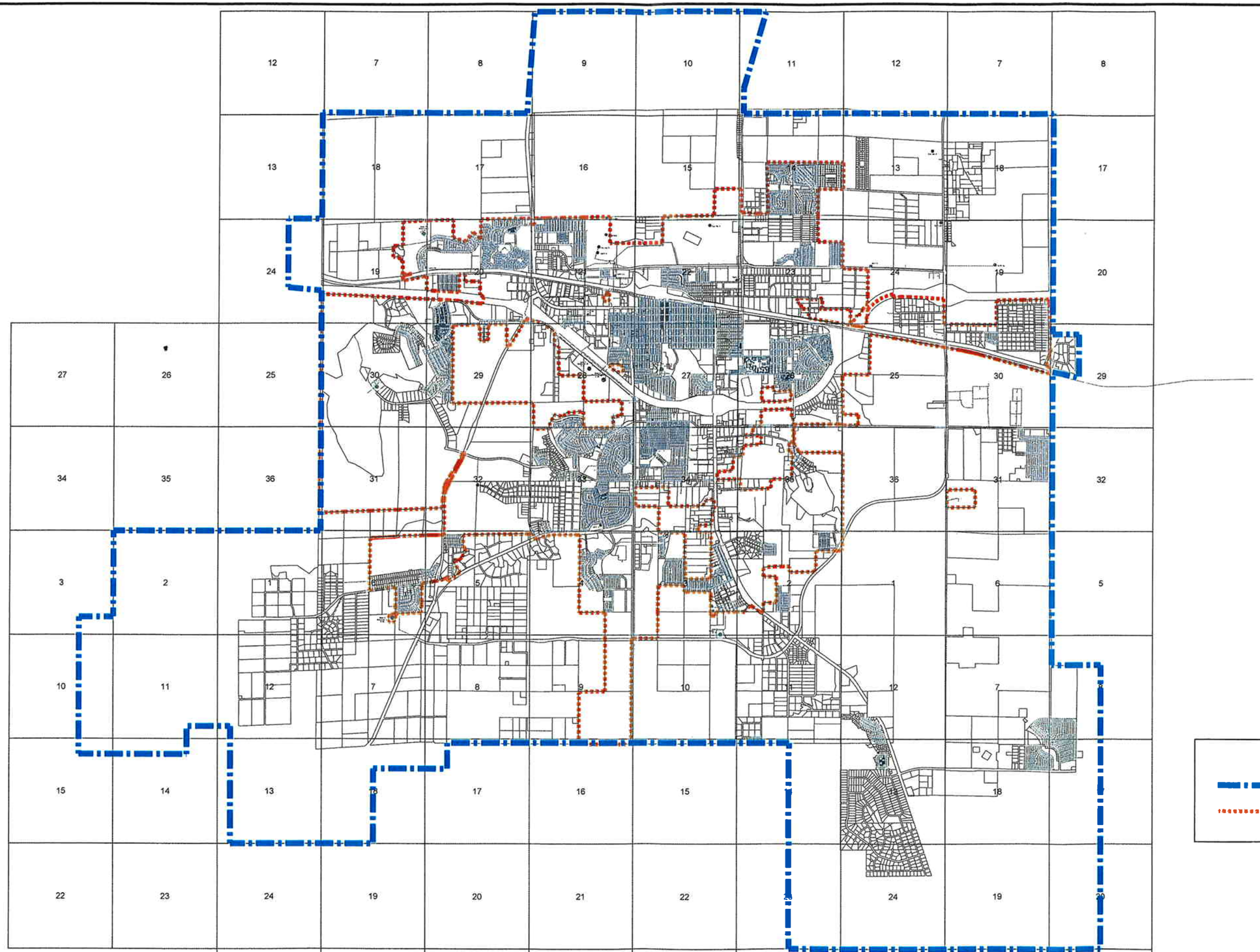


LEGEND

PDB BOUNDARY

EXISTING CITY LIMITS

MORRISON MAIERLE, INC.
An Employee-Owned Company

Engineers
Surveyors
Scientists
Planners

315 N. 25th Street
Suite 102
Billings MT 59101

Phone: (406) 656-6000
Fax: (406) 237-1201

COPYRIGHT MORRISON-MAIERLE, INC., 2007

DRAWN BY: RLL
CHK'D. BY: CMH
APPR. BY:
DATE: 02/20/07

GILLETTE

CITY OF GILLETTE LONG TERM
WATER SUPPLY STUDY

WYOMING

PDB OUTLINE

PROJECT NO.
4323.001

FIGURE NUMBER
FIG 2-1

V:\4323\ACAD\City of Gillete with PDB and City Limits Revised.dwg Plotted by rlarance on Jun/11/2007

FIGURE 3-1
Population Projections

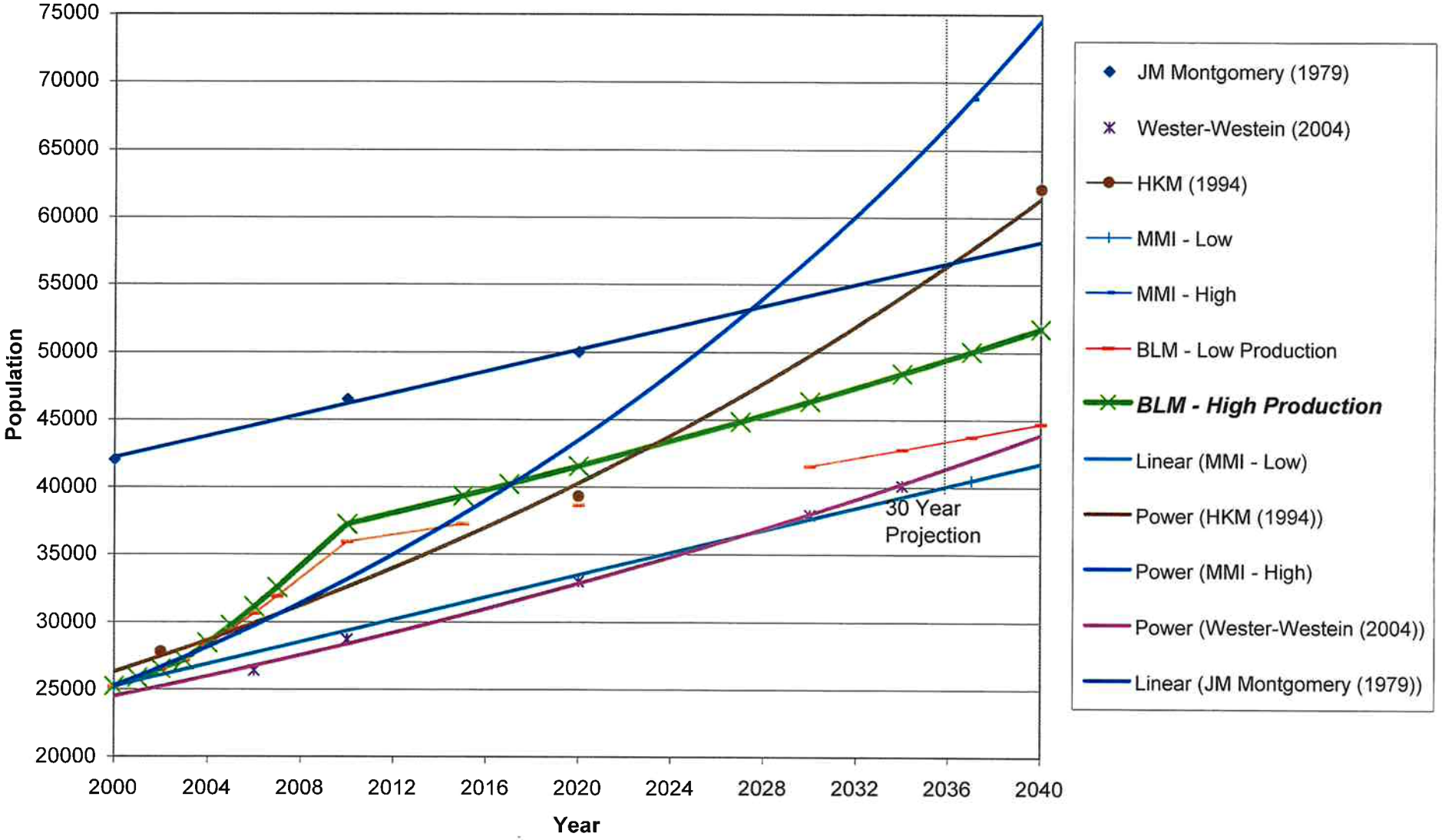


FIGURE 3-2
Average Monthly Per Capita Consumption

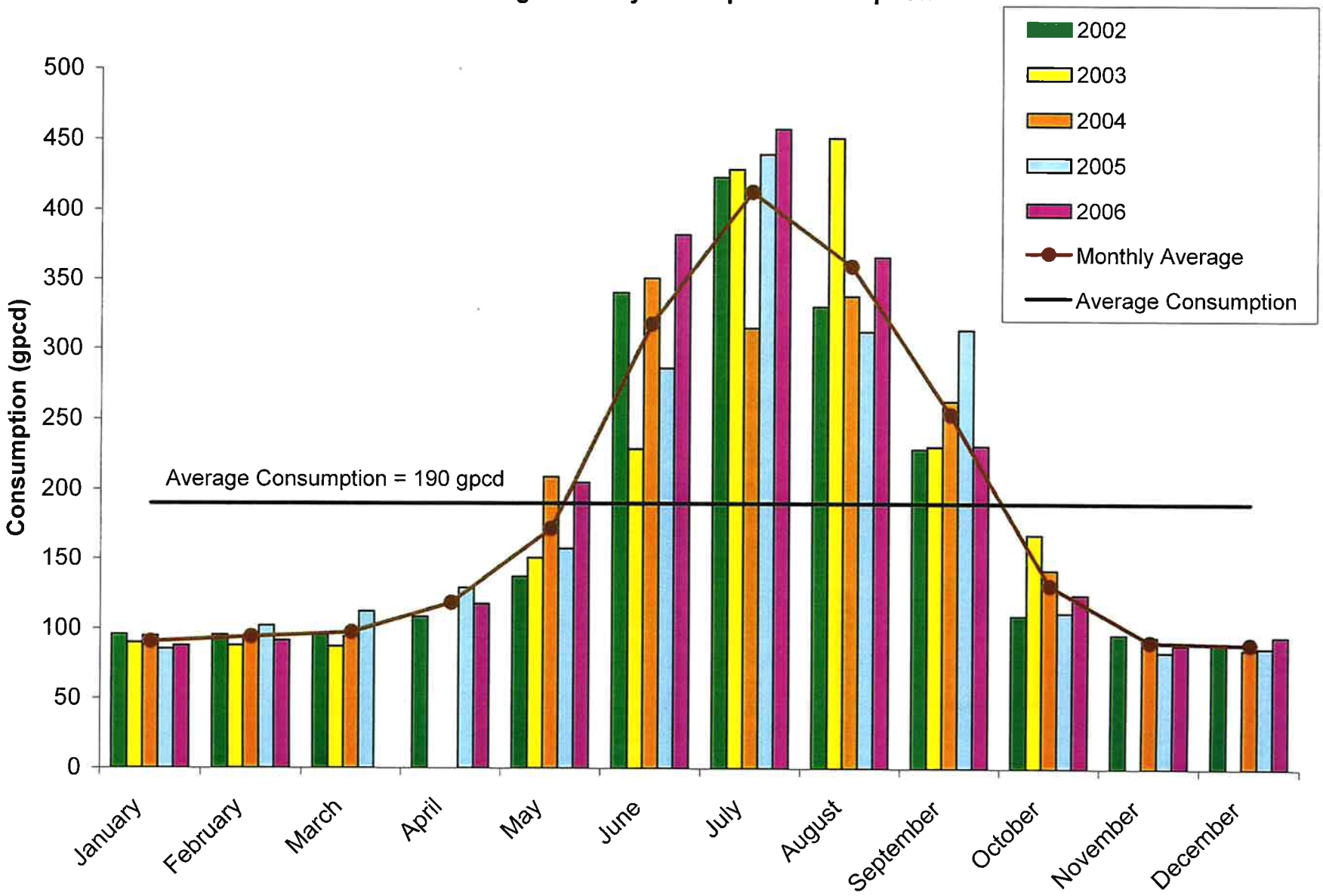


Figure 5-6
Coalbed Methane Wells and Permitted Coalbed Methane Well Sites Near Gillette

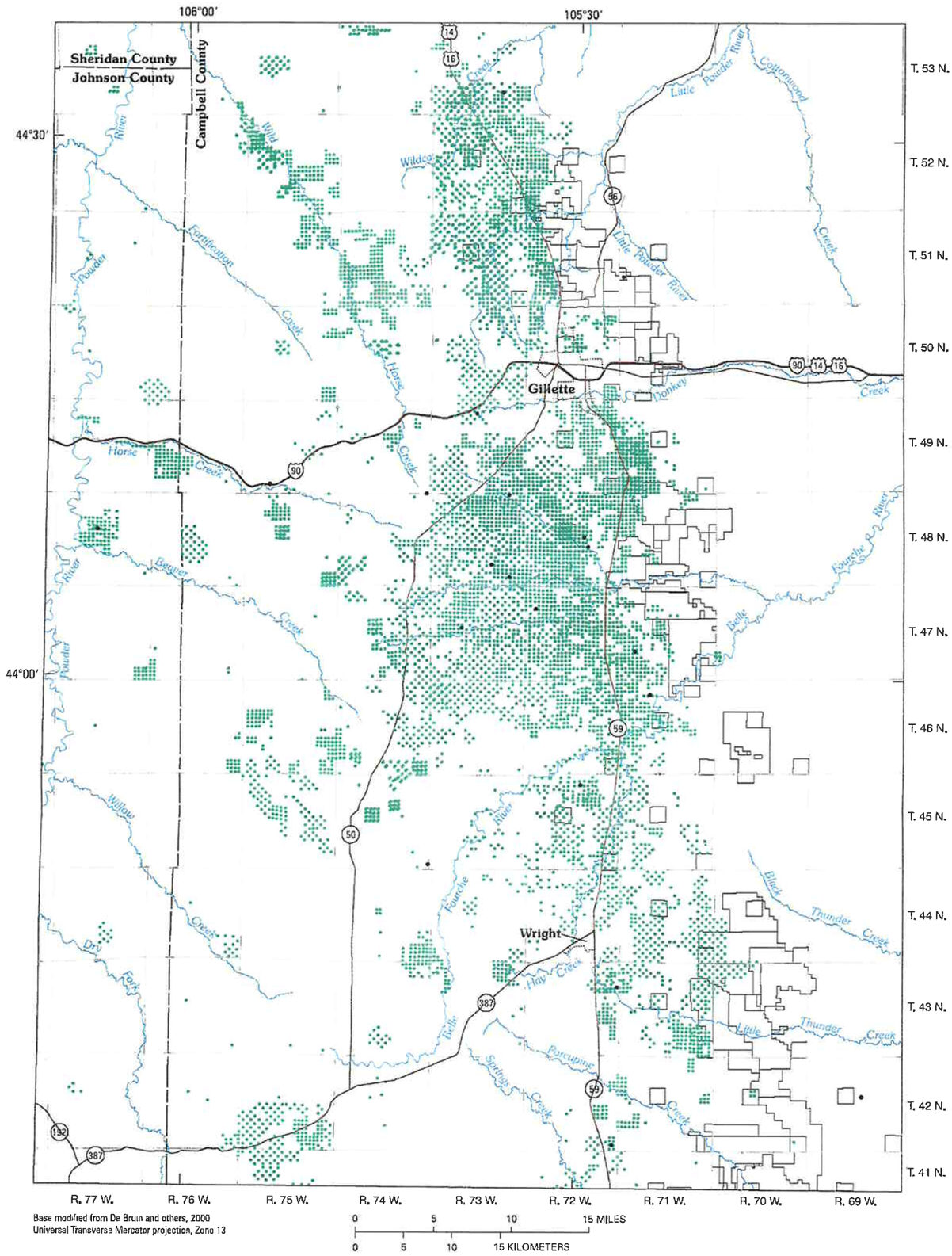
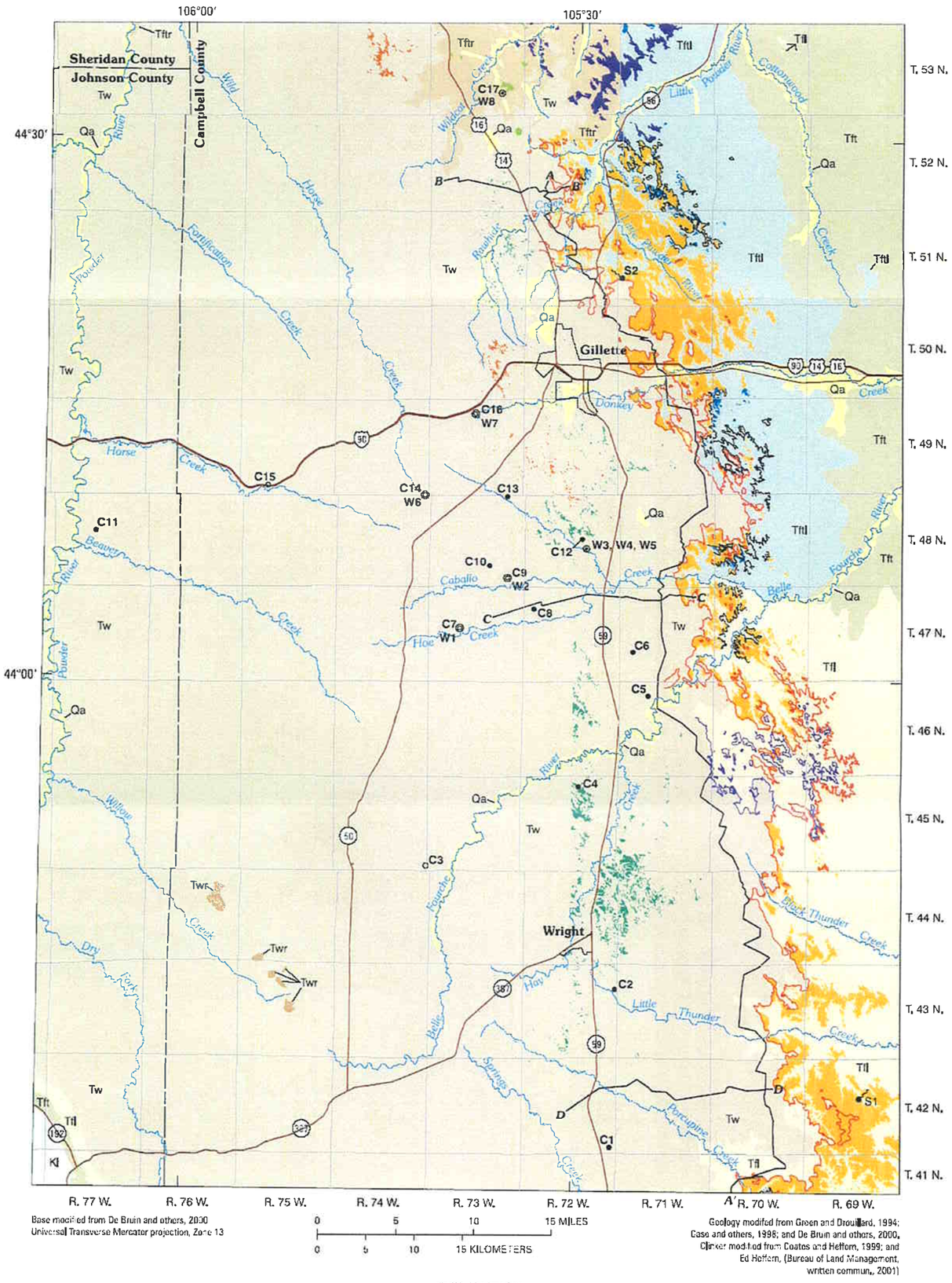


Figure 9. Coal-lease areas, coalbed methane permitted or production wells, and ground-water sampling sites in the study area, eastern Powder River Basin, Wyoming, 1999.

Figure 5-6 reproduced from:
USGS Water-Resources
Investigations Report 02-4045

WATER-LEVEL MEASUREI

Figure 5-7
Generalized geology and location of clinker beds near Gillette

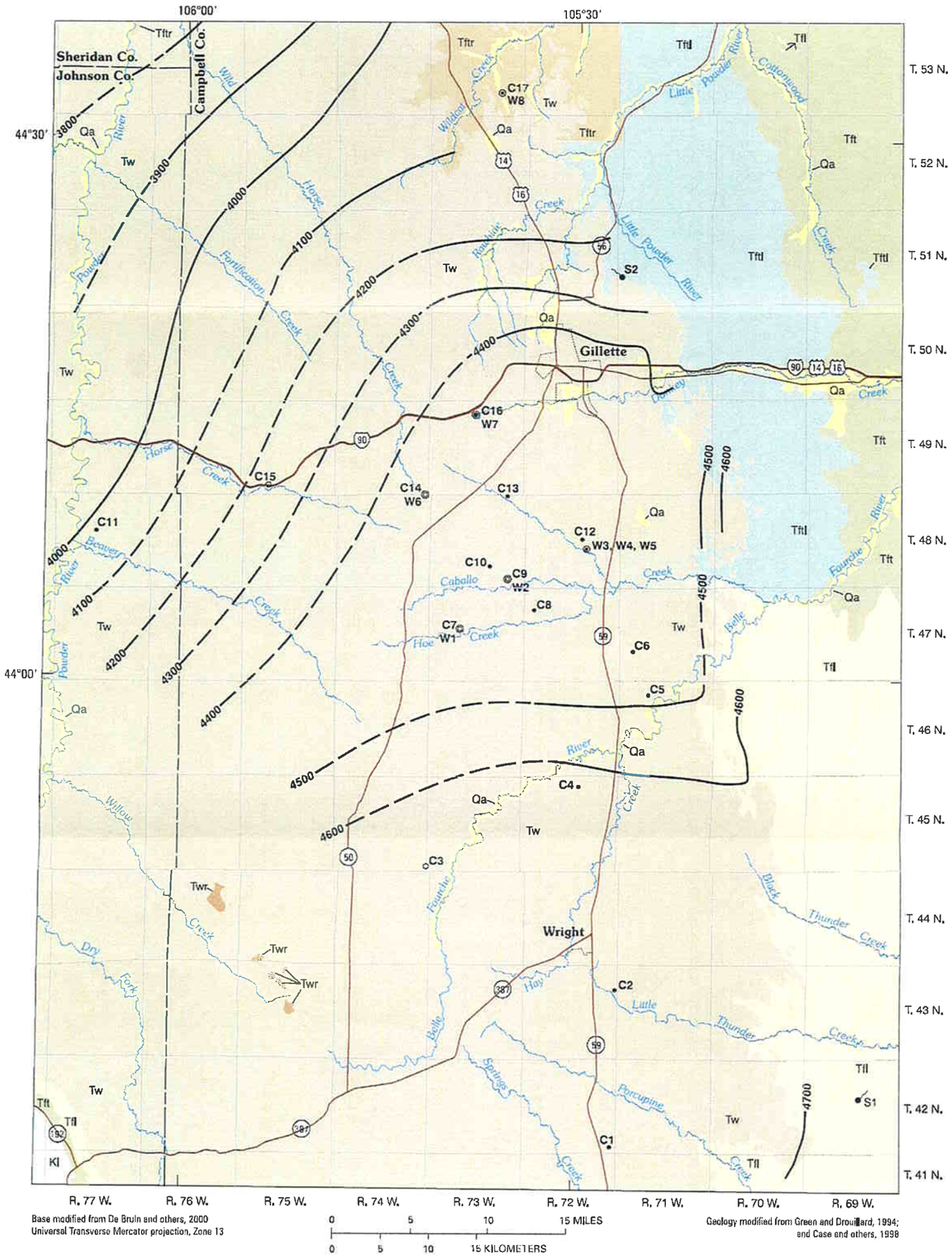


DESCRIPTION OF STUDY AREA 11

Figure 4. Generalized geology, clinker in the study area, lines of geologic cross sections, and ground-water sampling locations in the eastern Powder River Basin, Wyoming, 1999.

Figure 5-7 reproduced from:
USGS Water-Resources
Investigations Report 02-4045

Figure 5-8
Potentiometric Contours for Wyodak-Anderson Coal Bed in 1986



EXPLANATION

Geologic units and age

- Qa — **Alluvium** (Holocene and Pleistocene)
- Twr — **White River Formation** (Oligocene)
- Tw — **Wasatch Formation** (Eocene)
- **Fort Union Formation** (Paleocene)
  - Tftr — Tongue River Member
  - Tftl — Tongue River and Lebo Members
  - Tfl — Lebo Member
  - Tft — Tullock Member
- Kl — **Lance Formation** (Cretaceous)

4700 — **Generalized potentiometric contour**--Shows altitude at which water level would have stood in tightly cased well completed in the Wyodak-Anderson coalbed aquifer. Represents pre-coal mining and pre-coalbed methane development. Potentiometric surface based on water levels measured 1973-84 (Daddow, 1986). Dashed where approximately located. Contour interval 100 feet. Datum is sea level

Ground-water sampling locations

- C1 — **Coalbed methane production well and site number**--well is completed in a coalbed aquifer
- C3 — **Monitoring well owned by Wyoming State Engineer's Office and site number**--well is completed in a coalbed aquifer
- C7, W1 — **Monitoring-well cluster owned by Wyoming State Engineer's Office and site numbers**--one well is completed in a coalbed aquifer and one well is completed in overlying Wasatch aquifer
- W3, W4, W5 — **Monitoring-well cluster owned by Bureau of Land Management and site numbers**--one well is completed in a coalbed aquifer and one or more wells are completed in overlying Wasatch aquifer
- S1 — **Spring discharging from clinker and site number**

DESCRIPTION OF STUDY AREA 17

Figure 8. Generalized geology, potentiometric contours for Wyodak-Anderson coalbed aquifer, and ground-water sampling locations in the study area, eastern Powder River Basin, Wyoming, 1999. Potentiometric contours from Daddow (1986).

Figure 5-8 reproduced from:
USGS Water-Resources
Investigation s Report 02-4045

Figure 5-26
Generalized Groundwater Level Declines in the Gillette Area

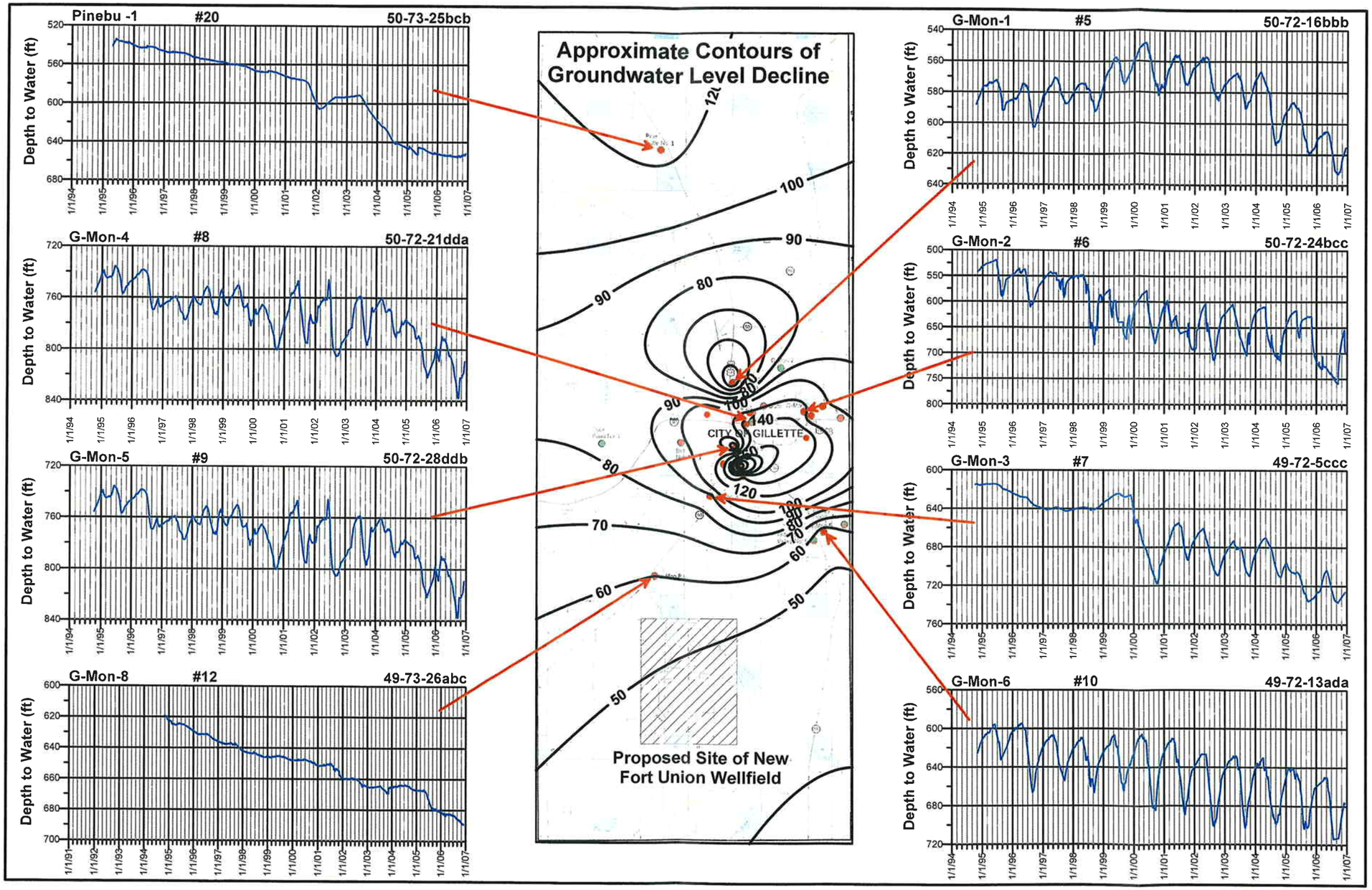


Figure 5-54a
Comparison of Madison and Fort Union aquifer hydrographs

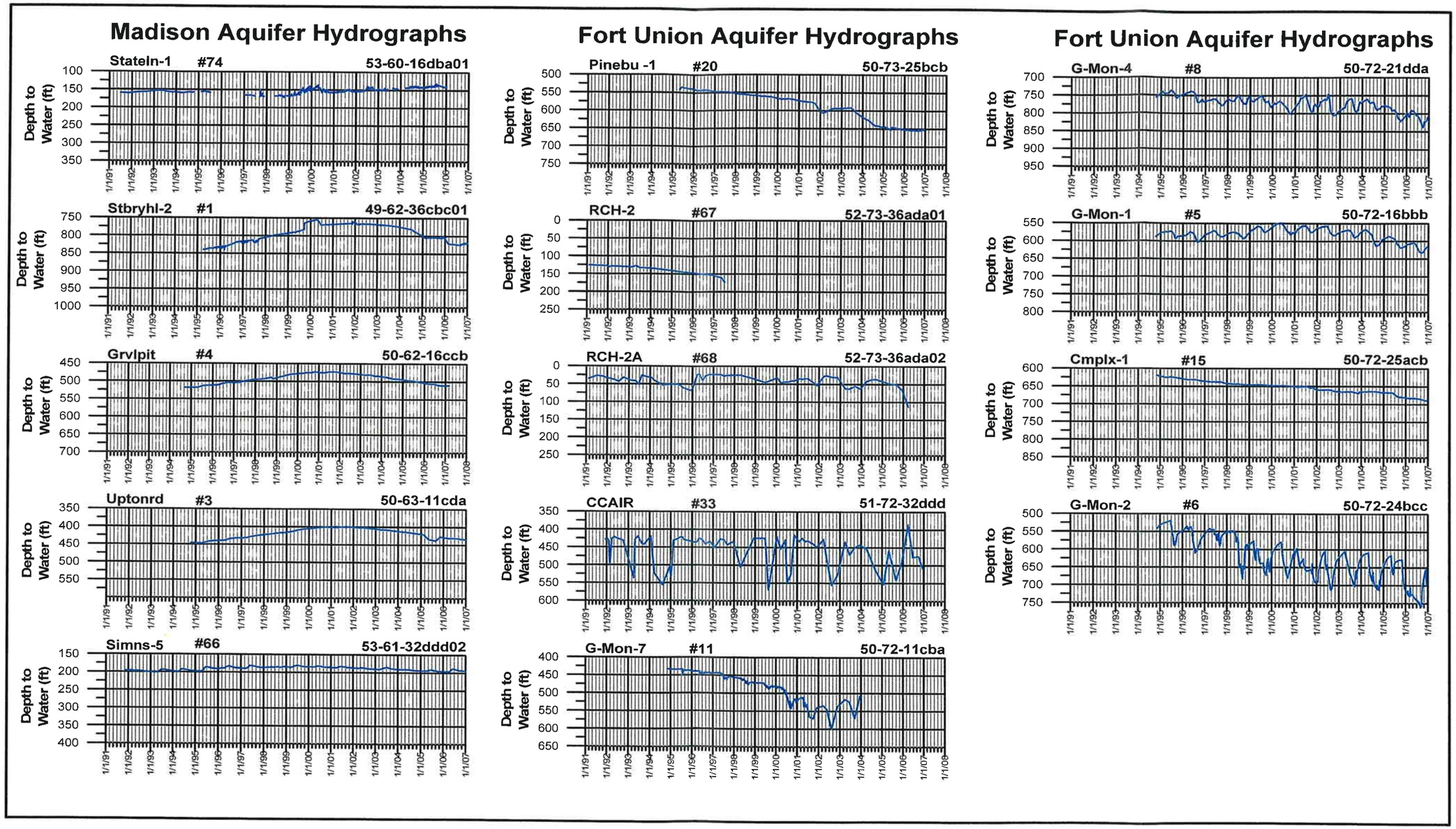
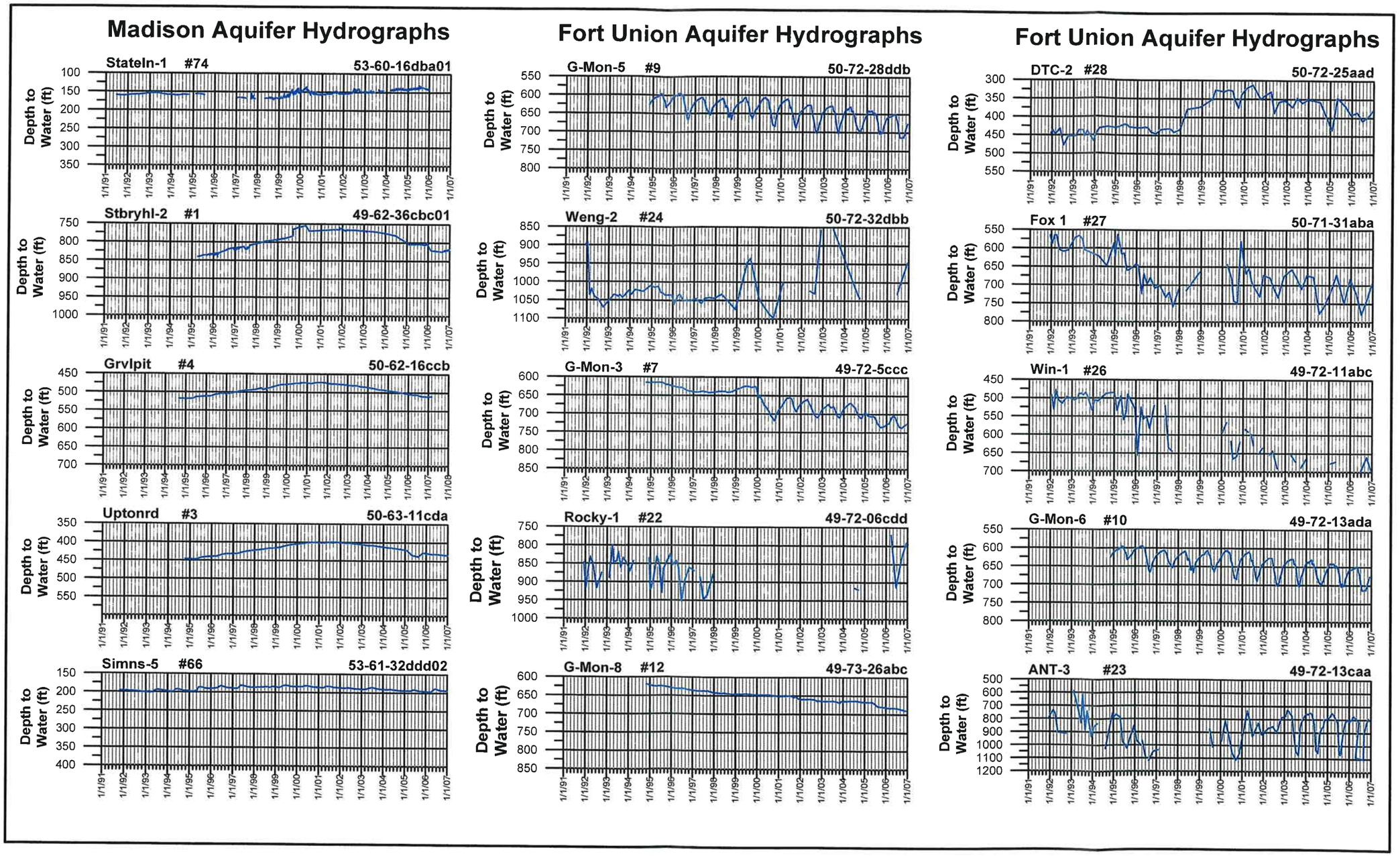
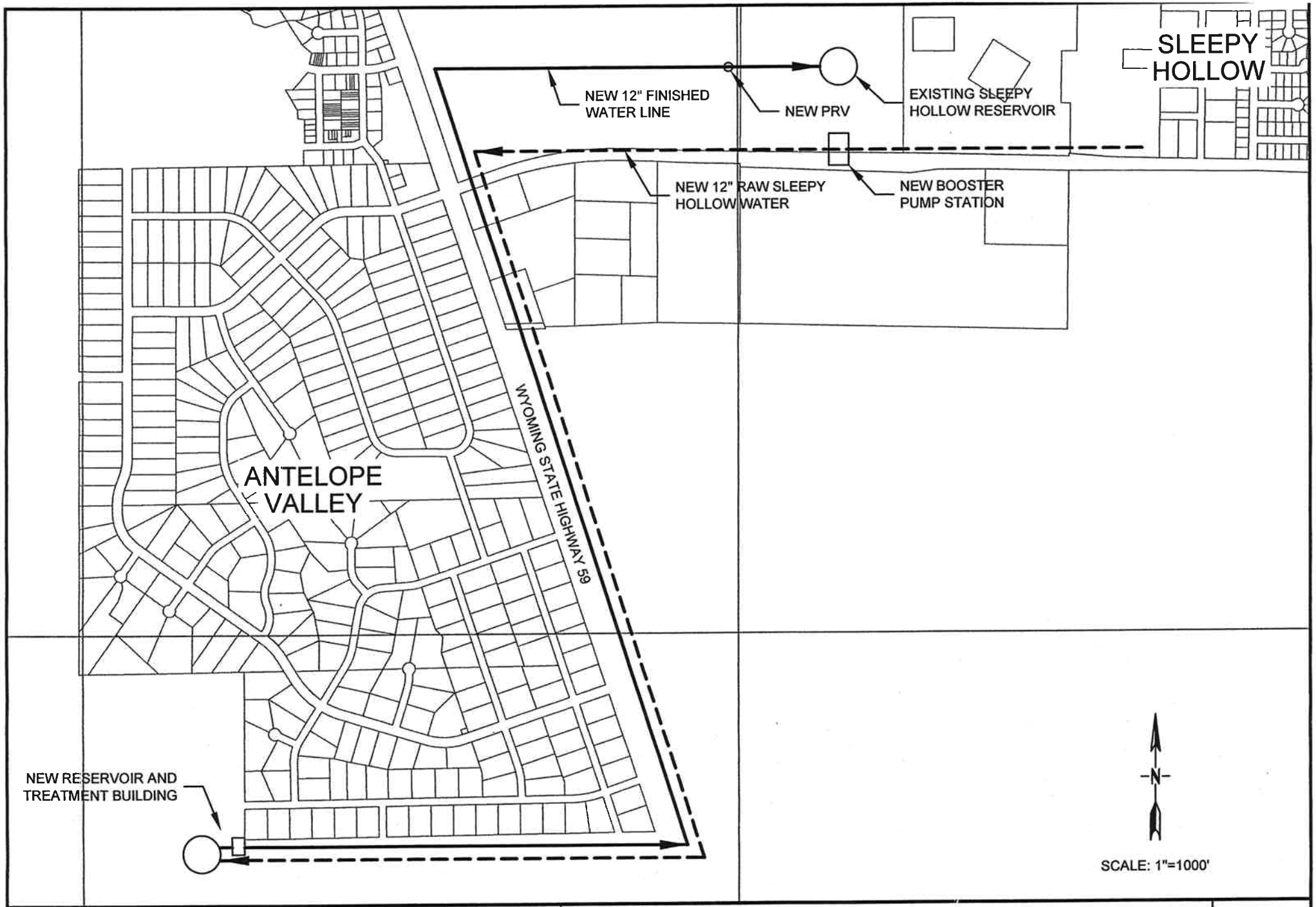


Figure 5-54b
Comparison of Madison and Fort Union aquifer hydrographs





MORRISON MAIERLE, INC.
An Employee-Owned Company

Engineers
Surveyors
Scientists
Planners

2020 Grand Avenue
Billings MT 59102

Phone: (406) 656-6000
Fax: (406) 656-3432

COPYRIGHT © MORRISON-MAIERLE, INC., 2007

DRAWN BY: RLL
CHK'D. BY: CMH
APPR. BY:
DATE: 6/2007

GILLETTE

CITY OF GILLETTE LONG TERM WATER SUPPLY STUDY

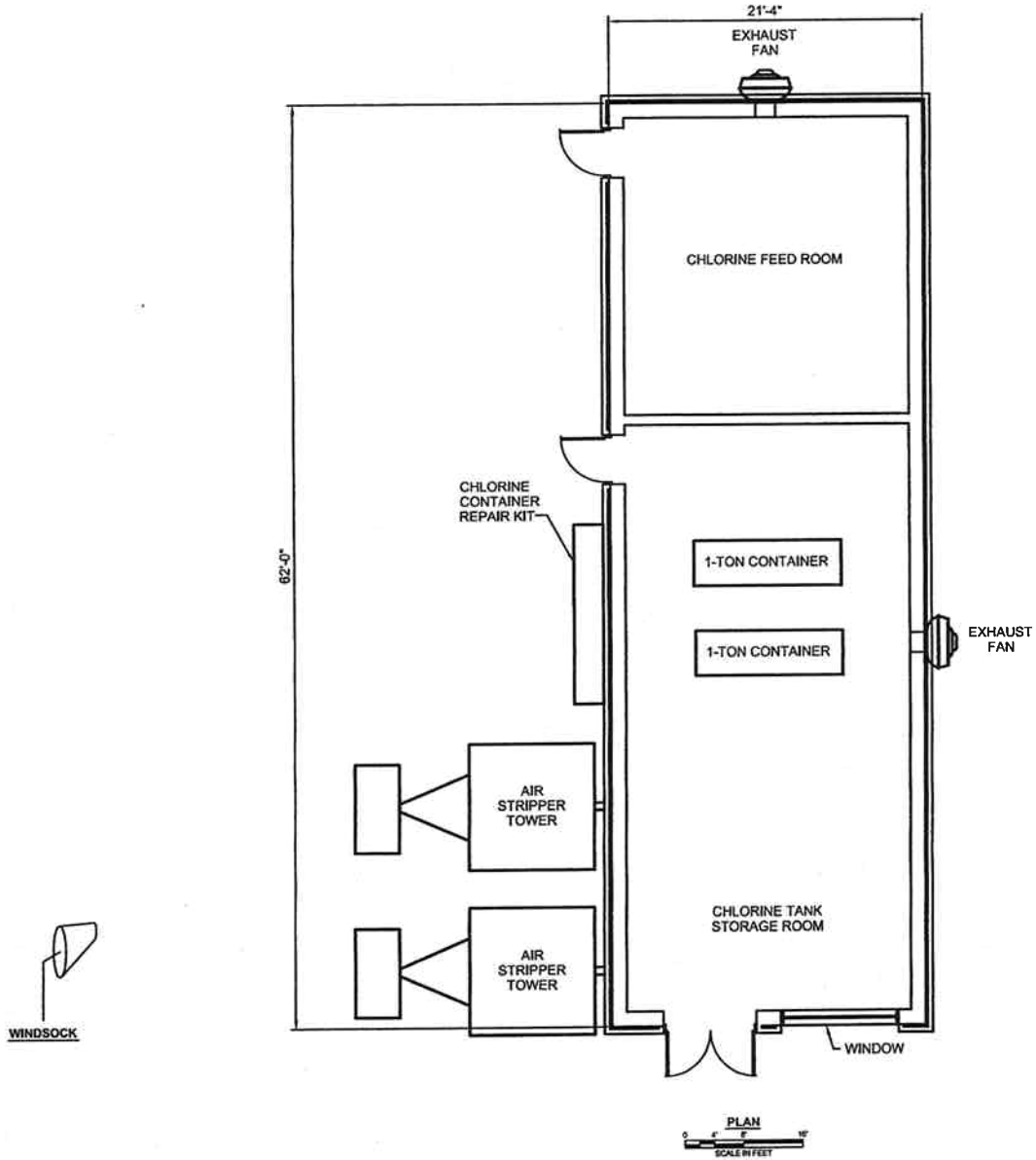
WYOMING

PROPOSED PHASE I SUBDIVISION IMPROVEMENTS

PROJECT NO. 4323.001

FIGURE NUMBER
FIG 6-1

V:\4323\ACAD\FIGURES\FIGURE6-1.dwg Plotted by rlarance on Jun/11/2007



Burns & McDonnell
SINCE 1898

Figure 6-2

SUBDIVISION TREATMENT LAYOUT

COPYRIGHT © 2007 BURNS & McDONNELL ENGINEERING COMPANY, INC.

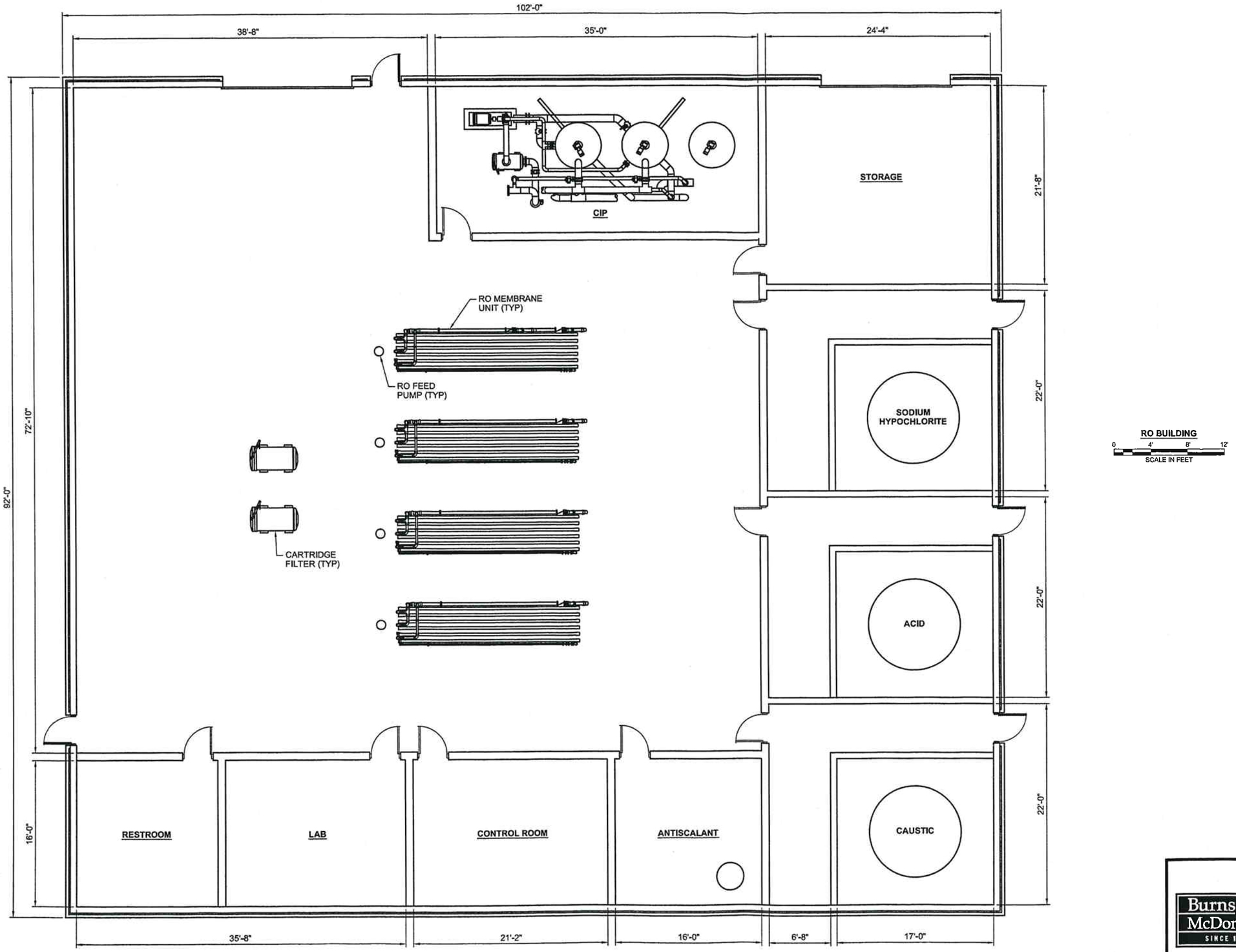
FIGURE 7-1
Existing City of Gillette Water System Wells*

Number	Year Installed	Casing Depth (ft)	Capacity (gpm)	Pump Setting (ft bgl)	Pump Manuf.	Pump Size (hp)	Motor Manufacturer	Fluoride (mg/l)	TDS (mg/l)	Hardness (mg/l as $CaCO_3$)	Iron (mg/l)
					Wells - Fort Union						
S-9	1976	1,200	60	935	Crown	40	Hitachi	1.10	346	49	0.13
S-12	1977	2,327	300+	935	Crown	40	Hitachi	1.37	359	14	0.2
S-17	1978	2,324	99	1,141	Crown	60	Franklin	3.90	875	15	0.04
S-18	1978	1,850	110	940	Berkeley	40	Hitachi	1.30	322	2	0.14
S-19	1978	1,750	110	988	Crown	50	Franklin	1.10	262	2	0.06
S-20	2007		300+								
S-21	1998	2,250	90	1,056	Goulds	60	Hitachi	3.00	655	19	0.22
S-22	1997	2,315	60	1,140	Crown	50	Franklin	5.40	312	32	0.43
S-23	1998	2,252	70	1,056	Crown	50	Franklin	2.40	490	13	0.13
S-24	1997	2,430	150	1,099	Crown	75	Franklin	2.40	528	28	0.11
S-25	1997	2,469	86	1,149	Berkeley	60	Franklin	4.00	746	16	0.11
S-26	1998	2,515	100	1,225	Crown	60	Hitachi	1.40	274	27	0.87
S-27	1998	2,535	55	1,279	Crown	60	Franklin	2.80	558	20	0.43
		Total	*1590***				*Average*	*2.51*	*477.25*	*19.75*	*0.24*
					Wells - Fox Hills/Lance						
FH-3	1975	4,437	650	1,569	Centrilift	390	Centrilift	9.40	1,280	ND	0.2
FH-4	1982	4,350	500	1,538	Centrilift	250	Centrilift	7.00	1,240	ND	0.1
FH-5	1998	3,997	500	1,411	Centrilift	250	Centrilift	6.00	1,030	ND	1.94
		Total	*1,650*				*Average*	*7.47*	*1,183*	*0.00*	*0.75*
					Wells - Madison						
M-1	1980	2,390	574	932	Crown	200	Franklin	1.10	672	500	0.05
M-2	1980	2,390	755	932	Crown	200	Franklin	0.66	624	476	0.03
M-3	1980	2,357	961	622	Crown	200	Franklin	0.68	590	503	0.03
M-4	1980	2,390	825	625	Crown	200	Franklin	0.64	608	478	0.03
M-5	1980	2,365	650	1,097	Crown	200	Franklin	2.03	678	493	0.01
M-6	1980	2,421	639	921	Crown	200	Franklin	1.69	714	521	2.54
M-7	1981	2,500	520	1,071	Crown	200	Franklin	1.57	654	494	<0.05
M-8	1981	2,500	542	1,084	Crown	200	Franklin	1.22	724	482	0.18
M-9	1996	2,397	1,300	510	Johnson	250	US	0.63	581	470	0.03
M-10	1996	2,370	1,221	510	Johnson	250	IEM	0.63	601	470	0.04
		Total	*7,987*				*Average*	*1.09*	*644.60*	*488.70*	*0.29*

*Prepared in part from 2004 Master Plan Report by Wester-Wetstein and Associates
**Includes preliminary S-12 and S-20 redrill results
+Preliminary results from S-12 and S-20 redrilling approximate pump test results

*Prepared from 2004 Master Plan Report by Wester-Wetstein and Associates

+Well Pumping Rate Average from S-20 Pump Test



RO BUILDING

0 4' 8' 12'

SCALE IN FEET

Burns & McDonnell SINCE 1898

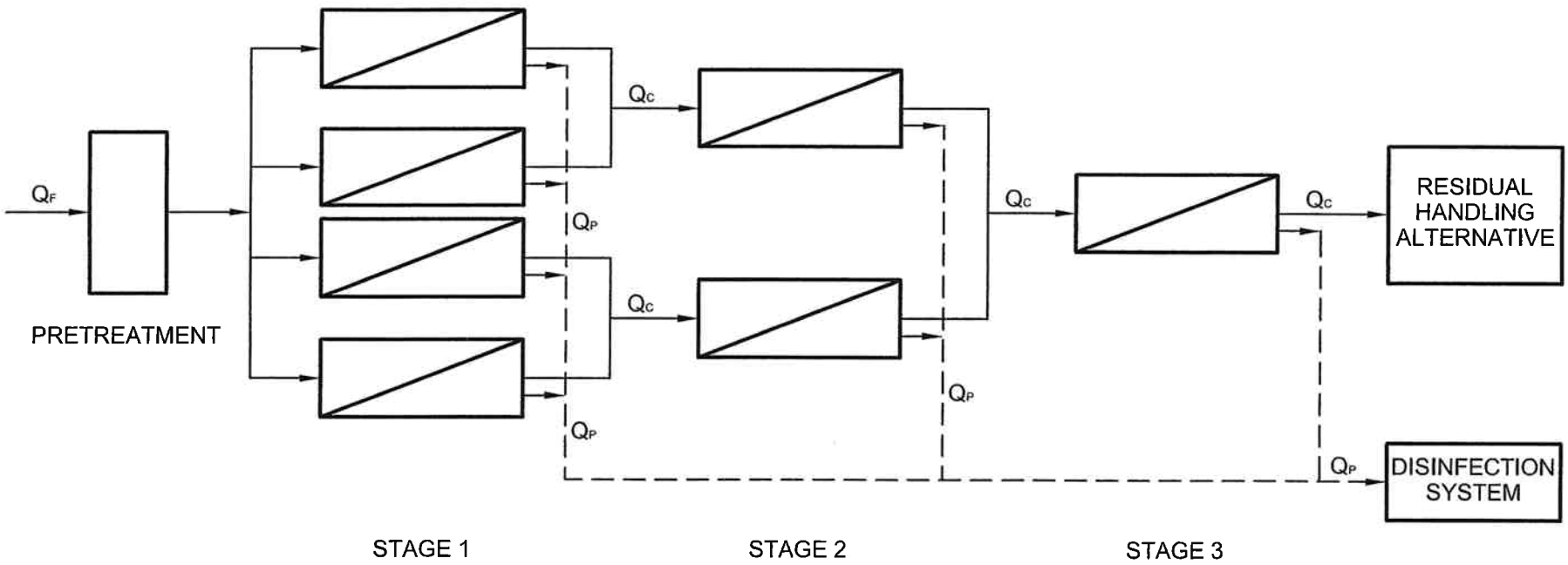
Figure 8-2

FOX HILLS
RO TREATMENT

COPYRIGHT © 2007 BURNS & McDONNELL ENGINEERING COMPANY, INC.

J:\GILLETTE\44678-LEVEL II STUDY\CADD\PROCESS\FIGURES\FIGURE 8-2.DWG 06-13-2007 8:55 R_FULK

COPYRIGHT © 2007 BURNS & McDONNELL ENGINEERING COMPANY, INC.



Q_F FEED WATER FLOW RATE
Q_C CONCRETE FLOW RATE
Q_P PERMEATE FLOW RATE

Burns & McDonnell SINCE 1898

Figure 8-3

SCHEMATIC OF RO SYSTEM

Figure 8-4
ED System

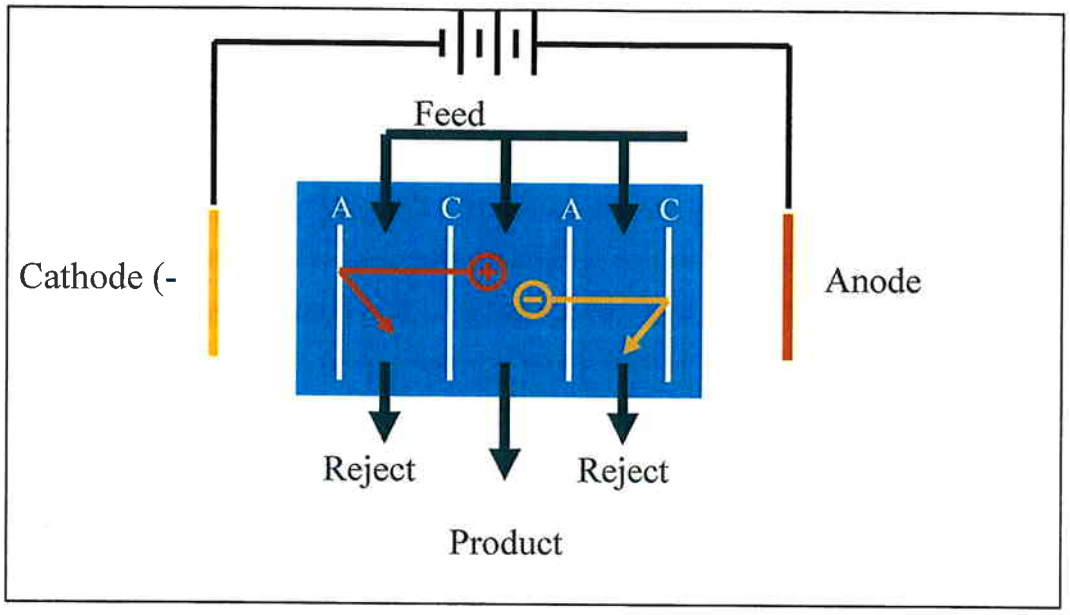
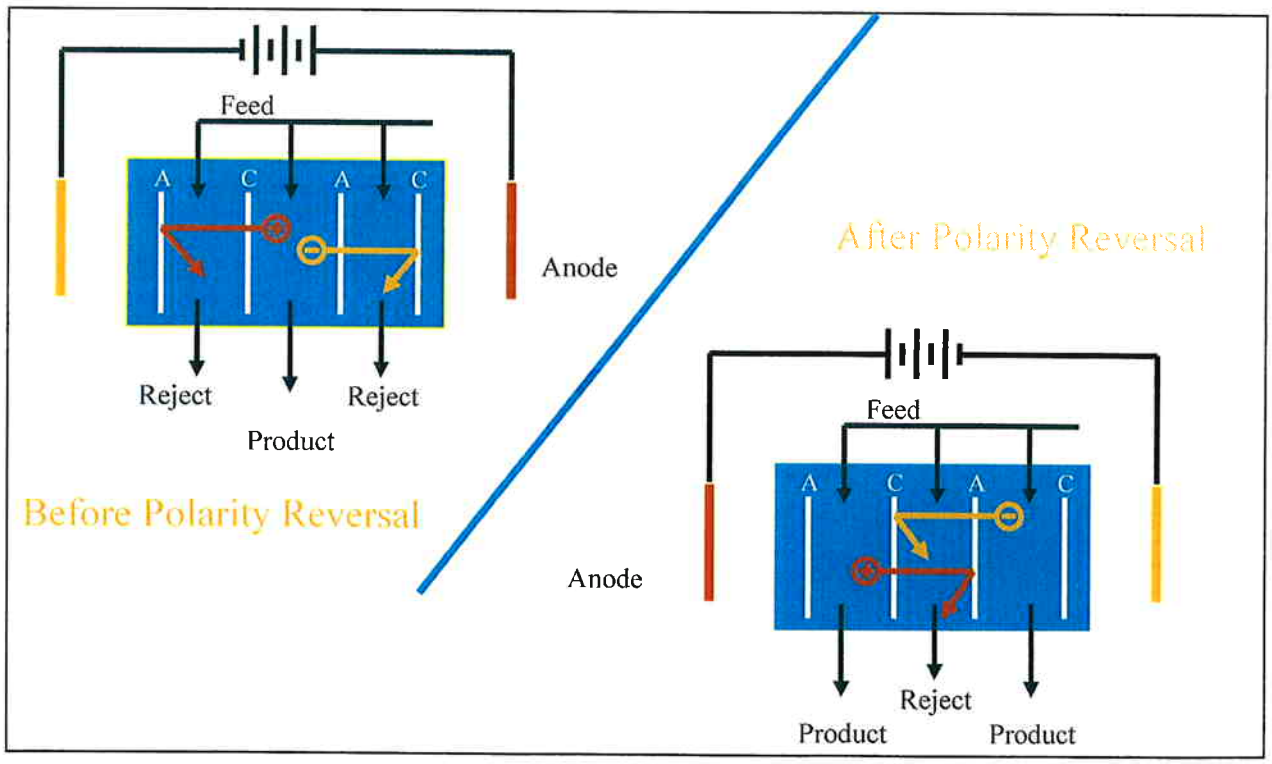


Figure 8-5
EDR System



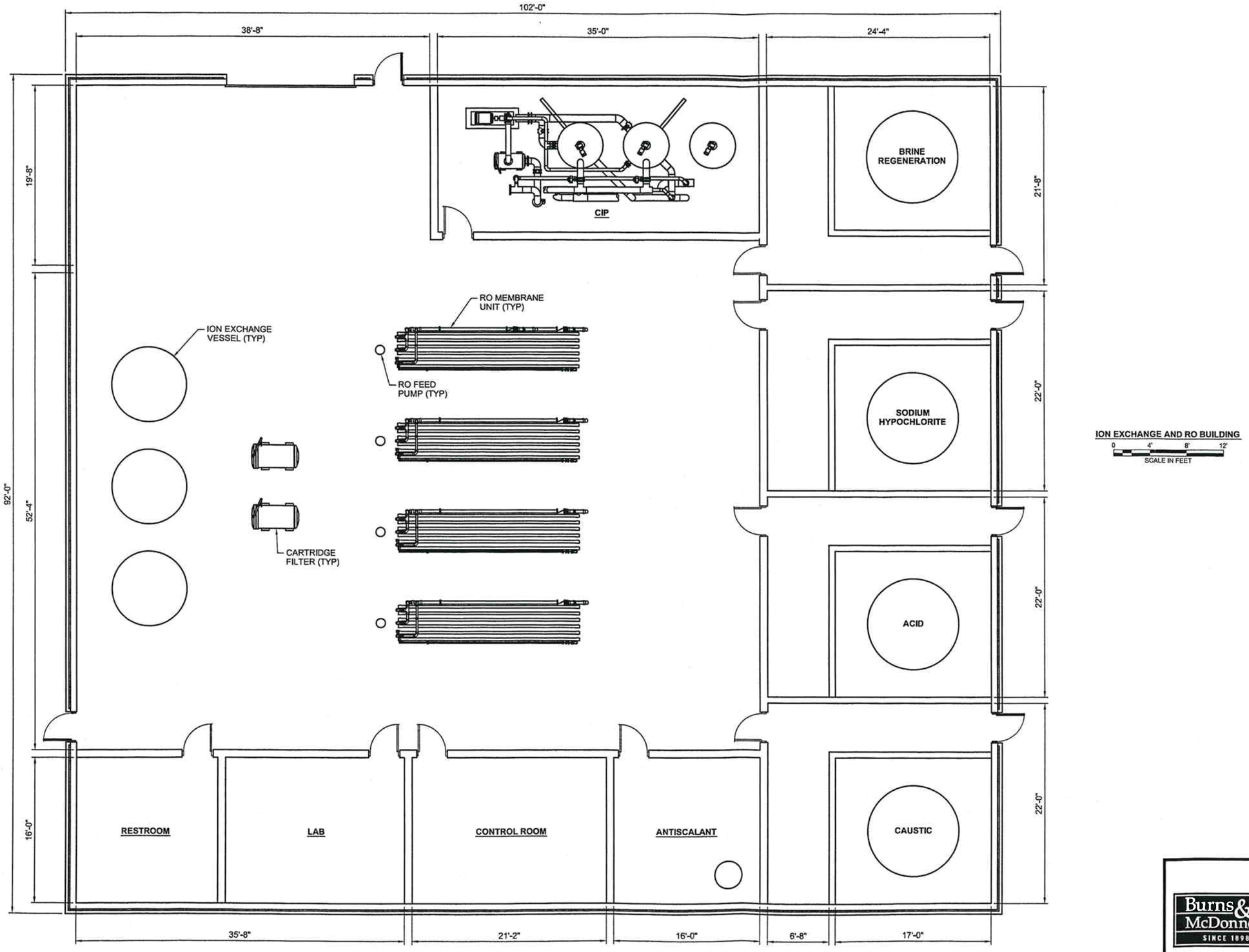
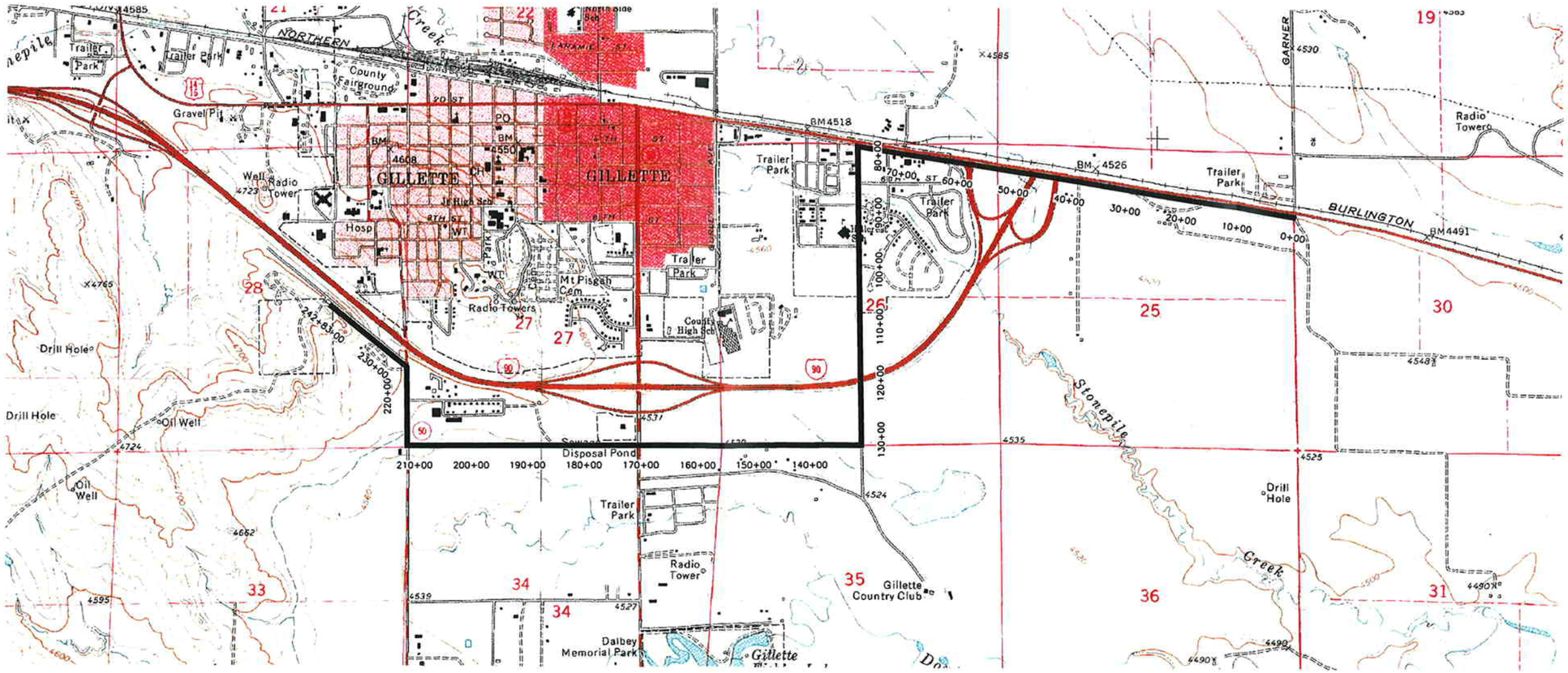
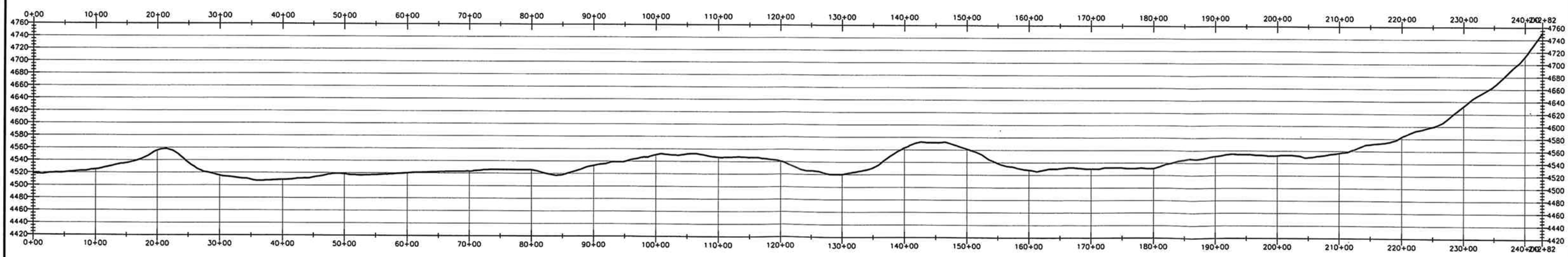


Figure 8-7

FOX HILLS
ION EXCHANGE+RO
TREATMENT

COPYRIGHT © 2007 BURNS & McDONNELL ENGINEERING COMPANY, INC.





MORRISON MAIERLE, INC.
An Employee-Owned Company

Engineers
Surveyors
Scientists
Planners

2020 Grand Avenue
Billings MT 59102

Phone: (406) 656-6000
Fax: (406) 656-3432

COPYRIGHT © MORRISON-MAIERLE, INC., 2007

V:\4323\001\ACAD\profile3.dwg Plotted by rlarance on Sep/4/2007

DRAWN BY: RLL
CHK'D. BY: CMH
APPR. BY:
DATE: 6/2007

GILLETTE

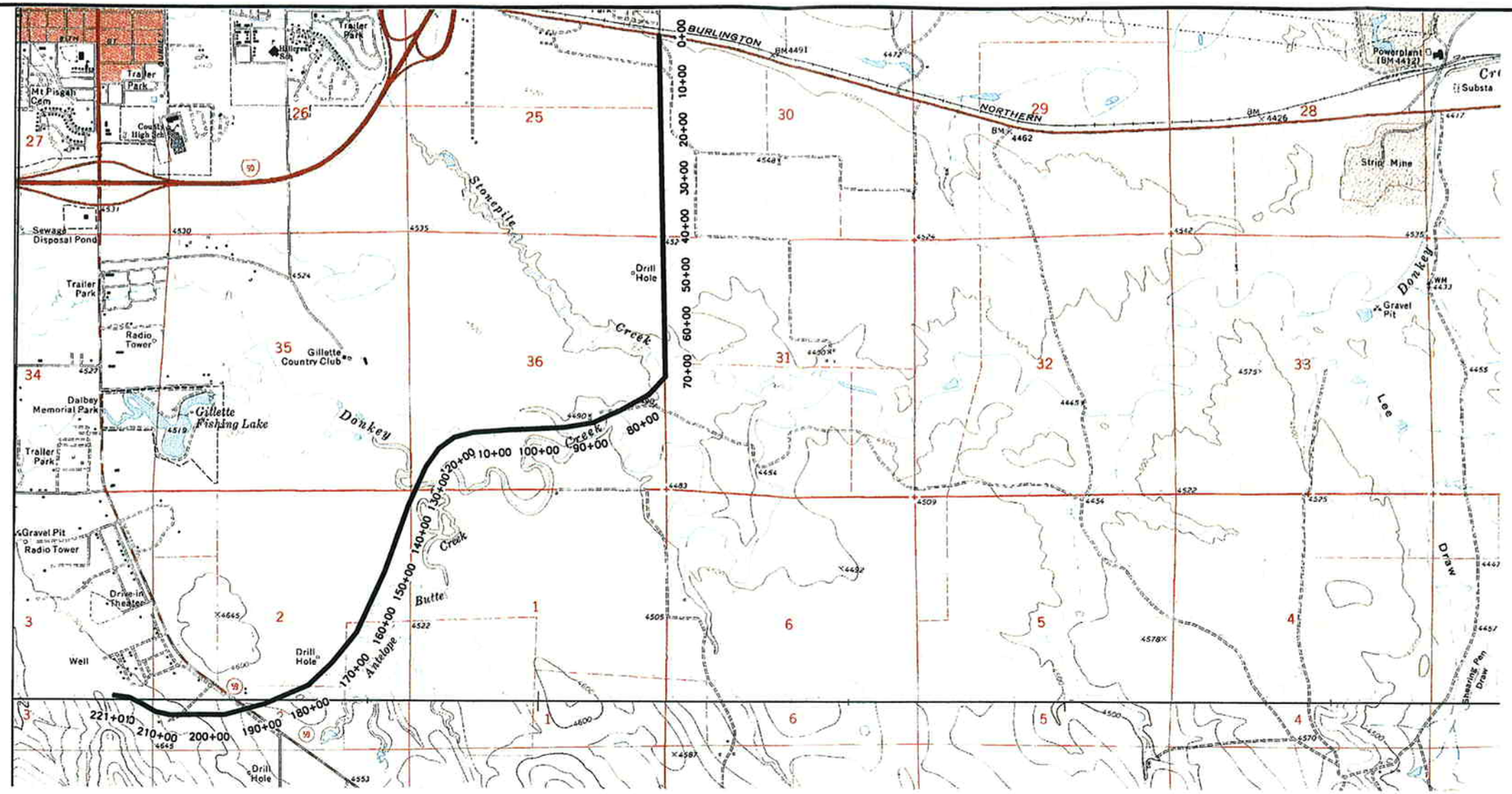
CITY OF GILLETTE LONG TERM
WATER SUPPLY STUDY

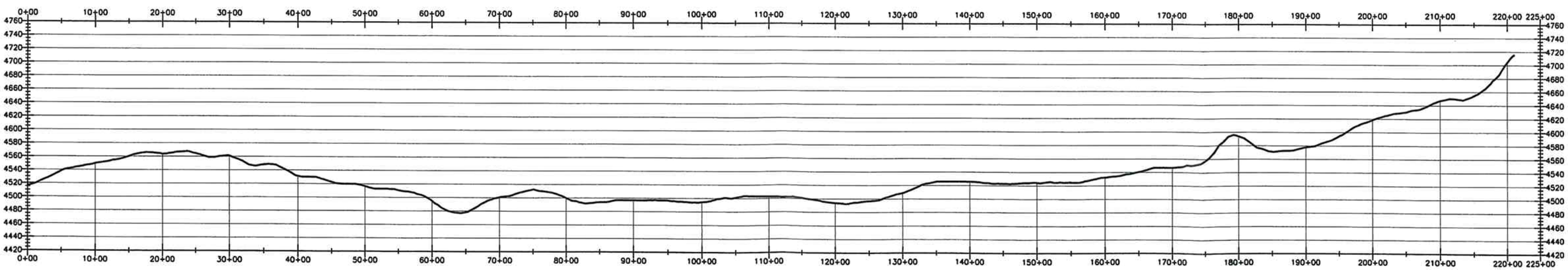
WYOMING

NORTHERN MADISON PIPELINE ROUTE

PROJECT NO.
4323.001

FIGURE NUMBER
FIG 8-8





MORRISON MAIERLE, INC.
An Employee-Owned Company

Engineers
Surveyors
Scientists
Planners

2020 Grand Avenue
Billings MT 59102

Phone: (406) 656-6000
Fax: (406) 656-3432

COPYRIGHT © MORRISON-MAIERLE, INC., 2007

V:\4323\ACAD\profile.dwg Plotted by rlarance on Jun/13/2007

DRAWN BY: RLL
CHK'D. BY: CMH
APPR. BY:
DATE: 6/2007

GILLETTE

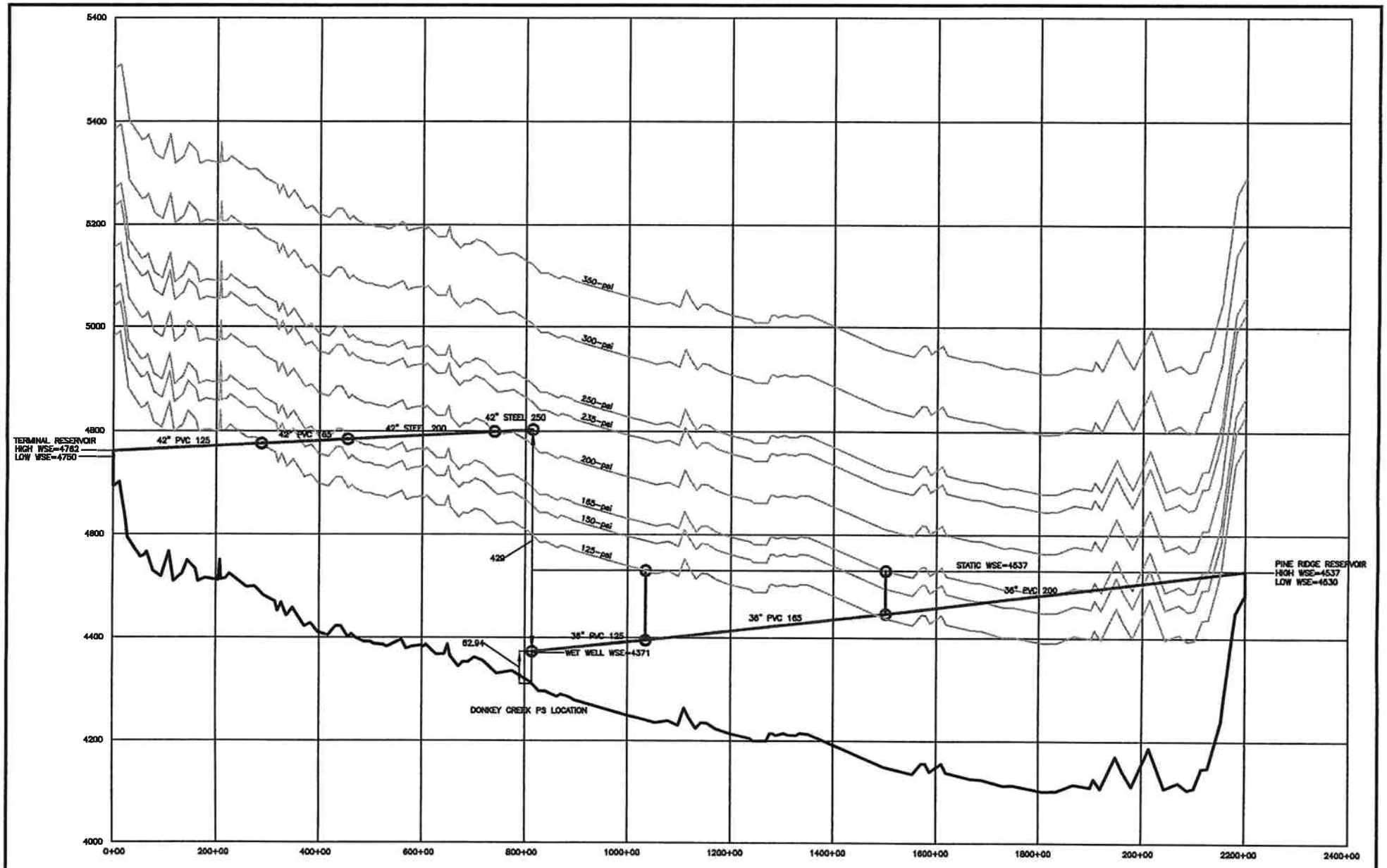
CITY OF GILLETTE LONG TERM
WATER SUPPLY STUDY

WYOMING

SOUTHERN MADISON PIPELINE ROUTE

PROJECT NO.
4323.001

FIGURE NUMBER
FIG 8-9



MORRISON MAIERLE, INC.
An Employee-Owned Company

Engineers
Surveyors
Scientists
Planners

315 N. 25th Street, Suite 102
Billings, MT 59101

Phone: (406) 656-6000
Fax: (406) 656-3432

COPYRIGHT © MORRISON-MAIERLE, INC. 2007

DRAWN BY: RLL
CHK'D BY: WWW
APPR. BY: CMH
DATE: 05/2007

TRANSMISSION MAIN ALTERNATIVE

GILLETTE WYOMING

ALTERNATIVE 2

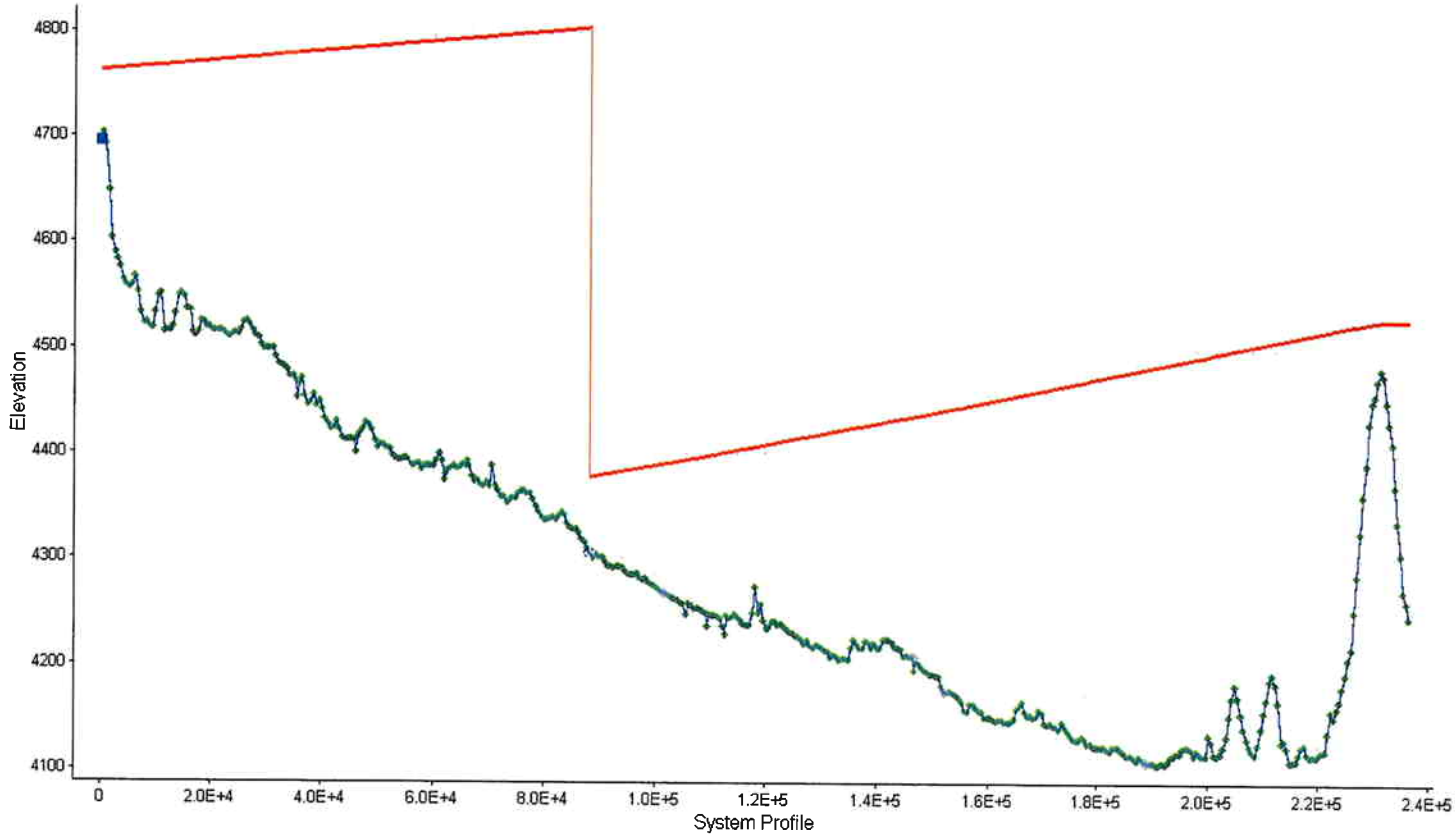
PROJECT NO. 4323

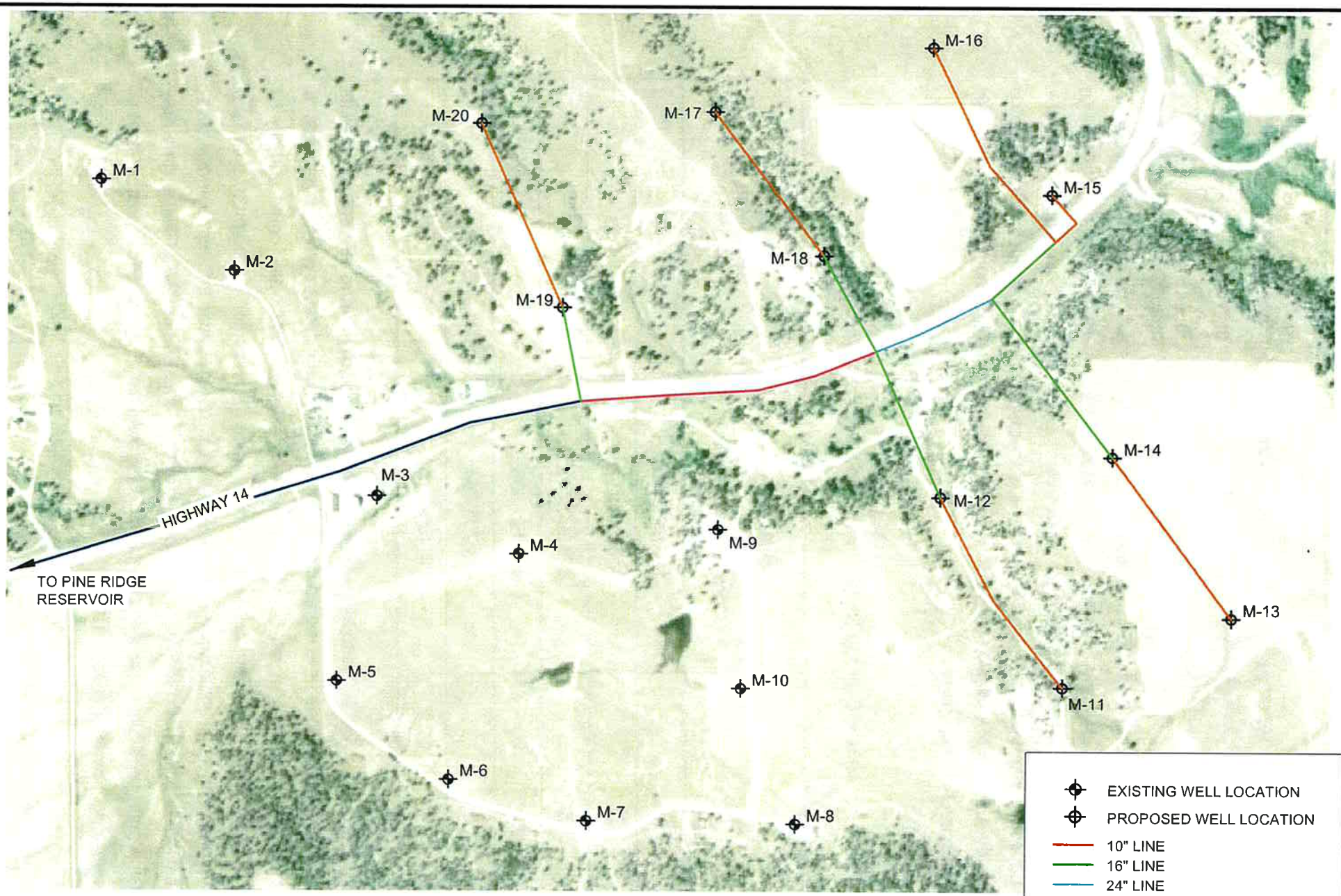
FIGURE NUMBER 8-11

C:\Documents and Settings\bwiegand\Desktop\Gillette Long Transmission Surge Model\Proposed Transmission HGL.dwg Plotted by bwiegand on Jun/13/2007

Figure 8-13

ALTERNATIVE 2 - STEADY STATE HGL PROFILE





MORRISON MAIERLE, INC.
An Employee-Owned Company
Engineers
Surveyors
Scientists
Planners
2020 Grand Avenue
Billings MT 59102
Phone: (406) 656-6000
Fax: (406) 656-3432
COPYRIGHT © MORRISON-MAIERLE, INC., 2007

DRAWN BY: RLL
CHK'D. BY: CMH
APPR. BY:
DATE: 6/2007

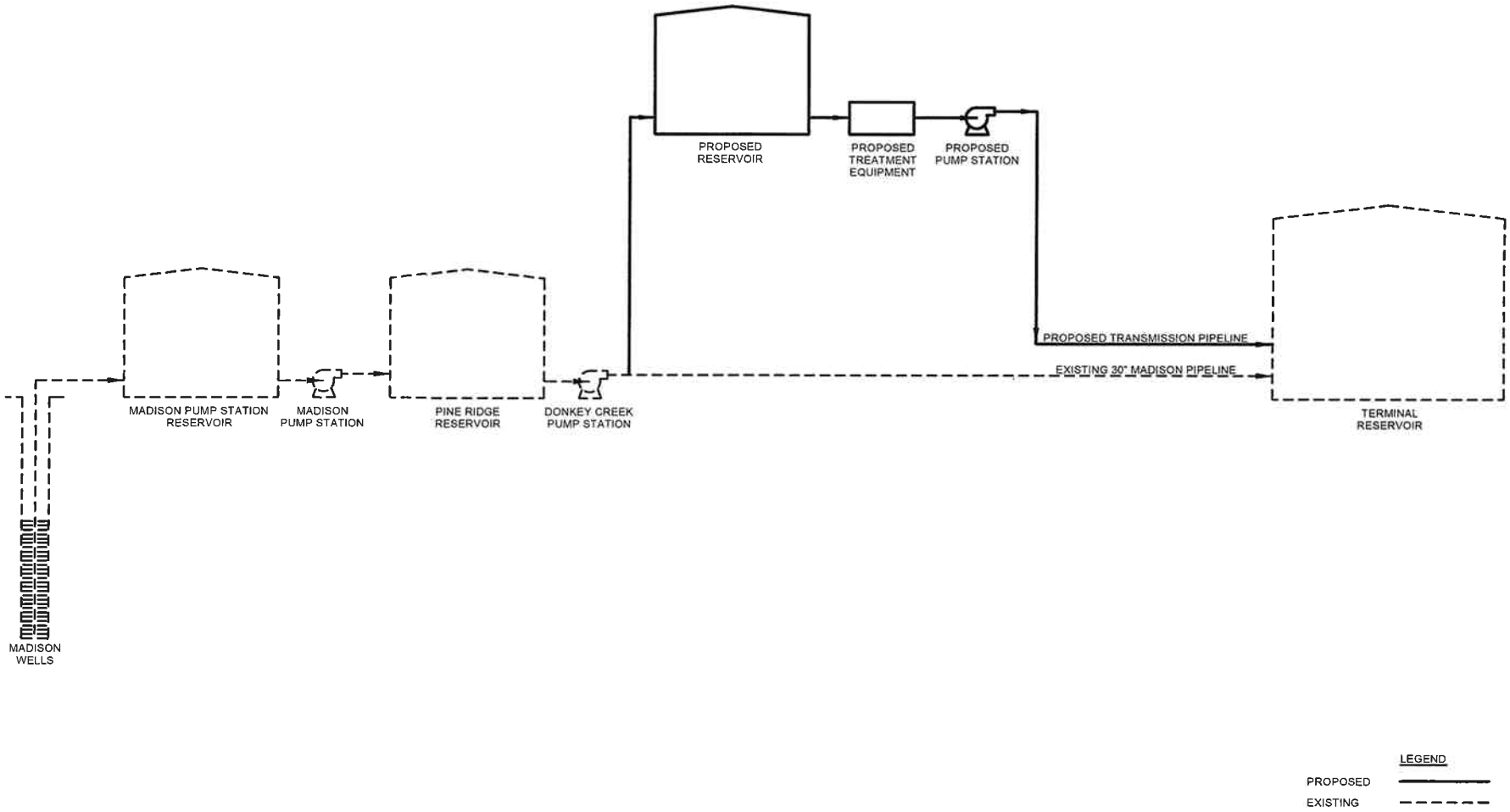
CITY OF GILLETTE LONG TERM WATER SUPPLY STUDY
GILLETTE WYOMING

MADISON WELL FIELD LAYOUT

PROJECT NO. 4323.001

FIGURE NUMBER
FIG 8-17

V:\4323\001\ACAD\FIGURES\MADISONWELLS.dwg Plotted by rlarance on Sep/4/2007



MORRISON MAIERLE, INC.
An Employee-Owned Company
Engineers
Surveyors
Scientists
Planners
2020 Grand Avenue
Billings MT 59102
Phone: (406) 656-6000
Fax: (406) 656-3432
COPYRIGHT © MORRISON-MAIERLE, INC., 2007

DRAWN BY: RLL
CHK'D. BY: JC
APPR. BY: ???
DATE: 6/2007

GILLETTE

CITY OF GILLETTE
LONG TERM WATER SUPPLY STUDY

WYOMING

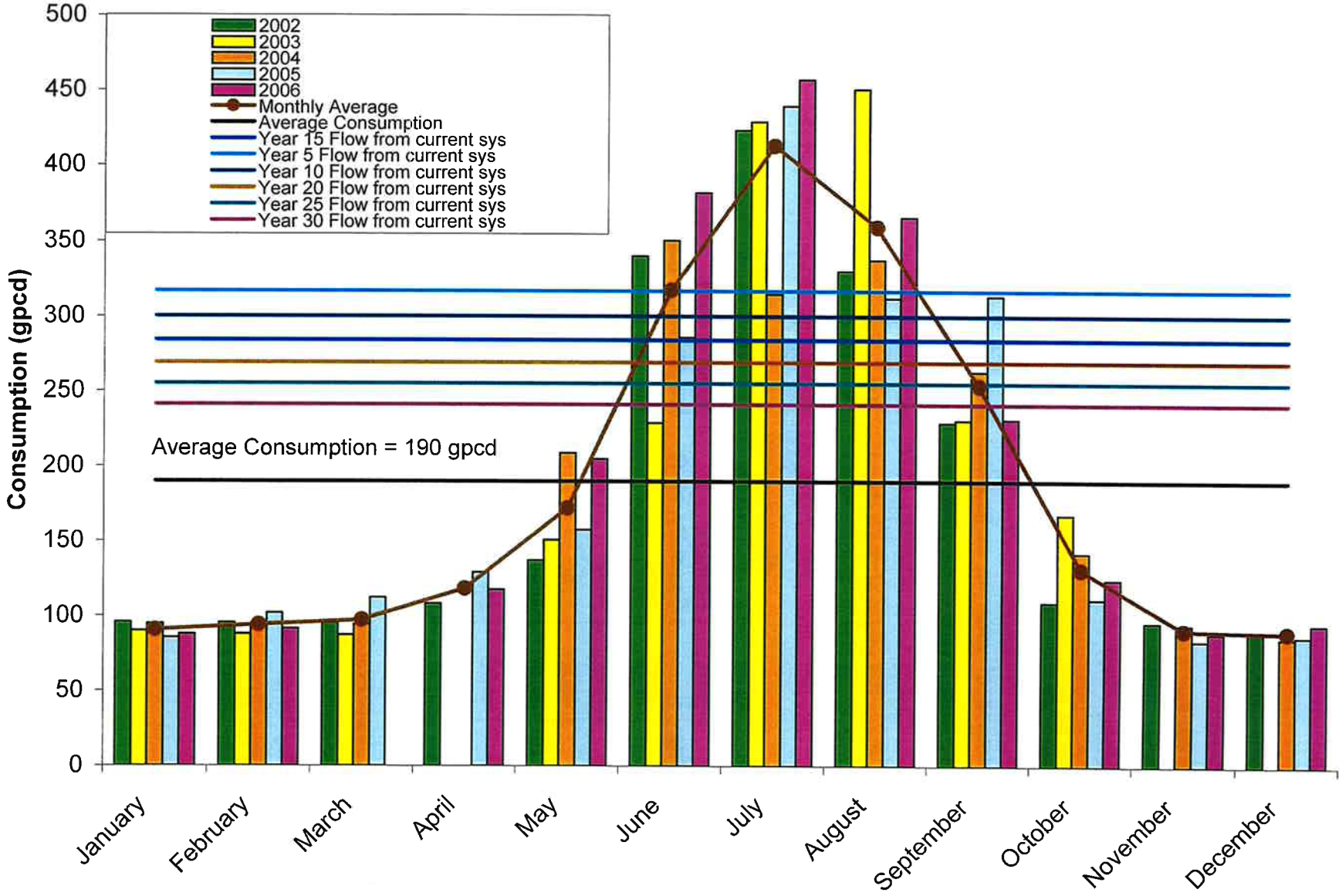
SURFACE WATER IMPOUNDMENT
ALTERNATIVE SCHEMATIC

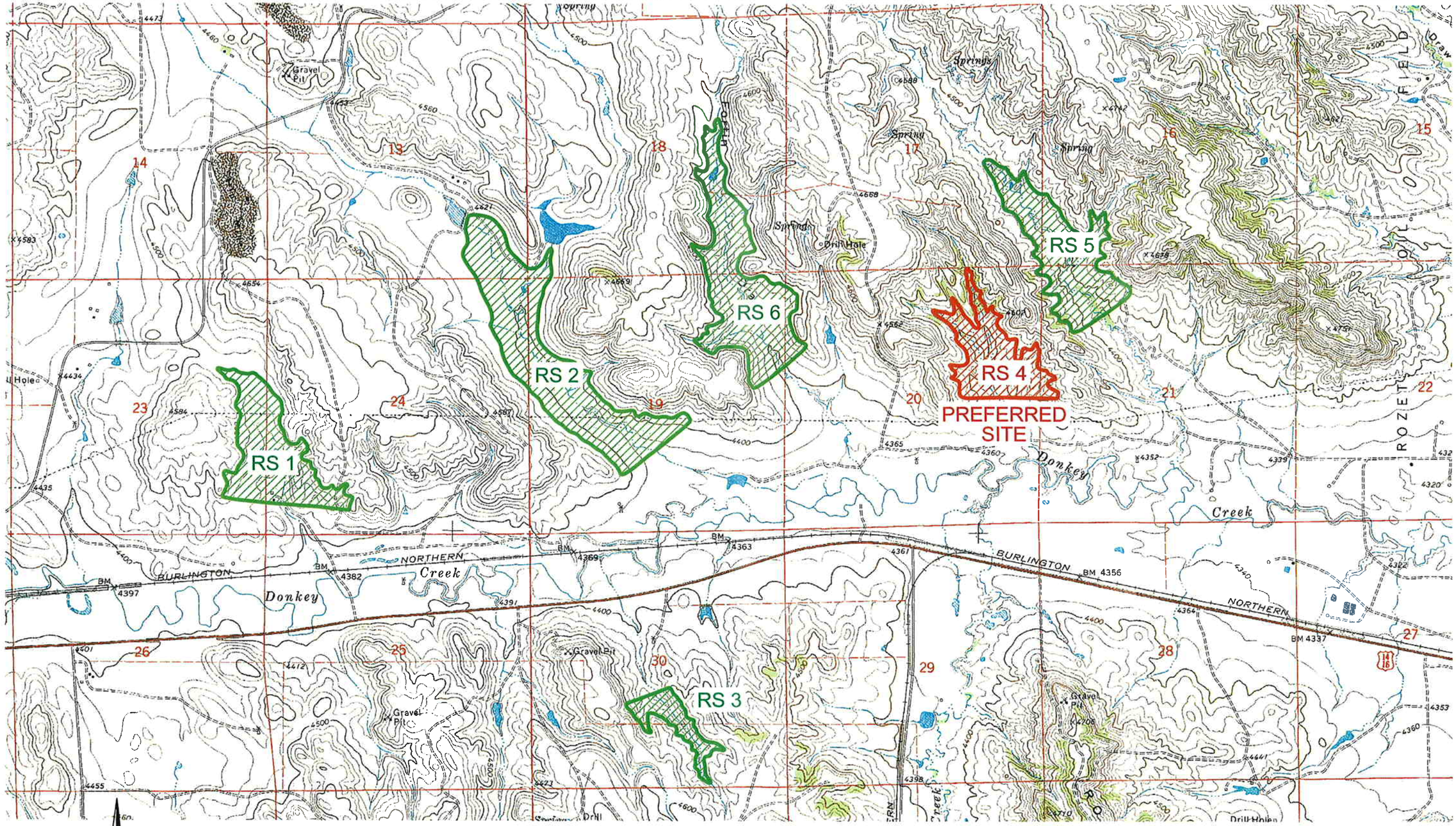
PROJECT NO.
4323.001-0211

FIGURE NUMBER
FIG 8-18

V:\4323\ACAD\FIGURES\FIGURES.dwg Plotted by rlarance on Jun/13/2007

Figure 8-19
Monthly Per Capita Consumption Versus Existing Capacity





POTENTIAL RESERVOIR SITE	TOP ELEVATION
RS 1	4500
RS 2	4420
RS 3	4500
RS 4	4440
RS 5	4450
RS 6	4480

-N-

2000 1000 0 2000 4000

SCALE IN FEET

MORRISON MAIERLE, INC.
An Employee-Owned Company
Engineers Surveyors Scientists Planners
2020 Grand Avenue
Billings MT 59102
Phone: (406) 656-6000
Fax: (406) 656-3432
COPYRIGHT © MORRISON-MAIERLE, INC., 2007

DRAWN BY: RLL
CHK'D. BY: JC
APPR. BY: ???
DATE: 6/2007

GILLETTE — CITY OF GILLETTE LONG TERM WATER SUPPLY STUDY — WYOMING

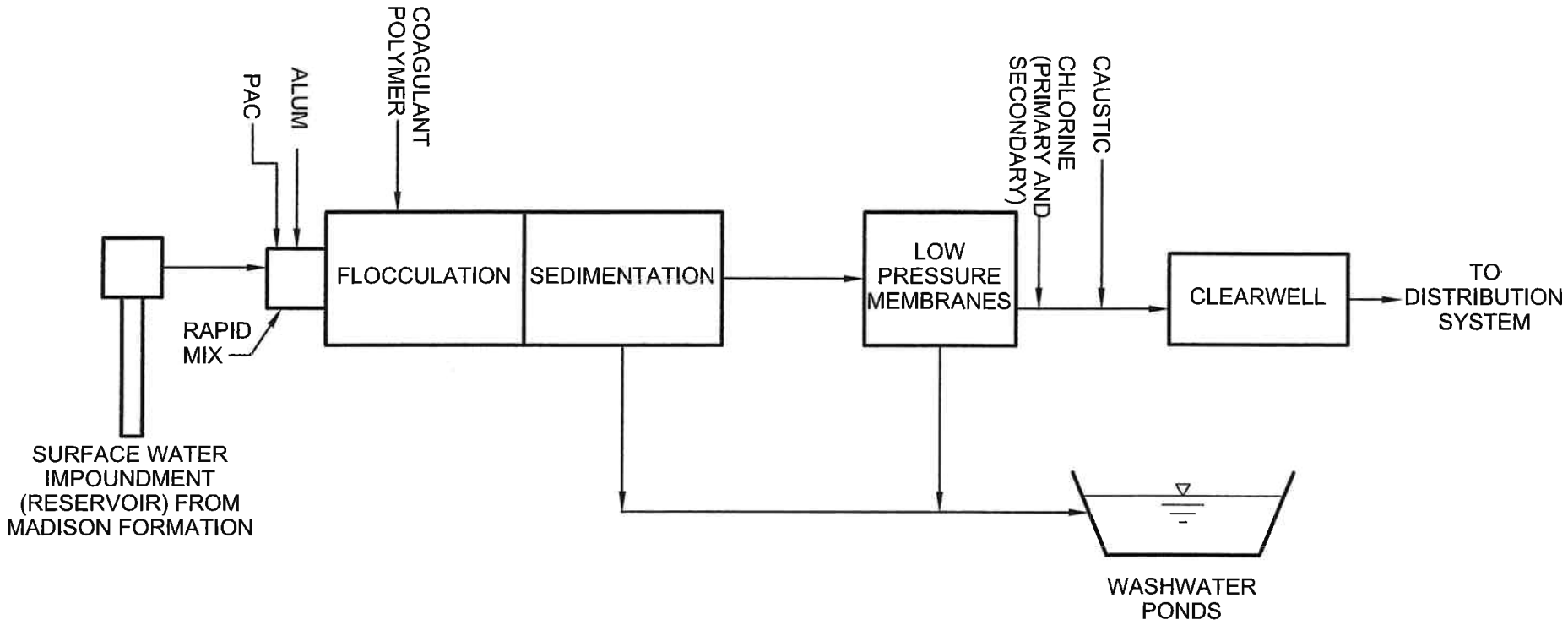
POTENTIAL RESERVOIR SITES

PROJECT NO. 4323.001-0211

FIGURE NUMBER FIG 8-20

V:\4323\ACAD\FIGURES\FIGURES.dwg Plotted by rlarance on Jun/13/2007

COPYRIGHT © 2007 BURNS & McDONNELL ENGINEERING COMPANY, INC.

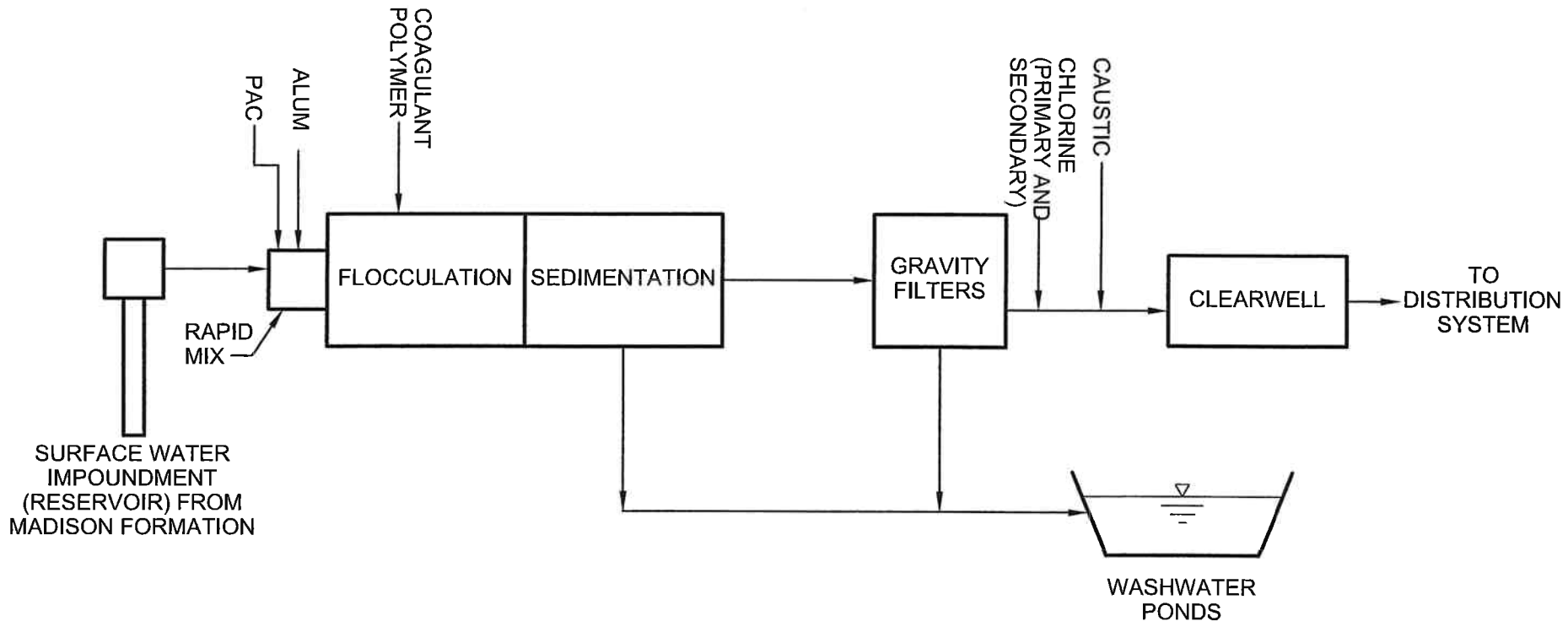


Burns & McDonnell SINCE 1898

Figure 8-21

WTP PROCESS WITH LOW PRESSURE MEMBRANES

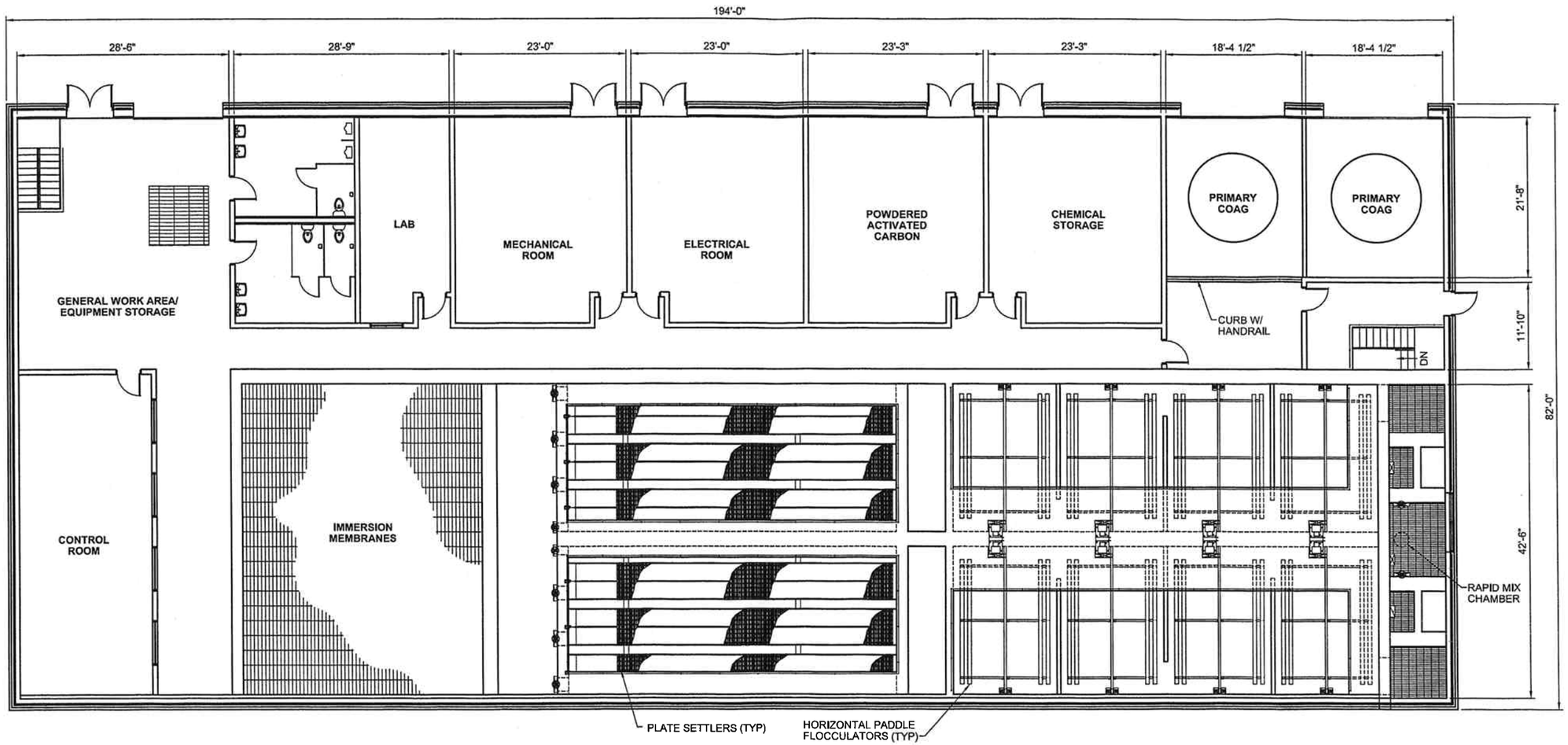
COPYRIGHT © 2007 BURNS & McDONNELL ENGINEERING COMPANY, INC.



Burns & McDonnell SINCE 1898

Figure 8-22

WTP PROCESS WITH GRAVITY FILTERS



UPPER FLOOR PROCESS PLAN

0 4' 8' 16'

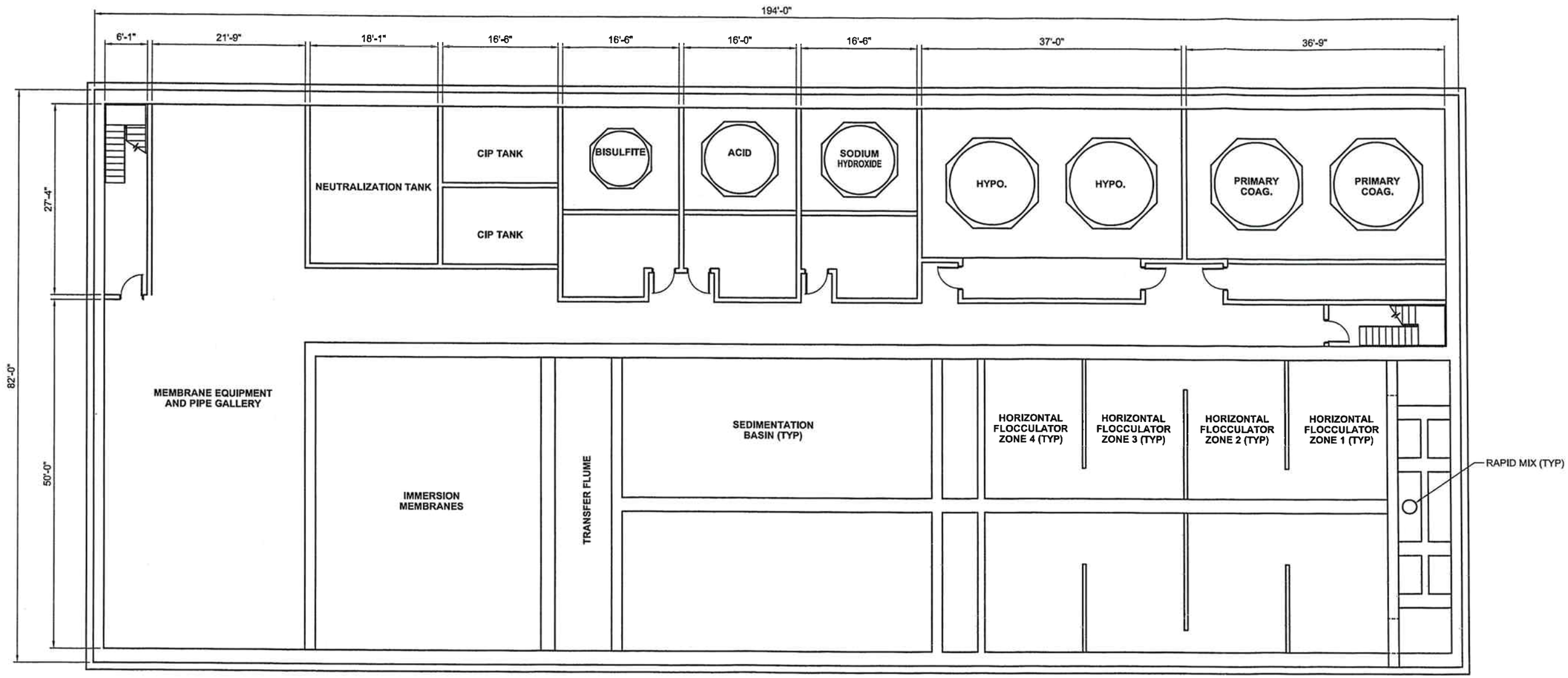
SCALE IN FEET

Figure 8-23

SURFACE WATER
IMPOUNDMENT-9 MGD
IMMERSED MEMBRANES

COPYRIGHT © 2006 BURNS & McDONNELL ENGINEERING COMPANY, INC.

J:\GILLETTE\44678-LEVEL II STUDY\CADD\PROCESS\FIGURES\FIGURE 8-23.DWG 06-13-2007 8:45 R_FULK



LOWER FLOOR PROCESS PLAN

0 4' 8' 16'

SCALE IN FEET

Burns & McDonnell SINCE 1898

Figure 8-24

SURFACE WATER IMPOUNDMENT-9 MGD IMMERSION MEMBRANES

COPYRIGHT © 2006 BURNS & McDONNELL ENGINEERING COMPANY, INC.

JAGILLETTE\14676-LEVEL II STUDY\CADD\PROCESS\FIGURES\FIGURE 8-24.DWG 06-13-2007 8:44 R_FULK

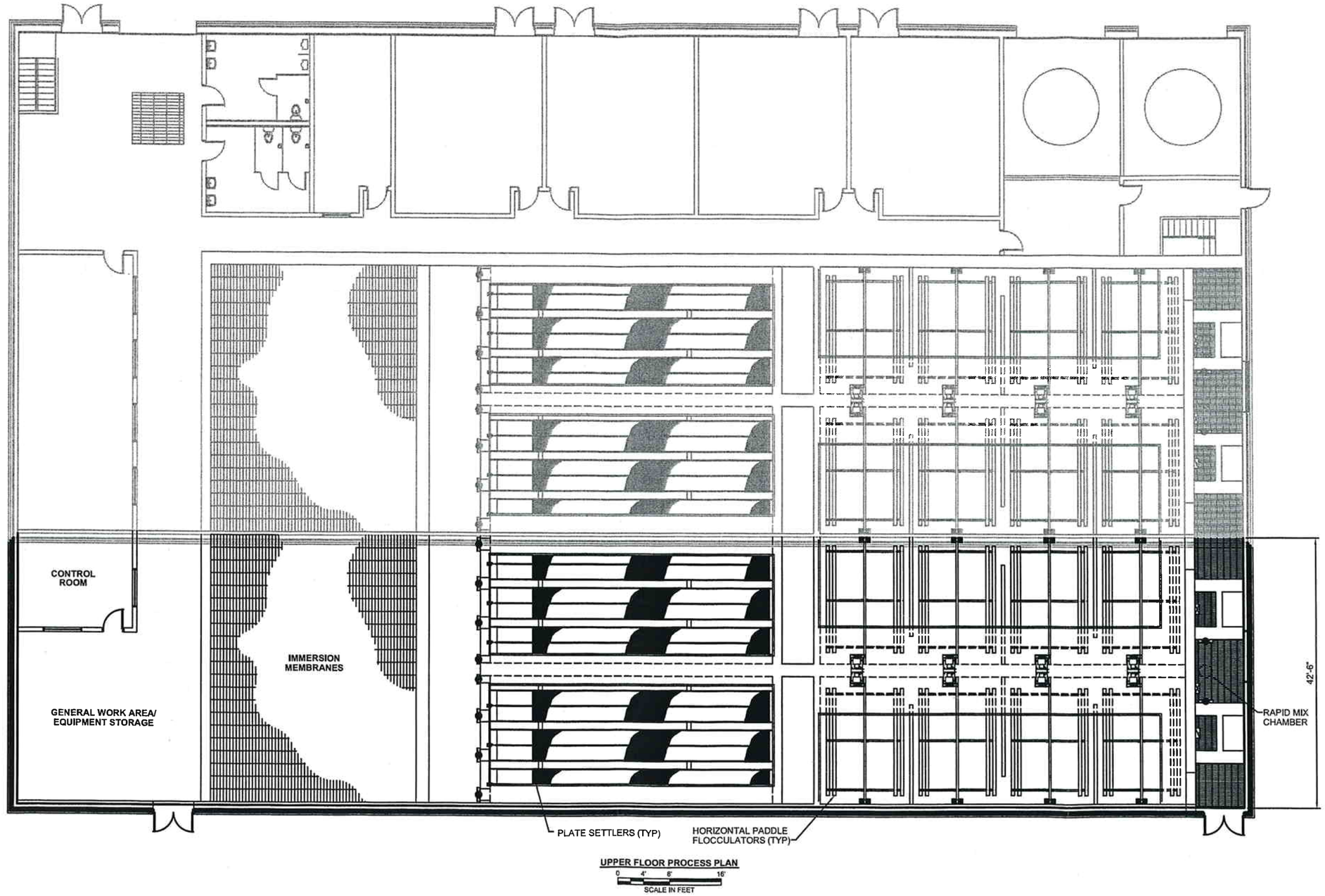
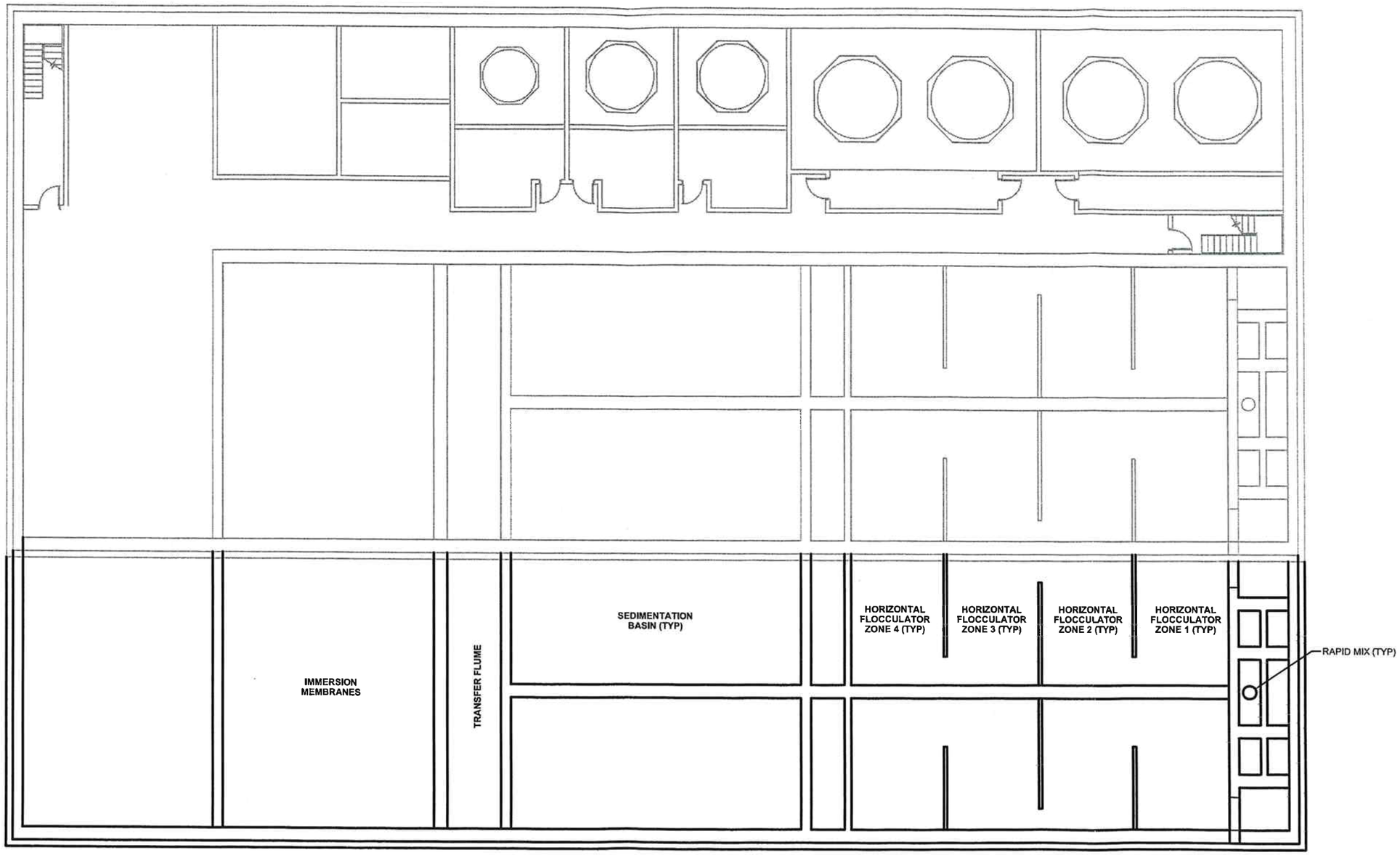


Figure 8-25

SURFACE WATER IMPOUNDMENT-18 MGD IMMERSED MEMBRANES

COPYRIGHT © 2007 BURNS & McDONNELL ENGINEERING COMPANY, INC.

J:\GILLETTE\44678-LEVEL II STUDY\CADD\PROCESS\FIGURES\FIGURE 8-25.DWG 06-13-2007 8:43 R_FULK



LOWER FLOOR PROCESS PLAN

0 4' 8' 16'
SCALE IN FEET

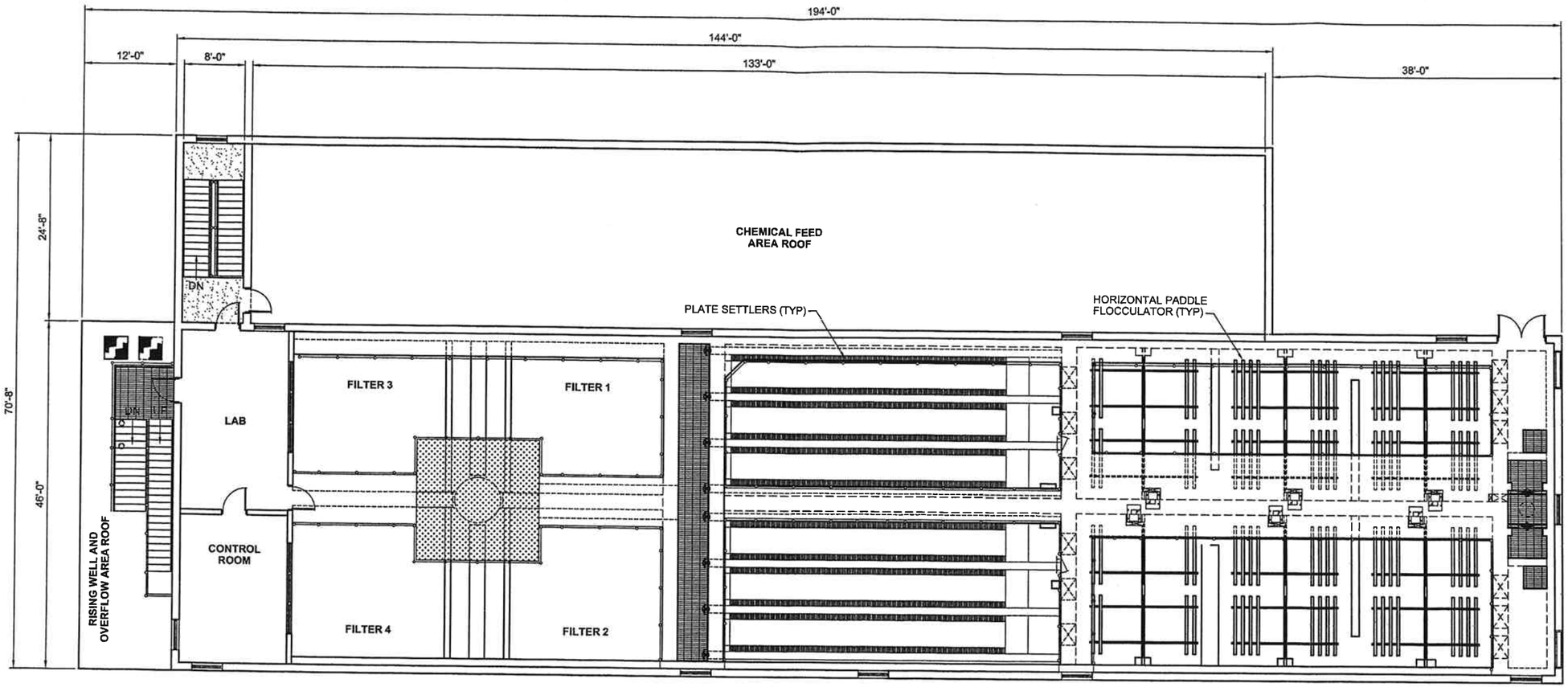
Burns & McDonnell
SINCE 1898

Figure 8-26

SURFACE WATER IMPOUNDMENT-18 MGD IMMERSION MEMBRANES

COPYRIGHT © 2007 BURNS & McDONNELL ENGINEERING COMPANY, INC.

J:\GILLETTE\44676-LEVEL II STUDY\CADD\PROCESS\FIGURES\FIGURE 8-26.DWG 06-13-2007 8:42 R_FULK



UPPER FLOOR PROCESS PLAN

0 4' 8' 16'
SCALE IN FEET

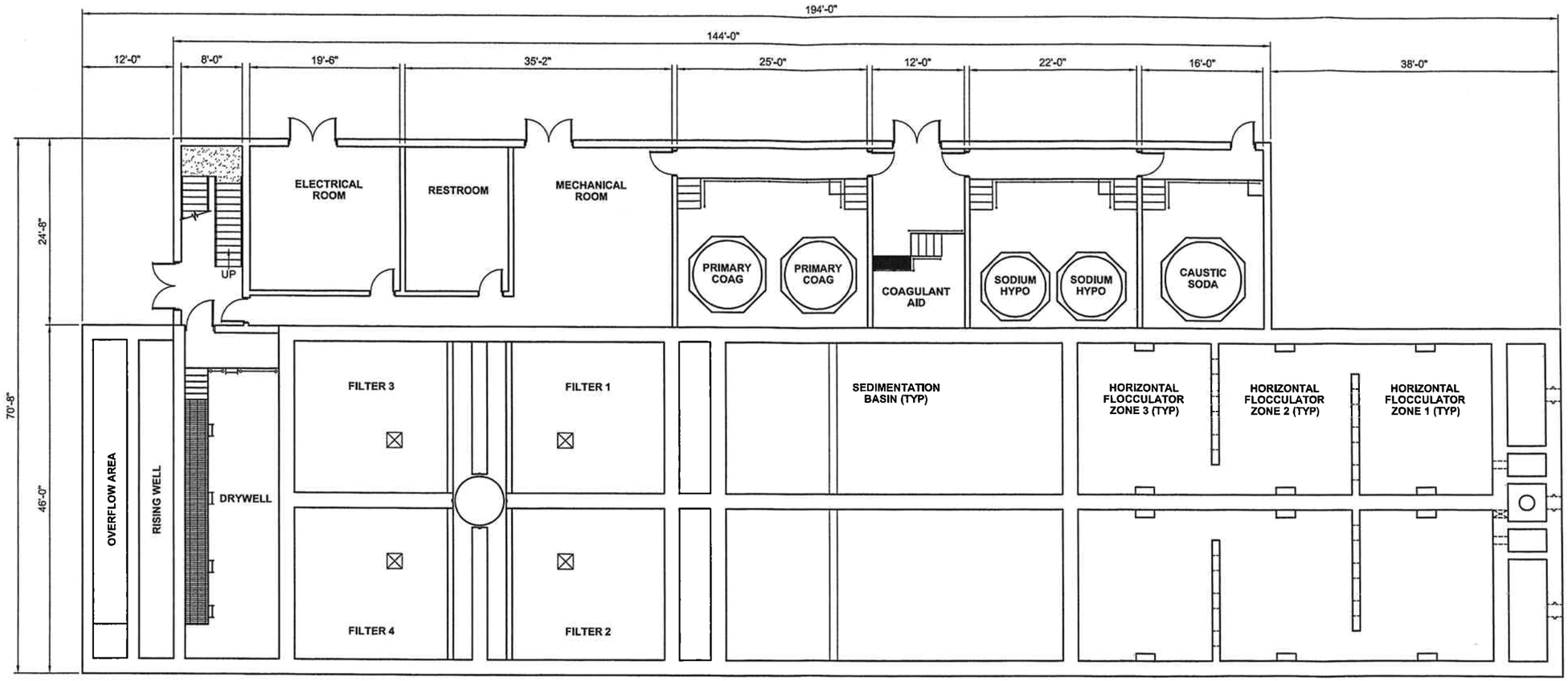
COPYRIGHT © 2007 BURNS & McDONNELL ENGINEERING COMPANY, INC.

J:\GILLETTE\44678-LEVEL II STUDY\CADD\PROCESS\FIGURES\FIGURE 8-27.DWG 06-13-2007 8:41 R_FULK

Burns & McDonnell
SINCE 1898

Figure 8-27

SURFACE WATER IMPOUNDMENT-9MGD CONVENTIONAL FILTERS



LOWER FLOOR PROCESS PLAN

0 4' 8' 16'
SCALE IN FEET

Figure 8-28

SURFACE WATER IMPOUNDMENT-9MGD CONVENTIONAL FILTERS

COPYRIGHT © 2007 BURNS & McDONNELL ENGINEERING COMPANY, INC.

J:\GILLETTE\44678-LEVEL II STUDY\CADD\PROCESS\FIGURES\FIGURE 8-28.DWG 06-13-2007 8:40 R_FULK

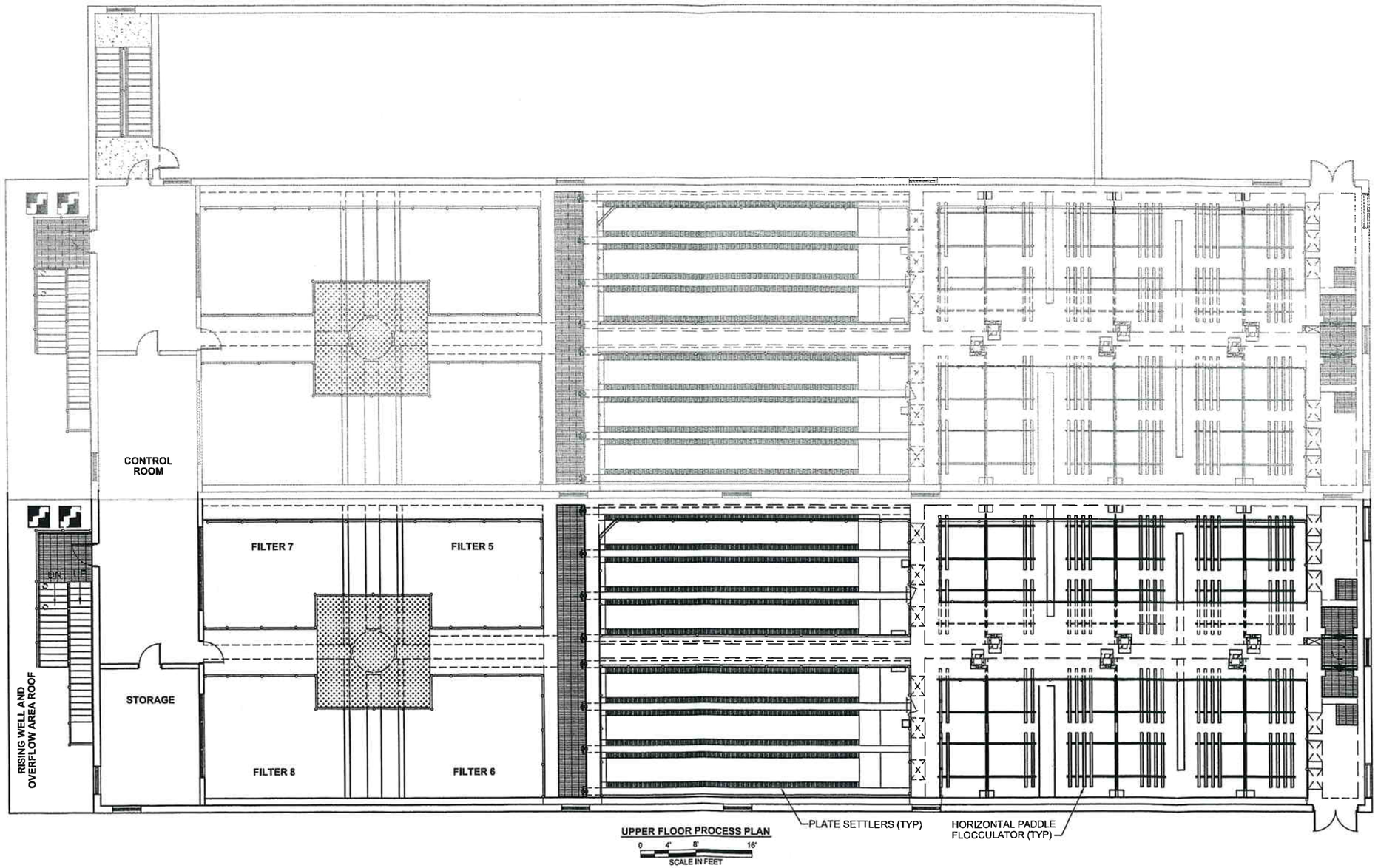
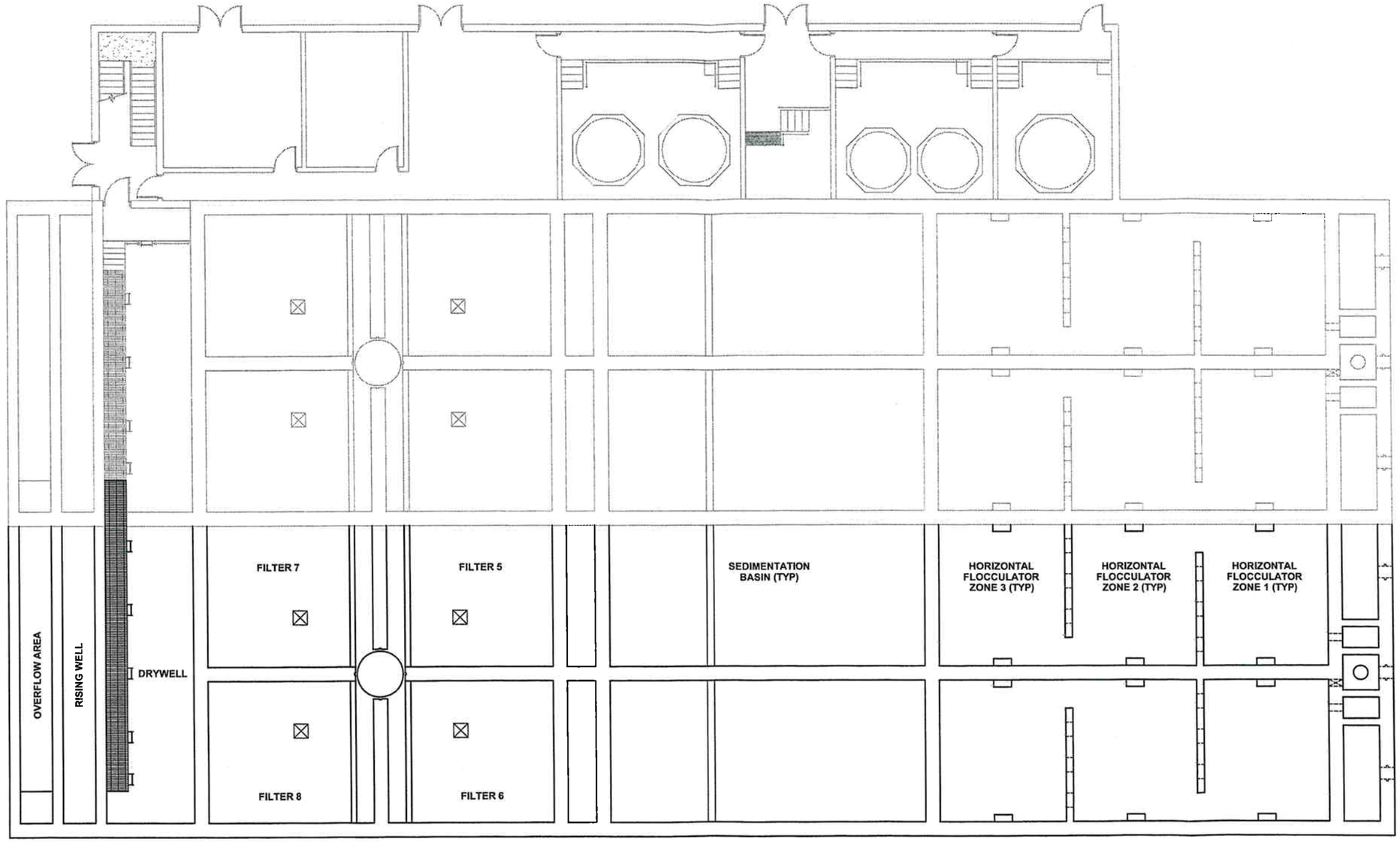


Figure 8-29

SURFACE WATER IMPOUNDMENT-18 MGD CONVENTIONAL FILTERS

COPYRIGHT © 2007 BURNS & McDONNELL ENGINEERING COMPANY, INC.

J:\GILLETTE\44678-LEVEL II STUDY\CADD\PROCESS\FIGURES\FIGURE 8-29.DWG 06-13-2007 8:40 R_FULK



LOWER FLOOR PROCESS PLAN

0 4' 8' 16'
SCALE IN FEET

Burns & McDonnell
SINCE 1898

Figure 8-30

SURFACE WATER IMPOUNDMENT-18 MGD CONVENTIONAL FILTERS

COPYRIGHT © 2007 BURNS & McDONNELL ENGINEERING COMPANY, INC.

J:\GILLETTE\44678-LEVEL II STUDY\CADD\PROCESS\FIGURES\FIGURE 8-30.DWG 06-13-2007 8:39 R_FULK

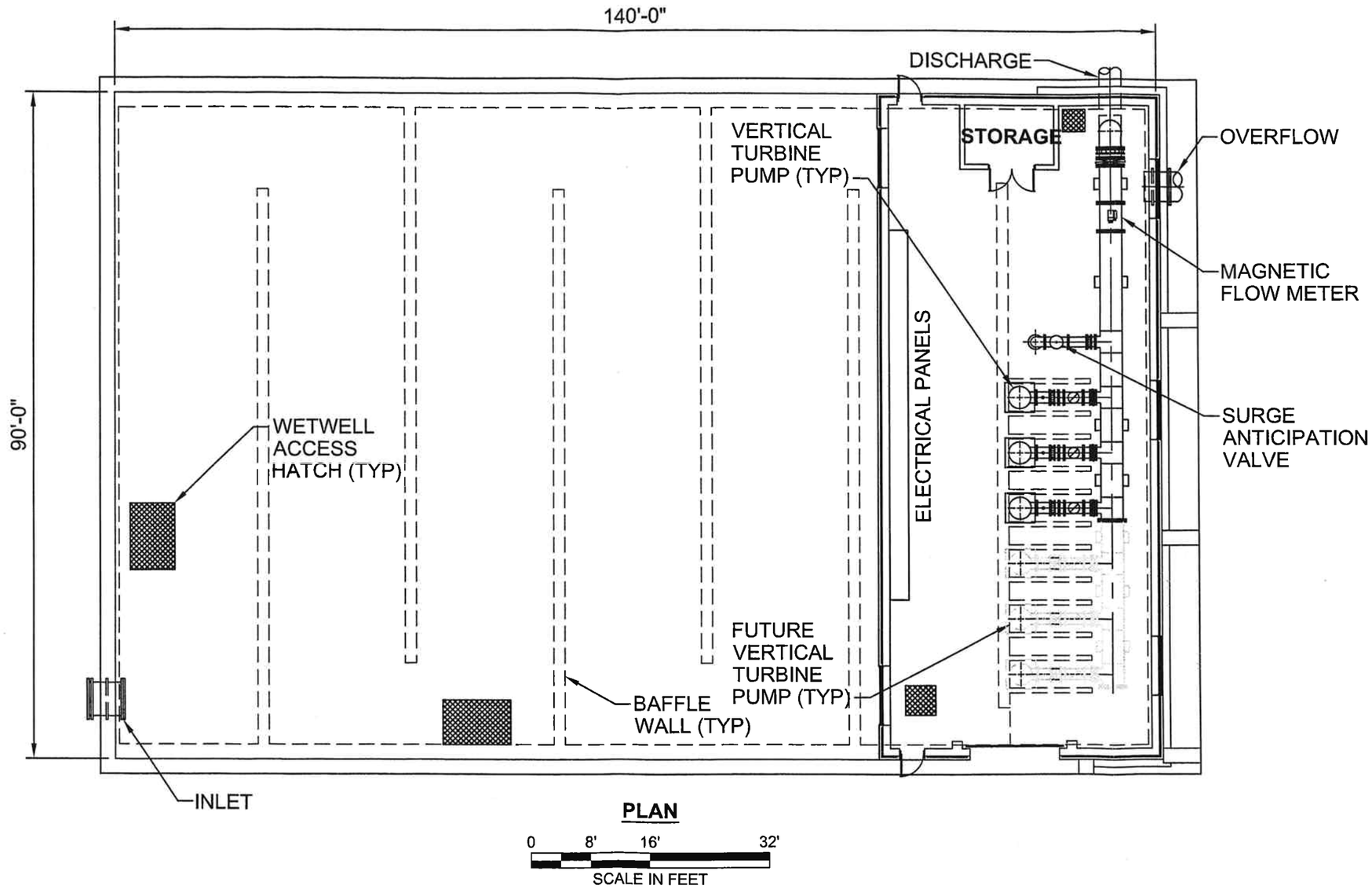


Figure 8-34

CLEARWELL AND HIGH SERVICE PUMP STATION PLAN

COPYRIGHT © 2007 BURNS & McDONNELL ENGINEERING COMPANY, INC.

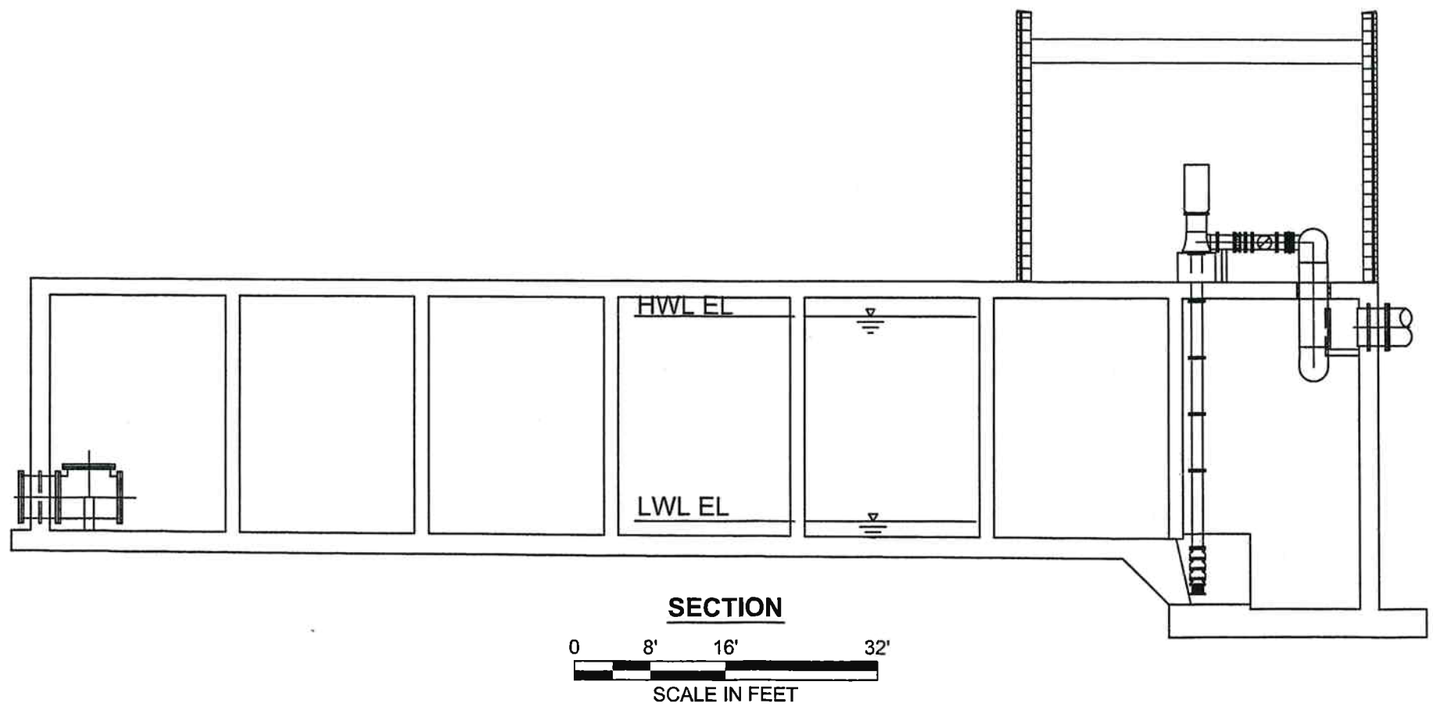


Figure 8-35

CLEARWELL AND HIGH SERVICE PUMP STATION SECTION

COPYRIGHT © 2007 BURNS & McDONNELL ENGINEERING COMPANY, INC.

Figure 9-1
Advanced Non-Economic Analysis

Criteria	Surface Reservoir	Pipeline	Importance	Surface Reservoir Ranking	Pipeline Ranking
Redundancy	+	++	10	10	20
Water Quality	+	+++	8	8	24
Difficulty of Operations/Logistics	+	+++	7	7	21
Compatibility with CBM Water Sources	+++	+	6	18	6
Future Regulatory Challenges	+	+++	6	6	18
Timeline to Implementation	+	++	8	8	16
Regionalization Potential	++	+++	3	6	9
Softening Synergy	+++	++	3	9	6
Longevity of Facilities	++	+++	9	18	27
			Total	90	147

Figure 10-1
City of Gillette Existing Rate Structure

City of Gillette 2007 Monthly Water Rates								
Rate Type	**Monthly Base Rate**	**Gallons in base**	**Tier price, $/1000 gal**	**Quantity, gal at tier**	**Tier price, $/1000 gal**	**Quantity, gal at tier**	**Tier price, $/1000 gal**	**Quantity, gal at tier**
Regular								
Residential	$6.90	3000	$2.16	3,001-35,000	$2.64	35,001-50,000	$3.30	>50,000
Commercial	$51.50	3000	$2.16	>3,000				
Bulk	$6.00	2000	$5.00	2,000-5,000	$10.00	>5,000		
Extraterritorial Service								
Residential	$10.35	3000	$3.27	3,001-35,000	$3.96	35,001-50,000	$4.95	>50,000
Commercial	$77.25	3000	$3.27	>3000				
Bulk	$6.00	2000	$5.00	2,000-5,000	$10.00	>5,000		
Wholesale Firm								
Water meter size								
1-1/2" or less	$9.23	3000	$3.68	>3000				
>1-1/2 "	$30.35	3000	$3.68	>3000				
Wholesale Seasonal-Peak								
Water meter size								
1-1/2" or less	$9.23	3000	$5.12	>3000				
>1-1/2 "	$30.35	3000	$5.12	>3000				

Extraterritorial Service Rates apply to all customers receiving water service outside of Gillette, who are not receiving service pursuant to a contract setting a different rate for water.

Wholesale Firm Rates apply to wholesale customers who are constantly connected to the City's water supply system and take a minimum amount of water throughout the year.

Wholesale Seasonal Peak Rates apply to wholesale customers who receive a fixed amount of water during the City's seasonal peak months of May 1 - Oct 31.

Figure 10-2
New Madison Pieline Alternative Funding Scenario #1

New Madison Pipeline Alternative	
Total Capital Cost	$159,393,000
2015 Capital Cost (Inflated 5%/Year)	$203,430,347
Capital Cost Eligible for WWDC Grant	$203,430,347
WWDC Grant (67% of Eligible Amount)	$136,298,333
WWDC Local Match Required (33% of Eligible Costs)	$67,132,015
Capital Cost Not Eligible for WWDC Grant	$0
Additional Grant/Cash Funding	$0
DWSRF Origination Fee (0.5%)	$335,660
Capital Required to Borrow	$67,467,675
Annnual Loan Payment (2.5% Interest, 30 Years)	$3,223,446
Annual Operation and Maintenance Costs	$200,180
Annual Commitment	$3,423,626
Annual Cost per EDU	$318.45
Monthly Cost per EDU	***$26.54***

Figure 10-3
New Madison Pieline Alternative Funding Scenario #2

New Madison Pipeline Alternative	
Total Capital Cost	$159,393,000
2015 Capital Cost (Inflated 5%/Year)	$203,430,347
Capital Cost Eligible for Funding	$203,430,347
Budget Reserve Account Grant (67% of Eligible Amount)	$136,298,333
Budget Reserve Loan (33% of Eligible Costs)	$67,132,015
Capital Cost Not Eligible for Grant	$0
Additional Grant/Cash Funding	$0
Capital Required to Borrow	$67,132,015
Annnual Loan Payment (4.0% Interest, 30 Years)	$3,882,251
Annual Operation and Maintenance Costs	$200,180
Annual Commitment	$4,082,431
Annual Cost per EDU	$379.73
Monthly Cost per EDU	***$31.64***

Figure 10-5
Surface Water Reservoir Alternative Funding Scenario #2

Surface Water Reservoir With Treatment

Total Capital Cost	$101,103,000
2015 Capital Cost (Inflated 5%/Year)	$129,035,895
Capital Cost Eligible for Funding	$129,035,895
Budget Reserve Account Grant (67% of Eligible Amount)	$129,035,895
Budget Reserve Loan (33% of Eligible Costs)	$42,581,845
Capital Cost Not Eligible for Grant	$0
Additional Grant/Cash Funding	$0
Capital Required to Borrow	$42,581,845
Annnual Loan Payment (4.0% Interest, 30 Years)	$2,462,512
Annual Operation and Maintenance Costs	$753,513
9 MGD Expansion in 2023 (2023 Dollars @ 5%/Year)	$33,045,515
Funding 9MDG Expansion @ 6% Funding (Bond)	$997,549
Annual Commitment	$4,213,574
Annual Cost per EDU	$391.92
Monthly Cost per EDU	***$32.66***

Figure 10-7
ASR Alternative Funding Scenario #2

ASR

Total Capital Cost	$145,606,000
2015 Capital Cost (Inflated 5%/Year)	$185,834,253
Capital Cost Eligible for Funding	$185,834,253
Budget Reserve Account Grant (67% of Eligible Amount)	$124,508,950
Budget Reserve Loan (33% of Eligible Costs)	$61,325,304
Capital Cost Not Eligible for Grant	$0
Additional Grant/Cash Funding	$0
Capital Required to Borrow	$61,325,304
Annnual Loan Payment (4.0% Interest, 30 Years)	$3,546,448
Annual Operation and Maintenance Costs	$244,276
Annual Commitment	$3,790,724
Annual Cost per EDU	$352.59
Monthly Cost per EDU	***$29.38***

Figure 10-10
City of Gillette Proposed Rate Structure - New Madison Pipeline Alternative - Scenario #1

City of Gillette Monthly Water Rates ($1.86/1,000 gallons Increase)*									
Rate Type	**Monthly Base Rate**	**EDU's**	**Gallons in base**	**Tier price, $/1000 gal**	**Quantity, gal at tier**	**Tier price, $/1000 gal**	**Quantity, gal at tier**	**Tier price, $/1000 gal**	**Quantity, gal at tier**
Regular									
Residential	$12.48	1	3,000	$4.16	3,001-35,000	$5.16	35,001-50,000	$6.16	>50,000
Commercial (Up to 2" Meter)	$75.00	6	3,000	$4.16	>3,000				
Commercial (3" Meter)	$218	18	10,000	$4.16					
Commercial (4" Meter)	$465	38	25,000	$4.16					
Commercial (6" Meter)	$1,350	111	50,000	$4.16					
Commercial (8" Meter)	$2,875	237	50,000	$4.16					
Bulk	$10.55		2,000	$9.55	2,000-5,000	$14.55	>5,000		
Extraterritorial Service									
Residential	$18.18		3,000	$6.24	3,001-35,000	$6.24	35,001-50,000	$7.24	>50,000
Commercial	$700		3,000	$6.24	>3,000				
Bulk	$10.55		2,000	$9.55	2,000-5,000	$14.55	>5,000		
Wholesale Firm									
Water meter size									
1-1/2" or less	$16.10		3,000	$7.28	>3,000				
>1-1/2 "	$100		3,000	$7.28	>3,000				
Wholesale Seasonal-Peak									
Water meter size									
1-1/2" or less	$16.10		3,000	$8.32	>3,000				
>1-1/2 "	$100		3,000	$8.32	>3,000				

* *This rate is based on raw debt service costs and do not include a reserve, fee or any other demands other than pure debt service from the funding agencies. Any such rulles will increase these rates.*

Figure 10-11
City of Gillette Proposed Rate Structure - New Madison Pipeline Alternative - Scenario #2

City of Gillette Monthly Water Rates ($2.21/1,000 gallons Increase)*									
Rate Type	**Monthly Base Rate**	**EDU's**	**Gallons in base**	**Tier price, $/1000 gal**	**Quantity, gal at tier**	**Tier price, $/1000 gal**	**Quantity, gal at tier**	**Tier price, $/1000 gal**	**Quantity, gal at tier**
Regular									
Residential	$13.11	1	3,000	$4.51	3,001-35,000	$5.50	35,001-50,000	$6.50	>50,000
Commercial (Up to 2" Meter)	$75.00	6	3,000	$4.51	>3,000				
Commercial (3" Meter)	$218	18	10,000	$4.51					
Commercial (4" Meter)	$465	38	25,000	$4.51					
Commercial (6" Meter)	$1,350	111	50,000	$4.51					
Commercial (8" Meter)	$2,875	237	50,000	$4.51					
Bulk	$10.55		2,000	$9.55	2,000-5,000	$14.55	>5,000		
Extraterritorial Service									
Residential	$18.18		3,000	$6.77	3,001-35,000	$6.80	35,001-50,000	$7.80	>50,000
Commercial	$700		3,000	$6.77	>3,000				
Bulk	$10.55		2,000	$9.55	2,000-5,000	$14.55	>5,000		
Wholesale Firm									
Water meter size									
1-1/2" or less	$16.10		3,000	$7.89	>3,000				
>1-1/2 "	$100		3,000	$7.89	>3,000				
Wholesale Seasonal-Peak									
Water meter size									
1-1/2" or less	$16.10		3,000	$9.02	>3,000				
>1-1/2 "	$100		3,000	$9.02	>3,000				

* *This rate is based on raw debt service costs and do not include a reserve, fee or any other demands other than pure debt service from the funding agencies. Any such rulles will increase these rates.*

Figure 10-12
City of Gillette Proposed Rate Structure - Surface Water Impoundment-Scenario #1

City of Gillette Monthly Water Rates ($2.70/1,000 gallons Increase)*									
Rate Type	**Monthly Base Rate**	**EDU's**	**Gallons in base**	**Tier price, $/1000 gal**	**Quantity, gal at tier**	**Tier price, $/1000 gal**	**Quantity, gal at tier**	**Tier price, $/1000 gal**	**Quantity, gal at tier**
Regular									
Residential	$15.00	1	3,000	$5.00	3,001-35,000	$6.00	35,001-50,000	$7.00	>50,000
Commercial (Up to 2" Meter)	$90.00	6	3,000	$5.00	>3,000				
Commercial (3" Meter)	$260	18	10,000	$5.00					
Commercial (4" Meter)	$560	38	25,000	$5.00					
Commercial (6" Meter)	$1,625	111	50,000	$5.00					
Commercial (8" Meter)	$3,450	237	50,000	$5.00					
Bulk	$12.65		2000	$11.65	2,000-5,000	$16.65	>5,000		
Extraterritorial Service									
Residential	$22.50		3,000	$7.50	3,001-35,000	$8.50	35,001-50,000	$9.50	>50,000
Commercial	$840		3,000	$7.50	>3000				
Bulk	12.65		2,000	$11.65	2,000-5,000	$23.30	>5,000		
Wholesale Firm									
Water meter size									
1-1/2" or less	$19.35		3,000	$8.25	>3,000				
>1-1/2 "	$120		3,000	$8.25	>3,000				
Wholesale Seasonal-Peak									
Water meter size									
1-1/2" or less	$19.35		3,000	$10.00	>3,000				
>1-1/2 "	$120		3,000	$10.00	>3,000				

* *This rate is based on raw debt service costs and do not include a reserve, fee or any other demands other than pure debt service from the funding agencies. Any such rulles will increase these rates.*

Figure 10-13
City of Gillette Proposed Rate Structure - Surface Water Impoundment - Scenario #2

City of Gillette Monthly Water Rates ($2.28/1,000 gallons Increase)*									
Rate Type	**Monthly Base Rate**	**EDU's**	**Gallons in base**	**Tier price, $/1000 gal**	**Quantity, gal at tier**	**Tier price, $/1000 gal**	**Quantity, gal at tier**	**Tier price, $/1000 gal**	**Quantity, gal at tier**
Regular									
Residential	$13.74	1	3,000	$4.58	3,001-35,000	$5.75	35,001-50,000	$6.75	>50,000
Commercial (Up to 2" Meter)	$90.00	6	3,000	$4.58	>3,000				
Commercial (3" Meter)	$260	18	10,000	$4.58					
Commercial (4" Meter)	$560	38	25,000	$4.58					
Commercial (6" Meter)	$1,625	111	50,000	$4.58					
Commercial (8" Meter)	$3,450	237	50,000	$4.58					
Bulk	$12.65		2000	$11.65	2,000-5,000	$16.65	>5,000		
Extraterritorial Service									
Residential	$20.61		3,000	$6.87	3,001-35,000	$8.00	35,001-50,000	$9.00	>50,000
Commercial	$840		3,000	$6.87	>3000				
Bulk	12.65		2,000	$11.65	2,000-5,000	$23.30	>5,000		
Wholesale Firm									
Water meter size									
1-1/2" or less	$19.35		3,000	$8.01	>3,000				
>1-1/2 "	$120		3,000	$8.01	>3,000				
Wholesale Seasonal-Peak									
Water meter size									
1-1/2" or less	$19.35		3,000	$9.16	>3,000				
>1-1/2 "	$120		3,000	$9.16	>3,000				

* *This rate is based on raw debt service costs and do not include a reserve, fee or any other demands other than pure debt service from the funding agencies. Any such rulles will increase these rates.*

Figure 10-14
City of Gillette Proposed Rate Structure - ASR - Scenario #1

City of Gillette Monthly Water Rates ($1.73/1,000 gallons Increase)*									
Rate Type	**Monthly Base Rate**	**EDU's**	**Gallons in base**	**Tier price, $/1000 gal**	**Quantity, gal at tier**	**Tier price, $/1000 gal**	**Quantity, gal at tier**	**Tier price, $/1000 gal**	**Quantity, gal at tier**
Regular									
Residential	$12.09	1	3,000	$4.03	3,001-35,000	$5.00	35,001-50,000	$6.00	>50,000
Commercial (Up to 2" Meter)	$35.00	6	3,000	$4.03	>3,000				
Commercial (3" Meter)	$75.00	18	10,000	$4.03	>10,000				
Commercial (4" Meter)	$215	38	25,000	$4.03	>25,000				
Commercial (6" Meter)	$1,330	111	50,000	$4.03	>50,000				
Commercial (8" Meter)	$2,840	237	50,000	$4.03	>50,000				
Bulk	$8.00		2,000	$7.00	2,000-5,000	$12.00	>5,000		
Extraterritorial Service									
Residential	$17.95		3,000	$6.04	3,001-35,000	$6.04	35,001-50,000	$7.03	>50,000
Commercial	$325.00		3,000	$6.04	>3,000				
Bulk	$8.00		2,000	$7.00	2,000-5,000	$12.00	>5,000		
Wholesale Firm									
Water meter size									
1-1/2" or less	$16.08		3,000	$7.05	>3,000				
>1-1/2 "	$46.55		3,000	$7.05	>3,000				
Wholesale Seasonal-Peak									
Water meter size									
1-1/2" or less	$16.08		3,000	$8.06	>3,000				
>1-1/2 "	$46.55		3,000	$8.06	>3,000				

* *This rate is based on raw debt service costs and do not include a reserve, fee or any other demands other than pure debt service from the funding agencies. Any such rulles will increase these rates.*

Figure 10-15
City of Gillette Proposed Rate Structure - ASR - Scenario #2

City of Gillette Monthly Water Rates ($2.05/1,000 gallons Increase)*									
Rate Type	**Monthly Base Rate**	**EDU's**	**Gallons in base**	**Tier price, $/1000 gal**	**Quantity, gal at tier**	**Tier price, $/1000 gal**	**Quantity, gal at tier**	**Tier price, $/1000 gal**	**Quantity, gal at tier**
Regular									
Residential	$13.05	1	3,000	$4.35	3,001-35,000	$5.50	35,001-50,000	$6.50	>50,000
Commercial (Up to 2" Meter)	$35.00	6	3,000	$4.35	>3,000				
Commercial (3" Meter)	$75.00	18	10,000	$4.35	>10,000				
Commercial (4" Meter)	$215	38	25,000	$4.35	>25,000				
Commercial (6" Meter)	$1,330	111	50,000	$4.35	>50,000				
Commercial (8" Meter)	$2,840	237	50,000	$4.35	>50,000				
Bulk	$8.00		2,000	$7.00	2,000-5,000	$12.00	>5,000		
Extraterritorial Service									
Residential	$17.95		3,000	$6.53	3,001-35,000	$6.53	35,001-50,000	$7.53	>50,000
Commercial	$325.00		3,000	$6.53	>3,000				
Bulk	$8.00		2,000	$7.00	2,000-5,000	$12.00	>5,000		
Wholesale Firm									
Water meter size									
1-1/2" or less	$17.36		3,000	$7.61	>3,000				
>1-1/2 "	$46.55		3,000	$7.61	>3,000				
Wholesale Seasonal-Peak									
Water meter size									
1-1/2" or less	$17.36		3,000	$8.70	>3,000				
>1-1/2 "	$46.55		3,000	$8.70	>3,000				

* *This rate is based on raw debt service costs and do not include a reserve, fee or any other demands other than pure debt service from the funding agencies. Any such rulles will increase these rates.*