
* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 .584 1.619 1.967 1.905 1.791 1.352 .842

Based on analysis period peak consumptive use

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 .797 1.661 1.979 1.930 1.791 1.369 .867

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:45:24

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
North Area: Water Right 37-1151D (reduced number of ditches)
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 102.SIMONTON

Irrigation System Efficiency Analysis: FURROW FLD.R
Furrow Irrigation-> 24.Hours @ 3.0gpm on 365.ft @ .020ft/ft
CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	---	19.4	19.4	19.4	19.4	19.4	19.4	19.4

Note the following symbol meanings
@@@ = Water did not reach end of furrow
* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	.000	.880	2.439	2.964	2.870	2.699	2.037	1.269

Based on analysis period peak consumptive use

CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	.000	1.200	2.503	2.981	2.909	2.699	2.063	1.307

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:45:24

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
North Area: Water Right 37-1151D (reduced number of ditches)
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 102.SIMONTON

Irrigation System Efficiency Analysis: FURROW FLD.S
Furrow Irrigation-> 24.Hours @ 4.0gpm on 838.ft @ .013ft/ft

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	---	33.3	33.3	33.3	33.3	33.3	33.3	33.3

Note the following symbol meanings
 @@@ = Water did not reach end of furrow
 * = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.511	1.416	1.721	1.667	1.568	1.183	.737

Based on analysis period peak consumptive use

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	.697	1.454	1.731	1.689	1.568	1.198	.759

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:45:24

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
North Area: Water Right 37-1151D (reduced number of ditches)
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 102.SIMONTON

Irrigation System Efficiency Analysis: FURROW FLD.V
Furrow Irrigation-> 24.Hours @ 3.0gpm on 432.ft @ .025ft/ft
CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN --- 22.9 22.9 22.9 22.9 22.9 22.9 22.9

Note the following symbol meanings
@@@ = Water did not reach end of furrow
* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 .743 2.061 2.504 2.425 2.281 1.721 1.072

Based on analysis period peak consumptive use

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 1.014 2.115 2.519 2.458 2.281 1.743 1.104

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:45:24

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
North Area: Water Right 37-1151D (reduced number of ditches)
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 102.SIMONTON

Irrigation System Efficiency Analysis: FURROW FLD.W
Furrow Irrigation-> 24.Hours @ 4.0gpm on 577.ft @ .010ft/ft
CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	---	22.9	22.9	22.9	22.9	22.9	22.9	22.9

Note the following symbol meanings
@@@ = Water did not reach end of furrow
* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	.000	.742	2.057	2.500	2.421	2.277	1.718	1.070

Based on analysis period peak consumptive use

CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	.000	1.012	2.111	2.515	2.453	2.277	1.740	1.102

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:45:24

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
North Area: Water Right 37-1151D (reduced number of ditches)
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 102.SIMONTON

Irrigation System Efficiency Analysis: FURROW FLD.X
Furrow Irrigation-> 24.Hours @ 3.0gpm on 310.ft @ .029ft/ft
CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN --- 16.4 16.4 16.4 16.4 16.4 16.4 16.4

Note the following symbol meanings
@@@ = Water did not reach end of furrow
* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 1.036 2.872 3.490 3.379 3.178 2.399 1.494

Based on analysis period peak consumptive use

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 1.413 2.947 3.510 3.425 3.178 2.429 1.539

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:45:24

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
North Area: Water Right 37-1151D (reduced number of ditches)
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 102.SIMONTON

Irrigation System Efficiency Analysis: FURROW FLD.Z
Furrow Irrigation-> 24.Hours @ 4.0gpm on 592.ft @ .028ft/ft
CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	---	23.5	23.5	23.5	23.5	23.5	23.5	23.5

Note the following symbol meanings

@@@ = Water did not reach end of furrow

* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	.000	.723	2.005	2.437	2.360	2.219	1.675	1.043

Based on analysis period peak consumptive use

CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	.000	.987	2.058	2.451	2.391	2.219	1.696	1.074

Irrigation Water Requirements Analysis
Version 1.25
2008-02-18 @ 13:45:24

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
North Area: Water Right 37-1151D (reduced number of ditches)
C.G. Brockway, Brockway Engineering

Overall Project On-Farm Diversion Requirement

With a 50.0% Water Requirement Probability Level

Based on analysis period irrigation requirement

CROP	Total ac-ft	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	2667.	.000	.618	1.712	2.081	2.015	1.895	1.431	.891
*Entire Project	2667.	.000	.618	1.712	2.081	2.015	1.895	1.431	.891

Based on analysis period peak consumptive use

CROP	Total arces	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	318.	.000	.843	1.757	2.093	2.042	1.895	1.449	.918
*Entire Project	318.	.000	.843	1.757	2.093	2.042	1.895	1.449	.918

Irrigation Water Requirements Analysis
Version 1.25
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Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
North Area: Water Right 37-1151D (reduced number of ditches)
C.G. Brockway, Brockway Engineering

Fraction of Soil Type Area served by Canal/Lateral Segment

Canal\Soil Class	01	02	03	04	05
Ditch 32	.000	.122	.196	.000	.286
Ditch 31	.000	.010	.069	.000	.100
Ditch 30	.000	.113	.000	.000	.010
Ditch 29	.000	.000	.000	.000	.000
Ditch 28	.000	.090	.132	.000	.065
Ditch 27	.146	.016	.008	.000	.000
Ditch 26	.000	.054	.325	.000	.000
Ditch 25	.714	.143	.006	.000	.001
Ditch 24	.092	.038	.000	.000	.258
Ditch 23	.048	.039	.081	.000	.090
Ditch 22	.000	.056	.181	.000	.147
Ditch 20-21	.000	.079	.001	.000	.043
Ditch 18-19	.000	.121	.000	.000	.000
Ditch 16-17	.000	.119	.000	.000	.000
Effective.Div	.000	.000	.000	.000	.000

Table Soil Type Key

01 - 20.BRUNEEL	02 - 72.MARSH-BRUN	03 - 82.MOON-EARCR
04 - 88.PEAVEY-SIM	05 - 102.SIMONTON	

Covers Ditch Segments
from North END of Polli
to end of ditches @
Guy Cr Area.
(center of Sec 34)

Irrigation Water Requirements Analysis
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Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
North Area: Water Right 37-1151D (reduced number of ditches)
C.G. Brockway, Brockway Engineering

Canal/Lateral Discharge Summary
(cubic feet per second)

Canal/Lateral	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Ditch 32	**** Seepage Rate: .40 cfs/mi or .27 cfs ****							

Based on analysis period irrigation requirement

DS Delivery	.0	.0	.0	.0	.0	.0	.0	.0
On-Farm Div.	.0	.6	1.7	2.1	2.0	1.9	1.4	.9
Seepage Loss	.0	.3	.3	.3	.3	.3	.3	.3
US Div. Req.	.0	.9	2.0	2.4	2.3	2.2	1.7	1.2

Based on analysis period peak consumptive use

DS Delivery	.0	.0	.0	.0	.0	.0	.0	.0
On-Farm Div.	.0	.9	1.8	2.1	2.1	1.9	1.5	.9
Seepage Loss	.0	.3	.3	.3	.3	.3	.3	.3
US Div. Req.	.0	1.1	2.0	2.4	2.3	2.2	1.7	1.2

Ditch 31	**** Seepage Rate: .40 cfs/mi or .17 cfs ****							
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Based on analysis period irrigation requirement

DS Delivery	.0	.9	2.0	2.4	2.3	2.2	1.7	1.2
On-Farm Div.	.0	.1	.4	.5	.5	.4	.3	.2
Seepage Loss	.0	.2	.2	.2	.2	.2	.2	.2
US Div. Req.	.0	1.2	2.6	3.0	2.9	2.8	2.2	1.5

Based on analysis period peak consumptive use

DS Delivery	.0	1.1	2.0	2.4	2.3	2.2	1.7	1.2
On-Farm Div.	.0	.2	.4	.5	.5	.4	.3	.2
Seepage Loss	.0	.2	.2	.2	.2	.2	.2	.2
US Div. Req.	.0	1.5	2.6	3.0	3.0	2.8	2.2	1.6

Ditch 30	**** Seepage Rate: .40 cfs/mi or .18 cfs ****							
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Based on analysis period irrigation requirement

DS Delivery	.0	.0	.0	.0	.0	.0	.0	.0
On-Farm Div.	.0	.3	.7	.9	.9	.8	.6	.4
Seepage Loss	.0	.2	.2	.2	.2	.2	.2	.2
US Div. Req.	.0	.4	.9	1.1	1.0	1.0	.8	.6

Based on analysis period peak consumptive use

DS Delivery	.0	.0	.0	.0	.0	.0	.0	.0
On-Farm Div.	.0	.4	.7	.9	.9	.8	.6	.4
Seepage Loss	.0	.2	.2	.2	.2	.2	.2	.2
US Div. Req.	.0	.5	.9	1.1	1.0	1.0	.8	.6

Ditch 29 **** Seepage Rate: .40 cfs/mi or .08 cfs ****

Based on analysis period irrigation requirement

DS Delivery	.0	1.6	3.5	4.1	4.0	3.8	3.0	2.1
On-Farm Div.	.0	.0	.0	.0	.0	.0	.0	.0
Seepage Loss	.0	.1	.1	.1	.1	.1	.1	.1
US Div. Req.	.0	1.7	3.6	4.2	4.1	3.9	3.1	2.2

Based on analysis period peak consumptive use

DS Delivery	.0	2.0	3.5	4.1	4.0	3.8	3.0	2.1
On-Farm Div.	.0	.0	.0	.0	.0	.0	.0	.0
Seepage Loss	.0	.1	.1	.1	.1	.1	.1	.1
US Div. Req.	.0	2.1	3.6	4.2	4.1	3.9	3.1	2.2

Ditch 28 **** Seepage Rate: .40 cfs/mi or .36 cfs ****

Based on analysis period irrigation requirement

DS Delivery	.0	.0	.0	.0	.0	.0	.0	.0
On-Farm Div.	.0	.4	1.1	1.3	1.3	1.2	.9	.6
Seepage Loss	.0	.4	.4	.4	.4	.4	.4	.4
US Div. Req.	.0	.7	1.4	1.7	1.6	1.5	1.2	.9

Based on analysis period peak consumptive use

DS Delivery	.0	.0	.0	.0	.0	.0	.0	.0
On-Farm Div.	.0	.5	1.1	1.3	1.3	1.2	.9	.6
Seepage Loss	.0	.4	.4	.4	.4	.4	.4	.4
US Div. Req.	.0	.9	1.5	1.7	1.6	1.5	1.3	.9

Ditch 27 **** Seepage Rate: .40 cfs/mi or .04 cfs ****

Based on analysis period irrigation requirement

DS Delivery	.0	.7	1.4	1.7	1.6	1.5	1.2	.9
On-Farm Div.	.0	.1	.2	.2	.2	.2	.1	.1
Seepage Loss	.0	.0	.0	.0	.0	.0	.0	.0
US Div. Req.	.0	.8	1.6	1.9	1.8	1.8	1.4	1.0

Based on analysis period peak consumptive use

DS Delivery	.0	.9	1.5	1.7	1.6	1.5	1.3	.9
On-Farm Div.	.0	.1	.2	.2	.2	.2	.1	.1
Seepage Loss	.0	.0	.0	.0	.0	.0	.0	.0
US Div. Req.	.0	1.0	1.7	1.9	1.9	1.8	1.4	1.1

Ditch 26 **** Seepage Rate: .40 cfs/mi or .41 cfs ****

Based on analysis period irrigation requirement

DS Delivery	.0	.0	.0	.0	.0	.0	.0	.0
On-Farm Div.	.0	.5	1.4	1.7	1.6	1.5	1.2	.7
Seepage Loss	.0	.4	.4	.4	.4	.4	.4	.4
US Div. Req.	.0	.9	1.8	2.1	2.0	1.9	1.6	1.1

Based on analysis period peak consumptive use

DS Delivery	.0	.0	.0	.0	.0	.0	.0	.0
On-Farm Div.	.0	.7	1.4	1.7	1.6	1.5	1.2	.7
Seepage Loss	.0	.4	.4	.4	.4	.4	.4	.4
US Div. Req.	.0	1.1	1.8	2.1	2.1	1.9	1.6	1.2

Ditch 25 **** Seepage Rate: .40 cfs/mi or .20 cfs ****

Based on analysis period irrigation requirement

DS Delivery	.0	.9	1.8	2.1	2.0	1.9	1.6	1.1
On-Farm Div.	.0	.4	1.1	1.3	1.3	1.2	.9	.6
Seepage Loss	.0	.2	.2	.2	.2	.2	.2	.2
US Div. Req.	.0	1.5	3.1	3.6	3.5	3.3	2.7	1.9

Based on analysis period peak consumptive use

DS Delivery	.0	1.1	1.8	2.1	2.1	1.9	1.6	1.2
On-Farm Div.	.0	.5	1.1	1.3	1.3	1.2	.9	.6
Seepage Loss	.0	.2	.2	.2	.2	.2	.2	.2
US Div. Req.	.0	1.8	3.1	3.6	3.5	3.3	2.7	1.9

Ditch 24 **** Seepage Rate: .40 cfs/mi or .22 cfs ****

Based on analysis period irrigation requirement

DS Delivery	.0	1.5	3.1	3.6	3.5	3.3	2.7	1.9
On-Farm Div.	.0	.2	.6	.7	.7	.6	.5	.3
Seepage Loss	.0	.2	.2	.2	.2	.2	.2	.2
US Div. Req.	.0	1.9	3.8	4.5	4.4	4.2	3.3	2.4

Based on analysis period peak consumptive use

DS Delivery	.0	1.8	3.1	3.6	3.5	3.3	2.7	1.9
On-Farm Div.	.0	.3	.6	.7	.7	.6	.5	.3
Seepage Loss	.0	.2	.2	.2	.2	.2	.2	.2
US Div. Req.	.0	2.3	3.9	4.5	4.4	4.2	3.4	2.4

Ditch 23 **** Seepage Rate: .40 cfs/mi or .17 cfs ****

Based on analysis period irrigation requirement

DS Delivery	.0	.0	.0	.0	.0	.0	.0	.0
On-Farm Div.	.0	.2	.6	.8	.7	.7	.5	.3
Seepage Loss	.0	.2	.2	.2	.2	.2	.2	.2
US Div. Req.	.0	.4	.8	.9	.9	.9	.7	.5

Based on analysis period peak consumptive use

DS Delivery	.0	.0	.0	.0	.0	.0	.0	.0
On-Farm Div.	.0	.3	.6	.8	.7	.7	.5	.3
Seepage Loss	.0	.2	.2	.2	.2	.2	.2	.2
US Div. Req.	.0	.5	.8	.9	.9	.9	.7	.5

Ditch 22 **** Seepage Rate: .40 cfs/mi or .19 cfs ****

Based on analysis period irrigation requirement

DS Delivery	.0	.4	.8	.9	.9	.9	.7	.5
On-Farm Div.	.0	.4	1.1	1.3	1.3	1.2	.9	.6
Seepage Loss	.0	.2	.2	.2	.2	.2	.2	.2
US Div. Req.	.0	1.0	2.1	2.5	2.4	2.3	1.8	1.3

Based on analysis period peak consumptive use

DS Delivery	.0	.5	.8	.9	.9	.9	.7	.5
On-Farm Div.	.0	.5	1.1	1.3	1.3	1.2	.9	.6
Seepage Loss	.0	.2	.2	.2	.2	.2	.2	.2
US Div. Req.	.0	1.2	2.1	2.5	2.4	2.3	1.8	1.3

Ditch 20-21 **** Seepage Rate: .40 cfs/mi or .22 cfs ****

Based on analysis period irrigation requirement

DS Delivery	.0	1.0	2.1	2.5	2.4	2.3	1.8	1.3
On-Farm Div.	.0	.2	.6	.7	.6	.6	.5	.3
Seepage Loss	.0	.2	.2	.2	.2	.2	.2	.2
US Div. Req.	.0	1.4	2.9	3.4	3.3	3.1	2.5	1.8

Based on analysis period peak consumptive use

DS Delivery	.0	1.2	2.1	2.5	2.4	2.3	1.8	1.3
On-Farm Div.	.0	.3	.6	.7	.7	.6	.5	.3
Seepage Loss	.0	.2	.2	.2	.2	.2	.2	.2
US Div. Req.	.0	1.7	2.9	3.4	3.3	3.1	2.5	1.8

Ditch 18-19 **** Seepage Rate: .40 cfs/mi or .22 cfs ****

Based on analysis period irrigation requirement

DS Delivery	.0	.0	.0	.0	.0	.0	.0	.0
On-Farm Div.	.0	.3	.8	.9	.9	.8	.6	.4
Seepage Loss	.0	.2	.2	.2	.2	.2	.2	.2
US Div. Req.	.0	.5	1.0	1.1	1.1	1.1	.9	.6

Based on analysis period peak consumptive use

DS Delivery	.0	.0	.0	.0	.0	.0	.0	.0
On-Farm Div.	.0	.4	.8	.9	.9	.8	.6	.4
Seepage Loss	.0	.2	.2	.2	.2	.2	.2	.2
US Div. Req.	.0	.6	1.0	1.2	1.1	1.1	.9	.6

Ditch 16-17 **** Seepage Rate: .40 cfs/mi or .32 cfs ****

Based on analysis period irrigation requirement

DS Delivery	.0	.0	.0	.0	.0	.0	.0	.0
On-Farm Div.	.0	.3	.8	.9	.9	.8	.6	.4
Seepage Loss	.0	.3	.3	.3	.3	.3	.3	.3
US Div. Req.	.0	.6	1.1	1.2	1.2	1.2	1.0	.7

Based on analysis period peak consumptive use

DS Delivery	.0	.0	.0	.0	.0	.0	.0	.0
On-Farm Div.	.0	.4	.8	.9	.9	.8	.6	.4
Seepage Loss	.0	.3	.3	.3	.3	.3	.3	.3
US Div. Req.	.0	.7	1.1	1.2	1.2	1.2	1.0	.7

Effective.Div **** Seepage Rate: .00 cfs/mi or .00 cfs ****

Based on analysis period irrigation requirement

DS Delivery	.0	7.0	13.9	16.3	15.9	15.1	12.1	8.7
On-Farm Div.	.0	.0	.0	.0	.0	.0	.0	.0
Seepage Loss	.0	.0	.0	.0	.0	.0	.0	.0
US Div. Req.	.0	7.0	13.9	16.3	15.9	15.1	12.1	8.7

Based on analysis period peak consumptive use

DS Delivery	.0	8.4	14.2	16.4	16.0	15.1	12.3	8.9
On-Farm Div.	.0	.0	.0	.0	.0	.0	.0	.0
Seepage Loss	.0	.0	.0	.0	.0	.0	.0	.0
US Div. Req.	.0	8.4	14.2	16.4	16.0	15.1	12.3	8.9

Irrigation Water Requirements Analysis
Version 1.25
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Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exc, No Adjust
North Area: Water Right 37-1151D (reduced number of ditches)
C.G. Brockway, Brockway Engineering

PROJECT IRRIGATION DIVERSION REQUIREMENTS
SUMMARY

Total Irrigated Area: 317.60 acres

Based on analysis period irrigation requirement

Max Project Diversion: 16.28 cfs(2.563 mi/ac)

Based on analysis period peak consumptive use

Peak Project Diversion: 16.36 cfs(2.575 mi/ac)

$2.563 \text{ mi/ac} \times .02 \text{ cfs/mi}$
 $.05126 \text{ cfs/ac}$
 $\times 317.6 \text{ ac}$
 16.28 cfs.

Appendix E

Water Requirement Model Output Middle Area

Irrigation Water Requirements Analysis

Version 1.00

2008-02-18 @ 13:48:05

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exceedance, No A
Mid Area: Water Rights 37-1151B, 37-1212

C.G. Brockway, Brockway Engineering

Crop Water Requirements Datafile: picabo20.cir
Probability Level for Analysis: 50.0
Number of Canal/Lateral Segments: 4
Number of Irrigation Methods: 2
Number of Soil Types: 4
Number of Crops: 1
Number of Analysis Periods: 8

CANAL/LATERAL INFORMATION

#	Name	Segment	Upstream Length miles	Width feet	F-Area sq-ft	Seepage Method
1	Ditch 35	4	.79	4.0	2.0	Worstell i= 1.50 ft/day
2	Ditch 34	3	.83	4.0	2.0	Worstell i= 1.50 ft/day
3	Ditch 33	4	.17	4.0	2.0	Worstell i= 1.50 ft/day
4	Effective.Div	0	.00	.0	.0	Specified S= .00 cfs/mi

1.79 mi

} Guy Cr

IRRIGATION SYSTEM INFORMATION

Name	Assumed Efficiency	Set Time	Run Flow	Slope-Furrows Length	Width-Others
FURROW FLD.AA ✓	50.0	24.	3.0	300.	.021
FURROW FLD.AB ✓	50.0	24.	3.0	592.	.028

SOILS INFORMATION

Name	Intake Family	Water Holding Capacity				
		1ft	2ft	3ft	4ft	5ft
72.MARSH-BRUN	2.0	2.11	4.08	5.45	6.77	7.40
82.MOON-EARCR	3.0	1.24	2.47	3.64	4.66	5.48
88.PEAVEY-SIM	2.0	1.97	4.08	5.50	6.34	7.18
111.WINU-GAIB	3.0	1.13	1.96	2.72	2.72	2.72

CROP SYSTEM INFORMATION

Name	Allowable Deficit	Furrow Spacing	Roughness
PASTURE MEAN	50.0	2.500	.100

Irrigation Water Requirements Analysis

Version 1.00

2008-02-18 @ 13:48:05

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exceedance, No A
Mid Area: Water Rights 37-1151B, 37-1212

C.G. Brockway, Brockway Engineering

CROP DISTRIBUTION FOR 72.MARSH-BRUN				by Irrigation System
Crop	Total	01	02	
PASTURE MEAN	52.8	32.5	20.3	

CROP DISTRIBUTION FOR 82.MOON-EARCR				by Irrigation System
Crop	Total	01	02	
PASTURE MEAN	1.0	.3	.7	

CROP DISTRIBUTION FOR 88.PEAVEY-SIM				by Irrigation System
Crop	Total	01	02	
PASTURE MEAN	1.4	.0	1.4	

CROP DISTRIBUTION FOR 111.WINU-GAIB				by Irrigation System
Crop	Total	01	02	
PASTURE MEAN	7.6	7.6	.0	

Irrigation System Key

01 - FURROW FLD.AA

02 - FURROW FLD.AB

Crop Irrigation Requirements (mm/day)

Title: Picabo CU from Allen & Robison (2007) - 20% Exceedance of 7-day Peak

[illegible]

Project/Farm Irrigation Water Requirement Analysis
Version 1.00

Crop Requirements (in/day)
Crop Rooting Depths (ft)

BASED ON NORMAL DISTRIBUTION

Adjusted Crop Water Requirements for 50.0% probability level
Total Mar Apr May Jun Jul Aug Sep Oct

				PASTURE MEAN						
---CU---	31.6	.041	.111	.231	.275	.268	.249	.190	.120	
---IR---	28.5	.037	.081	.225	.273	.265	.249	.188	.117	
Root Depth		.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	

CU Peak to Ave Ratio vs Application Depth Curve (11 pts)

App.Depth(in)	.61	1.06	1.51	2.12	2.73	3.63	4.54	5.60	6.36
	6.96	7.57							
Peak:Average	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	1.000	1.000							

Irrigation Water Requirements Analysis

Version 1.00

2008-02-18 @ 13:48:05

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exceedance, No A
Mid Area: Water Rights 37-1151B, 37-1212

C.G. Brockway, Brockway Engineering

Allowable Soil Water Deficit -- inches

50.0 Percent Probability Level of IR

	SOIL CATAGORY:	72.MARSH-BRUN							
Crop	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	
PASTURE MEAN	.00	2.04	2.04	2.04	2.04	2.04	2.04	2.04	

	SOIL CATAGORY:	82.MOON-EARCR							
Crop	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	
PASTURE MEAN	.00	1.24	1.24	1.24	1.24	1.24	1.24	1.24	

	SOIL CATAGORY:	88.PEAVEY-SIM							
Crop	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	
PASTURE MEAN	.00	2.04	2.04	2.04	2.04	2.04	2.04	2.04	

	SOIL CATAGORY:	111.WINU-GAIB							
Crop	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	
PASTURE MEAN	.00	.98	.98	.98	.98	.98	.98	.98	

Irrigation Water Requirements Analysis

Version 1.00

2008-02-18 @ 13:48:05

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exceedance, No A
Mid Area: Water Rights 37-1151B, 37-1212

C.G. Brockway, Brockway Engineering

Peak Consumptive Use based on Peak:Mean(ASWD)
50.0 Percent Probability Level of CU

		SOIL CATAGORY: 72.MARSH-BRUN							
Crop		Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN		.041	.111	.231	.275	.268	.249	.190	.120
		SOIL CATAGORY: 82.MOON-EARCR							
Crop		Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN		.041	.111	.231	.275	.268	.249	.190	.120
		SOIL CATAGORY: 88.PEAVEY-SIM							
Crop		Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN		.041	.111	.231	.275	.268	.249	.190	.120
		SOIL CATAGORY: 111.WINU-GAIB							
Crop		Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN		.041	.111	.231	.275	.268	.249	.190	.120

Irrigation Water Requirements Analysis
Version 1.00
2008-02-18 @ 13:48:05

Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exceedance, No A
Mid Area: Water Rights 37-1151B, 37-1212
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 72.MARSH-BRUN

Irrigation System Efficiency Analysis: FURROW FLD.AA
Furrow Irrigation-> 24.Hours @ 3.0gpm on 300.ft @ .021ft/ft
CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN --- 22.1 22.1 22.1 22.1 22.1 22.1 22.1

Note the following symbol meanings
@@@ = Water did not reach end of furrow
* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 .771 2.138 2.599 2.516 2.367 1.786 1.112

Based on analysis period peak consumptive use

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 1.052 2.194 2.614 2.550 2.367 1.809 1.146

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Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exceedance, No A
Mid Area: Water Rights 37-1151B, 37-1212
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 72.MARSH-BRUN

Irrigation System Efficiency Analysis: FURROW FLD.AB
Furrow Irrigation-> 24.Hours @ 3.0gpm on 592.ft @ .028ft/ft
CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	---	43.6	43.6	43.6	43.6	43.6	43.6	43.6

Note the following symbol meanings
@@@ = Water did not reach end of furrow
* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	.000	.391	1.084	1.317	1.275	1.199	.905	.564

Based on analysis period peak consumptive use

CROP
PASTURE MEAN

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	.000	.533	1.112	1.325	1.292	1.199	.917	.581

Irrigation Water Requirements Analysis

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Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exceedance, No A
Mid Area: Water Rights 37-1151B, 37-1212

C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 82.MOON-EARCR

Irrigation System Efficiency Analysis: FURROW FLD.AA

Furrow Irrigation-> 24.Hours @ 3.0gpm on 300.ft @ .021ft/ft

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	---	13.4	13.4	13.4	13.4	13.4	13.4	13.4

Note the following symbol meanings

@@@ = Water did not reach end of furrow

* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	1.274	3.532	4.293	4.157	3.909	2.950	1.837

Based on analysis period peak consumptive use

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	1.738	3.625	4.317	4.212	3.909	2.988	1.893

Irrigation Water Requirements Analysis
Version 1.00
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Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exceedance, No A
Mid Area: Water Rights 37-1151B, 37-1212
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 82.MOON-EARCR

Irrigation System Efficiency Analysis: FURROW FLD.AB
Furrow Irrigation-> 24.Hours @ 3.0gpm on 592.ft @ .028ft/ft
CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN --- 26.4 26.4 26.4 26.4 26.4 26.4 26.4

Note the following symbol meanings
@@@ = Water did not reach end of furrow
* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 .646 1.790 2.175 2.106 1.981 1.495 .931

Based on analysis period peak consumptive use

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 .881 1.837 2.188 2.135 1.981 1.514 .959

Irrigation Water Requirements Analysis
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Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exceedance, No A
Mid Area: Water Rights 37-1151B, 37-1212
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 88.PEAVEY-SIM

Irrigation System Efficiency Analysis: FURROW FLD.AB
Furrow Irrigation-> 24.Hours @ 3.0gpm on 592.ft @ .028ft/ft
CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN --- 43.6 43.6 43.6 43.6 43.6 43.6 43.6

Note the following symbol meanings
@@@ = Water did not reach end of furrow
* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 .391 1.084 1.317 1.275 1.199 .905 .564

Based on analysis period peak consumptive use

CROP Mar Apr May Jun Jul Aug Sep Oct
PASTURE MEAN .000 .533 1.112 1.325 1.292 1.199 .917 .581

Irrigation Water Requirements Analysis
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Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exceedance, No A
Mid Area: Water Rights 37-1151B, 37-1212
C.G. Brockway, Brockway Engineering

Irrigation System Analysis FOR SOIL 111.WINU-GAIB

Irrigation System Efficiency Analysis: FURROW FLD.AA
Furrow Irrigation-> 24.Hours @ 3.0gpm on 300.ft @ .021ft/ft

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	---	10.6	10.6	10.6	10.6	10.6	10.6	10.6

Note the following symbol meanings

@@@ = Water did not reach end of furrow

* = End-of-Furrow application insufficient

On-Farm Diversion Requirements -- miner inches/ac
With a 50.0 percent probability level

Based on analysis period irrigation requirement

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	1.606	4.451	5.410	5.238	4.926	3.718	2.315

Based on analysis period peak consumptive use

CROP	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
PASTURE MEAN	.000	2.190	4.568	5.441	5.308	4.926	3.765	2.385

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Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exceedance, No A
Mid Area: Water Rights 37-1151B, 37-1212
C.G. Brockway, Brockway Engineering

Overall Project On-Farm Diversion Requirement
With a 50.0% Water Requirement Probability Level

Based on analysis period irrigation requirement

CROP	Total ac-ft	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
			----- miners inches per ac. -----						
PASTURE MEAN	633.	.000	.742	2.056	2.499	2.420	2.276	1.718	1.070

*Entire Project	633.	.000	.742	2.056	2.499	2.420	2.276	1.718	1.070

Based on analysis period peak consumptive use

CROP	Total arces	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
			----- miners inches per ac. -----						
PASTURE MEAN	63.	.000	1.012	2.110	2.514	2.453	2.276	1.739	1.102

*Entire Project	63.	.000	1.012	2.110	2.514	2.453	2.276	1.739	1.102

Irrigation Water Requirements Analysis

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Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exceedance, No A
Mid Area: Water Rights 37-1151B, 37-1212

C.G. Brockway, Brockway Engineering

Fraction of Soil Type Area served by Canal/Lateral Segment

Canal\Soil Class	01	02	03	04
Ditch 35	.384	.676	1.000	.000
Ditch 34	.616	.324	.000	1.000
Ditch 33	.000	.000	.000	.000
Effective.Div	.000	.000	.000	.000

Table Soil Type Key

01 - 72.MARSH-BRUN

02 - 82.MOON-EARCR

03 - 88.PEAVEY-SIM

04 - 111.WINU-GAIB

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Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exceedance, No A
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C.G. Brockway, Brockway Engineering

Canal/Lateral Discharge Summary
(cubic feet per second)

Canal/Lateral	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Ditch 35	**** Seepage Rate: .40 cfs/mi or .32 cfs ****							

Based on analysis period irrigation requirement

DS Delivery	.0	.0	.0	.0	.0	.0	.0	.0
On-Farm Div.	.0	.3	.8	.9	.9	.8	.6	.4
Seepage Loss	.0	.3	.3	.3	.3	.3	.3	.3
US Div. Req.	.0	.6	1.1	1.2	1.2	1.2	1.0	.7

Based on analysis period peak consumptive use

DS Delivery	.0	.0	.0	.0	.0	.0	.0	.0
On-Farm Div.	.0	.4	.8	.9	.9	.8	.6	.4
Seepage Loss	.0	.3	.3	.3	.3	.3	.3	.3
US Div. Req.	.0	.7	1.1	1.3	1.2	1.2	1.0	.7

Ditch 34	**** Seepage Rate: .40 cfs/mi or .33 cfs ****							
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Based on analysis period irrigation requirement

DS Delivery	.0	.0	.0	.0	.0	.0	.0	.0
On-Farm Div.	.0	.7	1.8	2.2	2.1	2.0	1.5	.9
Seepage Loss	.0	.3	.3	.3	.3	.3	.3	.3
US Div. Req.	.0	1.0	2.2	2.5	2.5	2.3	1.9	1.3

Based on analysis period peak consumptive use

DS Delivery	.0	.0	.0	.0	.0	.0	.0	.0
On-Farm Div.	.0	.9	1.9	2.2	2.2	2.0	1.5	1.0
Seepage Loss	.0	.3	.3	.3	.3	.3	.3	.3
US Div. Req.	.0	1.2	2.2	2.6	2.5	2.3	1.9	1.3

Ditch 33	**** Seepage Rate: .40 cfs/mi or .07 cfs ****							
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Based on analysis period irrigation requirement

DS Delivery	.0	1.0	2.2	2.5	2.5	2.3	1.9	1.3
On-Farm Div.	.0	.0	.0	.0	.0	.0	.0	.0
Seepage Loss	.0	.1	.1	.1	.1	.1	.1	.1
US Div. Req.	.0	1.1	2.2	2.6	2.5	2.4	1.9	1.3

Based on analysis period peak consumptive use

DS Delivery	.0	1.2	2.2	2.6	2.5	2.3	1.9	1.3
On-Farm Div.	.0	.0	.0	.0	.0	.0	.0	.0
Seepage Loss	.0	.1	.1	.1	.1	.1	.1	.1
US Div. Req.	.0	1.3	2.3	2.6	2.6	2.4	1.9	1.4

Effective.Div **** Seepage Rate: .00 cfs/mi or .00 cfs ****

Based on analysis period irrigation requirement

DS Delivery	.0	1.7	3.3	3.9	3.8	3.6	2.9	2.1
On-Farm Div.	.0	.0	.0	.0	.0	.0	.0	.0
Seepage Loss	.0	.0	.0	.0	.0	.0	.0	.0
US Div. Req.	.0	1.7	3.3	3.9	3.8	3.6	2.9	2.1

Based on analysis period peak consumptive use

DS Delivery	.0	2.0	3.4	3.9	3.8	3.6	2.9	2.1
On-Farm Div.	.0	.0	.0	.0	.0	.0	.0	.0
Seepage Loss	.0	.0	.0	.0	.0	.0	.0	.0
US Div. Req.	.0	2.0	3.4	3.9	3.8	3.6	2.9	2.1

Irrigation Water Requirements Analysis
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Rock Creek IWR Analysis using Allen & Robison 7-day 20% Exceedance, No A
Mid Area: Water Rights 37-1151B, 37-1212
C.G. Brockway, Brockway Engineering

PROJECT IRRIGATION DIVERSION REQUIREMENTS
SUMMARY

Total Irrigated Area: 62.80 acres

Based on analysis period irrigation requirement

Max Project Diversion: 3.86 cfs(3.073 mi/ac)

Based on analysis period peak consumptive use

Peak Project Diversion: 3.88 cfs(3.088 mi/ac)