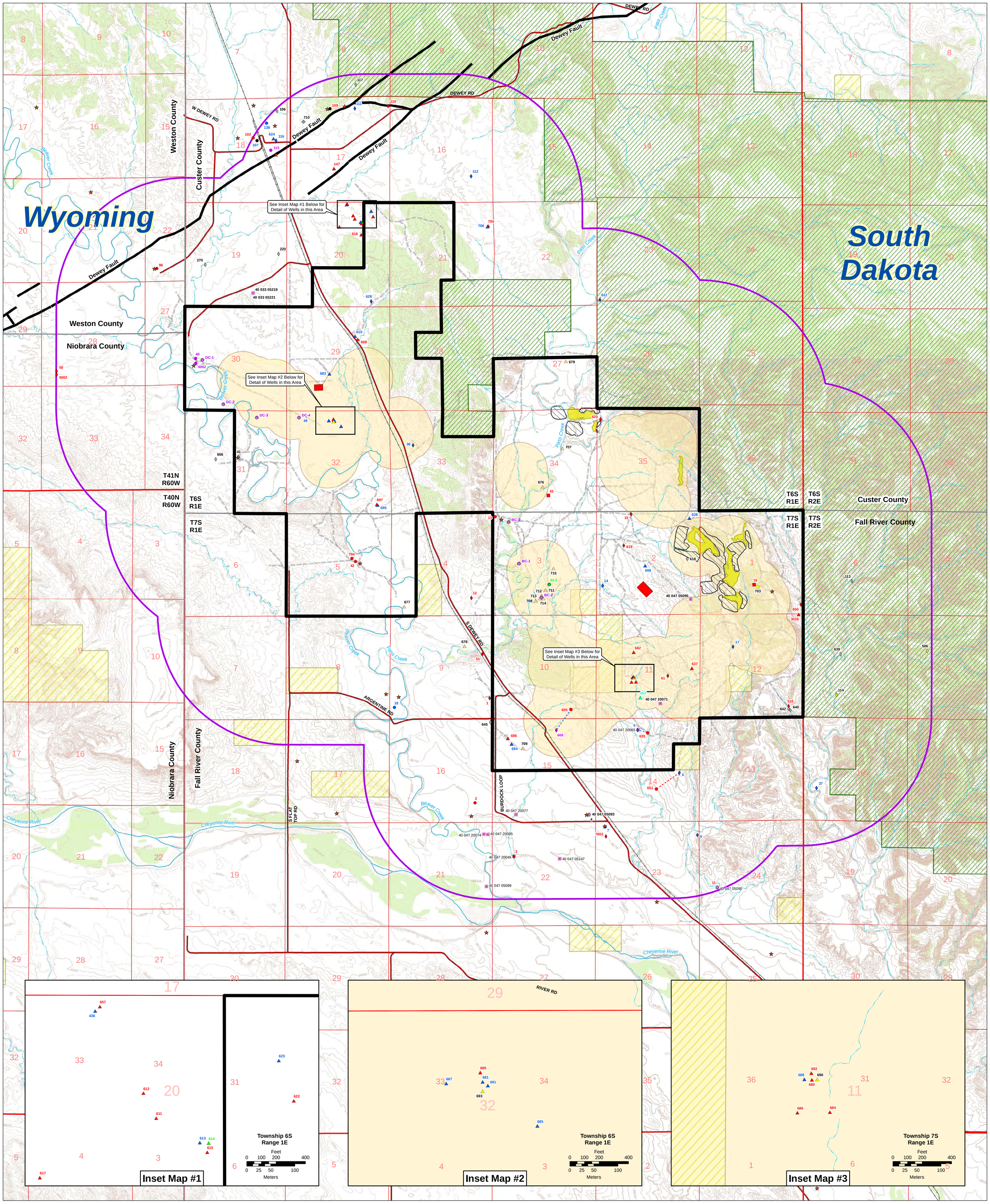


Legend

- Project Boundary
- 2 km from Project Boundary
- Black Hills National Forest
- BLM Land
- Processing Plants
- BNSF Railroad
- County Roads
- Unimproved, Light Use and 2-track Roads
- P&A Oil and Gas Well
- Residences
- Ephemeral Streams
- Perennial Streams
- Open Pit Uranium Mines
- Spoil Piles
- 1/4 Mile from Potential Well Field Area
- Current Pipeline from Well to Stock Watering Location
- Historical Pipeline from Well to Stock Watering Location
- Stock Watering Location
- Alluvial Compliance Well
- Alluvial Interior Well

Well Use

- Monitor
- Stock
- Irrigation
- Domestic
- Domestic Non-Drinking Water

Screened Interval

- Alluvium
- Fall River
- Fuson
- Chilson
- Inyan Kara
- Unknown
- Sundance
- Unkpapa

Feet
0 1,500 3,000 4,500 6,000
Meters
0 500 1,000 1,500 2,000

N

CONSULTANT

REVISIONS

#	DRAWN	CHECKED	APPROVED	DATE

REF 961

CHECK SCALES
If this bar does not measure 1 inch this map is not at its original scale

PLOT DATE 15-Jan-2013 DATE 15-Jan-2013
DRAWN S. Hetrick PDF FILE R961_Class3AOR.pdf COORDS NAD 27, South Dakota State Plane South (feet)
CHECKED J. Mays CAD FILE P:\Dewey-Burdock\Submittals\Class III\November UpdateClass3AOR.mxd
Arch E 36" x 48"

POWERTECH (USA) INC.

Plate 3.1

Area of Review Map

Dewey-Burdock Project

1,016,000 1,024,000 1,032,000 1,040,000

452,500 445,000 437,500 430,000 422,500

W DEWEY RD
DEWEY RD
S DEWEY RD
Pass Creek
Beaver Creek
Cheyenne River
ARGENTINE RD
BURDOCK LOOP

18 17 16 15 14 13
19 20 21 22 23 24
30 29 28 27 26 25
31 32 33 34 35 36
6 5 4 3 2 1
7 8 9 10 11 12
19 20 21 22 23 24

2700 2800 2900 3000 3100 3200 3300 3400 3500

See Dewey Area Enlargement
See Burdock Area Enlargement

Custer County
Fall River County

T6S R1E
T7S R1E

Dewey Area Enlargement

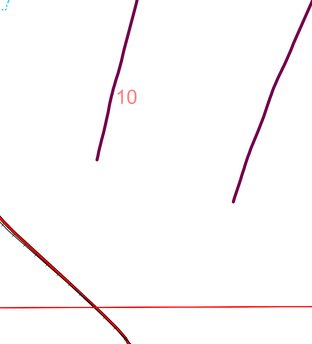
Feet
0 200 400 800
0 50 100 200
Meters

Burdock Area Enlargement

Feet
0 500 1,000 2,000 3,000 4,000
0 250 500 1,000
Meters

Legend

- Permit Boundary
- BNSF Railroad
- County Roads
- Ephemeral Streams
- Perennial Streams
- Initial Well Field Areas
- 3274 Measured Top of Unkpapa Sandstone (drill hole location is the center of text label)



CONSULTANT

REVISIONS

#	DRAWN	CHECKED	APPROVED	DATE

REF 905

CHECK SCALES

If this bar does not measure 1 inch this map is not at its original scale

Arch E 36" x 48"

POWERTECH (USA) INC.

Plate 6.1

Structure Map of the Top of Unkpapa Sandstone

Dewey-Burdock Project

PLOT DATE	26-Jul-2012	DATE	26-Jul-2012
DRAWN	Hetrick, Lichnovsky	PDF FILE	R905_UnkpapaStructure100.pdf
CHECKED	J. Mays	CAD FILE	P:\Dewey-Burdock\Submittals\Class III\UnkpapaStructure100.mxd
		COORDS	NAD 27, South Dakota State Plane South (feet)

1,016,000 1,024,000 1,032,000 1,040,000

452,500 445,000 437,500 430,000 422,500

W DEWEY RD
DEWEY RD
S DEWEY RD
Pass Creek
Beaver Creek
Cheyenne River
ARGENTINE RD
BURDOCK LOOP
See Dewey Area Enlargement
See Burdock Area Enlargement
Custer County
Fall River County
T6S R1E
T7S R1E

Dewey Area Enlargement

Feet
0 200 400 800
0 50 100 200
Meters

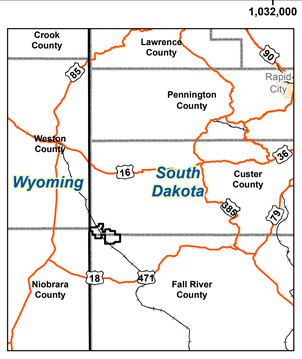
Burdock Area Enlargement

Feet
0 200 400 800
0 50 100 200
Meters

Feet
0 500 1,000 2,000 3,000 4,000
0 250 500 1,000
Meters

Legend

- Project Boundary
- BNSF Railroad
- County Roads
- Ephemeral Streams
- Perennial Streams
- Initial Well Field Areas
- 3173 Measured Top of Morrison Formation (drill hole location is the center of text label)



N

CONSULTANT	REVISIONS			
	#	DRAWN	CHECKED	APPROVED	DATE
REF 876					
CHECK SCALES: If this bar does not measure 1 inch this map is not at its original scale	PLOT DATE 24-Jul-2012	DATE 24-Jul-2012		
Arch E 36" x 48"	DRAWN Hetrick, Lichnovsky	PDF FILE R876_MorrisonStructure.pdf	COORDS NAD 27, South Dakota State Plane South (feet)	
	CHECKED J. Mays	CAD FILE P:\Dewey-Burdock\Submittals\Class III\MorrisonStructure50.mxd		

POWERTECH (USA) INC.

Plate 6.2

Structure Map of the Top of Morrison Formation

Dewey-Burdock Project

1,016,000 1,024,000 1,032,000 1,040,000

452,500 445,000 437,500 430,000 422,500

W DEWEY RD | DEWEY RD | S DEWEY RD | S DEWEY RD | S DEWEY RD | S DEWEY RD | S DEWEY RD | S DEWEY RD | BURDOCK LOOP | BURDOCK LOOP | ARGENTINE RD | ARGENTINE RD

Pass Creek | Beaver Creek | Cheyenne River

See Dewey Area Enlargement

See Burdock Area Enlargement

Custer County

Fall River County

T6S R1E | T7S R1E

Dewey Area Enlargement

Feet: 0 200 400 800 | 0 50 100 200 Meters

Burdock Area Enlargement

Feet: 0 200 400 800 | 0 50 100 200 Meters

Feet: 0 500 1,000 2,000 3,000 4,000 | 0 250 500 1,000 Meters

Legend

- Project Boundary
- BNSF Railroad
- County Roads
- Ephemeral Streams
- Perennial Streams
- Initial Well Field Areas
- Measured Top of Chilson Member (drill hole location is the center of text label)

Crook County | Lawrence County | Pennington County | Rapid City | Weston County | Wyoming | South Dakota | Custer County | Niobrara County | Fall River County

N

CONSULTANT

REVISIONS

#	DRAWN	CHECKED	APPROVED	DATE

REF 877

CHECK SCALES — If this bar does not measure 1 inch this map is not at its original scale

Arch E 36" x 48"

POWERTECH (USA) INC.

Plate 6.3
Structure Map of the Top of Chilson Member

Dewey-Burdock Project

PLOT DATE	02-Jul-2012	DATE	02-Jul-2012
DRAWN	Hetrick, Lichnovsky	PDF FILE	R877_ChilsonStructure50.pdf
CHECKED	J. Mays	CAD FILE	P:\Dewey-Burdock\Submittals\Class III\ChilsonStructure50.mxd

COORDS NAD 27, South Dakota State Plane South (feet)

1,016,000 1,024,000 1,032,000 1,040,000

452,500 445,000 437,500 430,000 422,500

W DEWEY RD
DEWEY RD
S DEWEY RD
Pass Creek
Beaver Creek
Cheyenne River
ARGENTINE RD
BURDOCK LOOP
See Dewey Area Enlargement
See Burdock Area Enlargement
Custer County
Fall River County
T6S R1E
T7S R1E

Dewey Area Enlargement

Feet
0 200 400 800
0 50 100 200
Meters

Burdock Area Enlargement

Feet
0 200 400 800
0 50 100 200
Meters

Feet
0 500 1,000 2,000 3,000 4,000
0 250 500 1,000
Meters

Crook County
Lawrence County
Pennington County
Weston County
Custer County
Niobrara County
Fall River County
Rapid City
Wyoming
South Dakota

N

Legend

- Project Boundary
- BNSF Railroad
- County Roads
- Ephemeral Streams
- Perennial Streams
- Initial Well Field Areas
- Measured Top of Fuson Shale (drill hole location is the center of text label)

CONSULTANT

REVISIONS

#	DRAWN	CHECKED	APPROVED	DATE

REF 878

CHECK SCALES
If this bar does not measure 1 inch this map is not at its original scale

Arch E 36" x 48"

PLOT DATE 02-Jul-2012 DATE 02-Jul-2012
DRAWN Hetrick, Lichnovsky PDF FILE R878_FusonStructure.pdf COORDS NAD 27, South Dakota State Plane South (feet)
CHECKED J. Mays CAD FILE P:\Dewey-Burdock\Submittals\Class III\FusonStructure.mxd

POWERTECH (USA) INC.

Plate 6.4
Structure Map of the Top of Fuson Shale

Dewey-Burdock Project

1,016,000 1,024,000 1,032,000 1,040,000

452,500 445,000 437,500 430,000 422,500

W DEWEY RD
DEWEY RD
S DEWEY RD
Pass Creek
Beaver Creek
Cheyenne River
ARGENTINE RD
BURDOCK LOOP

See Dewey Area Enlargement
See Burdock Area Enlargement

Custer County
Fall River County

T6S R1E
T7S R1E

Dewey Area Enlargement

Feet
0 200 400 800
0 50 100 200
Meters

Burdock Area Enlargement

Feet
0 200 400 800
0 50 100 200
Meters

Feet
0 500 1,000 2,000 3,000 4,000
0 250 500 1,000
Meters

Legend

- Project Boundary
- BNSF Railroad
- County Roads
- Ephemeral Streams
- Perennial Streams
- Initial Well Field Areas
- Approximate Limit of Fall River Formation on Surface Mapping (from Stratigraphy of the Inyan Kara Group and Localization of Uranium Deposits, Geological Survey Professional Paper 763, 1974, G. B. Gott, D. E. Wolcott, C. G. Bowles)
- Measured Top of Fall River Formation (drill hole location is the center of text label)

Crook County
Lawrence County
Pennington County
Rapid City
Weston County
Wyoming
South Dakota
Custer County
Niobrara County
Fall River County

N

CONSULTANT

REVISIONS

#	DRAWN	CHECKED	APPROVED	DATE

REF 879

CHECK SCALES
If this bar does not measure 1 inch this map is not at its original scale
Arch E 36" x 48"

POWERTECH (USA) INC.

Plate 6.5
Structure Map of the Top of Fall River Formation

Dewey-Burdock Project

PLOT DATE	02-Jul-2012	DATE	02-Jul-2012
DRAWN	Hetrick, Lichnovsky	PDF FILE	R879_FallRiverStructure.pdf
CHECKED	Lichnovsky, Mays	CAD FILE	P:\Dewey-Burdock\Submittals\Class III\FallRiverStructure.mxd
		COORDS	NAD 27, South Dakota State Plane South (feet)

1,016,000 1,024,000 1,032,000 1,040,000

452,500 445,000 437,500 430,000 422,500

DY 12 67
DY 17 91
DB09-21-1 74
HDA 1 83
DWW 192 86
DWW 190 87
DWT 40 116
DB08-32-11 97
DWT 40 116
See Dewey Area Enlargement
DY 308 76
ELT 14 60
DB08-32-11 97
DWT 48 119
CAT 1 118
DWT 49 109
TRM 38 71
DB08-32-12 68
DRJ 90 75
DB08-5-1 146
DB08-1-7 74
40 047 05095 59
FBR 31 58
PM 159 75
DB07-11-16C 72 73
DB08-11-18 72
DB07-11-31 87
RONA 81 85
See Burdock Area Enlargement
40 047 05093 87

W DEWEY RD
DEWEY RD
S DEWEY RD
ARGENTINE RD
BURDOCK LOOP

Pass Creek
Beaver Creek
Cheyenne River

Custer County
Fall River County

T6S R1E
T7S R1E

Dewey Area Enlargement

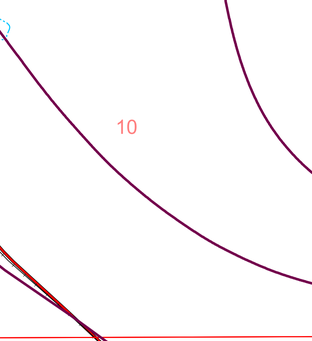
Feet 0 200 400 800
Meters 0 50 100 200

Burdock Area Enlargement

Feet 0 200 400 800
Meters 0 50 100 200

Legend

- Permit Boundary
- BNSF Railroad
- County Roads
- Ephemeral Streams
- Perennial Streams
- Initial Well Field Areas
- Morrison Thickness (feet)
- Drill Hole Location Showing Thickness (feet)



Feet 0 500 1,000 2,000 3,000 4,000
Meters 0 250 500 1,000

N

CONSULTANT

REVISIONS

#	DRAWN	CHECKED	APPROVED	DATE

REF 880

CHECK SCALES

If this bar does not measure 1 inch this map is not at its original scale

Arch E 36" x 48"

POWERTECH (USA) INC.

Plate 6.6

Isopach of the Morrison Formation

Dewey-Burdock Project

PLOT DATE	24-Jul-2012	DATE	24-Jul-2012
DRAWN	Hetrick, Lichnovsky	PDF FILE	R880_MorrisonIsopach.pdf
CHECKED	J. Mays	CAD FILE	P:\Dewey-Burdock\Submittals\Class III\MorrisonIsopach.mxd

COORDS NAD 27, South Dakota State Plane South (feet)

1,016,000 1,024,000 1,032,000 1,040,000

452,500 445,000 437,500 430,000 422,500

W DEWEY RD
DEWEY RD
S DEWEY RD
Pass Creek
Beaver Creek
ARGENTINE RD
BURDOCK LOOP

18 17 16 15 14 13
19 20 21 22 23 24
30 29 28 27 26 25
31 32 33 34 35 36
6 5 4 3 2 1
7 8 9 10 11 12
19 20 21 22 23 24

See Dewey Area Enlargement

Dewey Area Enlargement

Feet
0 200 400 800
0 50 100 200
Meters

See Burdock Area Enlargement

Burdock Area Enlargement

Feet
0 200 400 800
0 50 100 200
Meters

Custer County
Fall River County

T6S R1E
T7S R1E

Crook County
Lawrence County
Pennington County
Rapid City
Weston County
Wyoming
South Dakota
Custer County
Niobrara County
Fall River County

Feet
0 500 1,000 2,000 3,000 4,000
0 250 500 1,000
Meters

N

Legend

- Project Boundary
- BNSF Railroad
- County Roads
- Ephemeral Streams
- Perennial Streams
- Initial Well Field Areas
- Chilson Thickness (feet)
- Measured Thickness of Chilson Member (drill hole location is the center of text label)

CONSULTANT

REVISIONS

#	DRAWN	CHECKED	APPROVED	DATE

REF 881

CHECK SCALES
If this bar does not measure 1 inch this map is not at its original scale
Arch E 36" x 48"

PLOT DATE 02-Jul-2012 DATE 02-Jul-2012
DRAWN Hetrick, Lichnovsky PDF FILE R881_ChilsonIsopach.pdf COORDS NAD 27, South Dakota State Plane South (feet)
CHECKED J. Mays CAD FILE P:\Dewey-Burdock\Submittals\Class III\ChilsonIsopach.mxd

POWERTECH (USA) INC.

Plate 6.7

Isopach of the Chilson Member

Dewey-Burdock Project

1,016,000 1,024,000 1,032,000 1,040,000

452,500 445,000 437,500 430,000 422,500

W DEWEY RD DEWEY RD S DEWEY RD

Pass Creek Beaver Creek Cheyenne River

Custer County Fall River County

T6S R1E T7S R1E

See Dewey Area Enlargement See Burdock Area Enlargement

Dewey Area Enlargement

Feet 0 200 400 800 0 50 100 200 Meters

Burdock Area Enlargement

ARGENTINE RD BURDOCK LOOP

Feet 0 500 1,000 2,000 3,000 4,000 0 250 500 1,000 Meters

Legend

- Project Boundary
- BNSF Railroad
- County Roads
- Ephemeral Streams
- Perennial Streams
- Fuson Thickness (feet)
- Initial Well Field Areas
- Measured Thickness of Fuson Shale (drill hole location is the center of text label)

Crook County, Lawrence County, Rapid City, Pennington County, Weston County, Wyoming, South Dakota, Custer County, Niobrara County, Fall River County

N

CONSULTANT

REVISIONS

#	DRAWN	CHECKED	APPROVED	DATE

REF 882

CHECK SCALES

If this bar does not measure 1 inch this map is not at its original scale

Arch E 36" x 48"

POWERTECH (USA) INC.

Plate 6.8

Isopach of the Fuson Shale

Dewey-Burdock Project

PLOT DATE	02-Jul-2012	DATE	02-Jul-2012
DRAWN	Hetrick, Lichnovsky	PDF FILE	R882_FusonIsopach.pdf
CHECKED	J. Mays	CAD FILE	P:\Dewey-Burdock\Submittals\Class III\FusonIsopach.mxd

COORDS NAD 27, South Dakota State Plane South (feet)

1,016,000 1,024,000 1,032,000 1,040,000

452,500 445,000 437,500 430,000 422,500

W DEWEY RD · DEWEY RD · S DEWEY RD · S DEWEY RD · S DEWEY RD · S DEWEY RD · S DEWEY RD · BURDOCK LOOP · ARGENTINE RD · ARGENTINE RD

Pass Creek · Beaver Creek · Cheyenne River

See Dewey Area Enlargement

See Burdock Area Enlargement

Custer County

Fall River County

T6S R1E

T7S R1E

Dewey Area Enlargement

Feet: 0 200 400 800

Meters: 0 50 100 200

Burdock Area Enlargement

Feet: 0 200 400 800

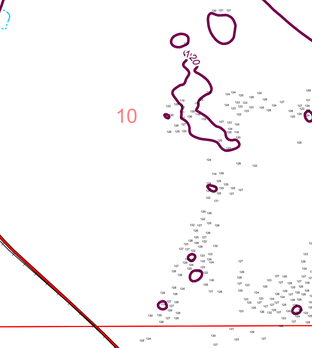
Meters: 0 50 100 200

Feet: 0 500 1,000 2,000 3,000 4,000

Meters: 0 250 500 1,000

Legend

- Project Boundary
- BNSF Railroad
- County Roads
- Ephemeral Streams
- Perennial Streams
- Initial Well Field Areas
- Fall River Thickness (feet)
- Approximate Limit of Fall River Formation on Surface Mapping (Source: Gott et al., 1974)
- Measured Thickness of Fall River Formation (drill hole location is the center of text label)



N

CONSULTANT	REVISIONS			
	#	DRAWN	CHECKED	APPROVED	DATE
REF 883					
CHECK SCALES: If this bar does not measure 1 inch this map is not at its original scale					
Arch E 36" x 48"					

POWERTECH (USA) INC.

Plate 6.9

Isopach of the Fall River Formation

Dewey-Burdock Project

PLOT DATE	24-Jul-2012	DATE	24-Jul-2012
DRAWN	Hetrick, Lichnovsky	PDF FILE	R883_FallRiverIsopach.pdf
CHECKED	Lichnovsky, Mays	CAD FILE	P:\Dewey-Burdock\Submittals\Class III\FallRiverIsopach.mxd

COORDS: NAD 27, South Dakota State Plane South (feet)

1,016,000 1,024,000 1,032,000 1,040,000

452,500 445,000 437,500 430,000 422,500

W DEWEY RD
DEWEY RD
S DEWEY RD
See Dewey Area Enlargement
Beaver Creek
Pass Creek
ARGENTINE RD
BURDOCK LOOP
See Burdock Area Enlargement
Custer County
Fall River County
T6S R1E
T7S R1E

Dewey Area Enlargement

Feet
0 200 400 800
0 50 100 200
Meters

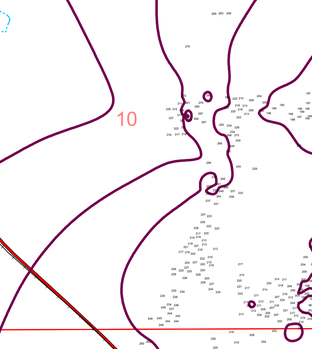
Burdock Area Enlargement

Cheyenne River

Feet
0 200 400 800
0 50 100 200
Meters

Legend

- Project Boundary
- BNSF Railroad
- County Roads
- Ephemeral Streams
- Perennial Streams
- Initial Well Field Areas
- Graneros Thickness (feet)
- Approximate Fall River Downgradient Outcrop (Source: Gott et al., 1974)
- Measured Thickness of Graneros Group (drill hole location is the center of text label)



N

Feet
0 500 1,000 2,000 3,000 4,000
0 250 500 1,000
Meters

CONSULTANT

REVISIONS

#	DRAWN	CHECKED	APPROVED	DATE

REF 884

CHECK SCALES
If this bar does not measure 1 inch this map is not at its original scale
Arch E 36" x 48"

POWERTECH (USA) INC.

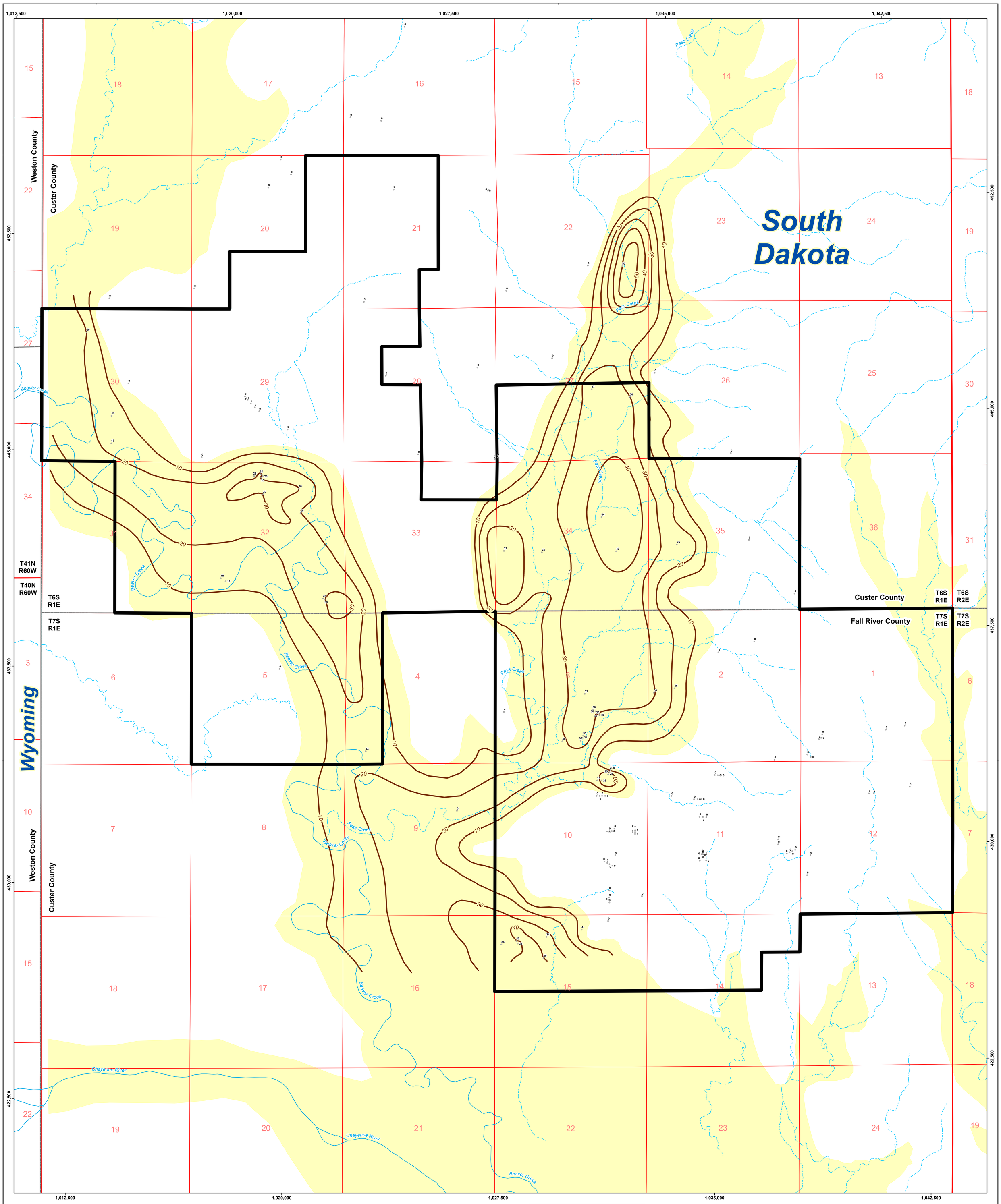
Plate 6.10

Isopach of the Graneros Group

Dewey-Burdock Project

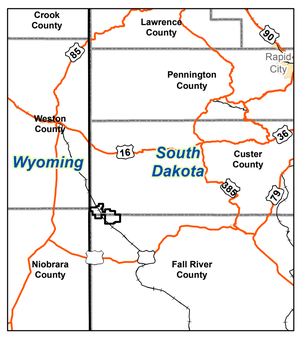
PLOT DATE	24-Jul-2012	DATE	24-Jul-2012
DRAWN	Hetrick, Lichnovsky	PDF FILE	R884_GranerosIsopach.pdf
CHECKED	Lichnovsky, Mays	CAD FILE	P:\Dewey-Burdock\Submittals\Class III\GranerosIsopach.mxd

COORDS NAD 27, South Dakota State Plane South (feet)



Legend

- Drill Hole Locations with Measured Depth of Alluvium (feet)
- Project Boundary
- Alluvium Thickness (feet)
- Ephemeral Streams
- Perennial Streams
- Alluvium



N

Feet
0 500 1,000 2,000 3,000 4,000
0 250 500 1,000
Meters

CONSULTANT

REVISIONS

#	DRAWN	CHECKED	APPROVED	DATE

REF 885

CHECK SCALES
If this bar does not measure 1 inch this map is not at its original scale

Arch E 36" x 48"

PLOT DATE 24-Jul-2012
DATE 24-Jul-2012
DRAWN Hetrick, Lichnovsky
PDF FILE R885_Isopach-Alluvium.pdf
COORDS NAD 27, South Dakota State Plane South (feet)
CHECKED Lichnovsky, Mays
CAD FILE P:\Dewey-Burdock\Submittals\Class III\Isopach-Alluvium.mxd

POWERTECH (USA) INC.

Plate 6.11

Isopach of the Alluvium

Dewey-Burdock Project

1,012,500 1,020,000 1,027,500 1,035,000 1,042,500

452,500 445,000 437,500 430,000 422,500

South Dakota

Wyoming

Weston County

Custer County

Fall River County

RD

DEWEY RD

S. DEWEY RD

S DEWEY RD

S DEWEY RD

S DEWEY RD

S DEWEY RD

ARGENTINE RD

ARGENTINE RD

BURDOCK LOOP

BURDOCK LOOP

Satellite Processing Plant

Central Processing Plant

T41N R60W

T40N R60W

T6S R1E

T7S R1E

T6S R2E

T7S R2E

15 18 17 16 15 14 13 18

22 19 20 21 22 23 24 19

27 30 29 28 27 26 25 30

34 31 32 33 34 35 36 31

3 6 5 4 3 2 1 6

10 7 8 9 10 11 12 7

15 18 17 16 15 14 13 18

22 19 20 21 22 23 24 19

J SNDM 6 ELM 103 ELT 24 ELA 97 ELT 20 ELT 14 DWA 14 DWT 72 DWA 25 DB08-32-11 DWA 20 DWT 22 ELA 11 ELA 17 ELA 103 ELR 23 ELR 60 PUA 3 PUR 20 PUR 33 PUR 46 DB 08-32-7 H

H' DWR 51 DWR 9 ELR 1 ELR 5 ELR 70 ELR 14 ELA 21 ELA 78 ELR 73 ELA 42 DWM 57 ELT 5 ELA 4 DWA 21 DWA 49 DWA 74 DWA 50 J'

G' DWM 29 DWJ 1 SNJ 17 KLA 8 KLA 9 KLA 10 DB07-3-4 DB07-3-1 PA1 PA8 DB07-10-12 PA 109 PA 103 PA9 G PA 113 PR 7 PA 101 PJ 55 PT 125 PT 107 PM 131 PA 19 PS 66 PT 110 PT 47 PT 27 PM 15 PM 206 PM 212 DB07-15-1 PA 83 C,D C'

D' RONA 48 RONM 2 RONT 68 DB08-11-18 FBS 121 FBA 6 FBM 75 FBM 165 RONT 49 RONA 39 RONA 93 A RONA 81 PS 33 PS 43 PS 45 PT 166 PT 162 PM 60

E' TRT 61 TRT 70 TRT 52 TRT 2 TRS 1 F' TRM 33 TRR 22 TRT 124 TRM 34 DRJ 70 DRJ 60 DRJ 55 DRJ 90 DRT 38 DRJ 100 DRJ 105 DRJ 115 DRW 1 DS 116 DS 185 DRM 48 DRS 47 DM 448 DRJ 109 DRJ 80 DRM 21 F E

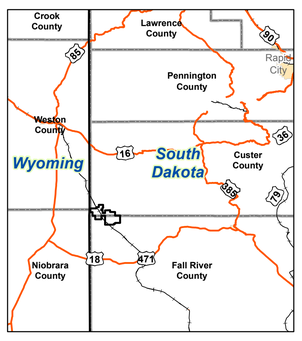
B' DRJ 49 DRM 51 DRA 15 DRA 13 DRA22 DRA 6 IHA 16 IHA 7 IHA 13 IHA 19 IHM 142 IHS 28 IHM 125 FBJ 16 FBT 103 FBS 26 FBS29a FBS 174 FBS 183 FBJ 13 FBJ 22 FBS 192 IHM 88 A' DB 07-11-13 B FBM 52 FBT 57 FBM 22 FBM 13 FBM 105

Legend

- Project Boundary
- Cross Section Index Lines
- Holes Used in Type Logs
- Holes Used in Cross Sections
- Overall Potential Well Field Areas
- Processing Plants
- BNSF Railroad
- County Roads

Ore Bodies

- Lower Fall River
- Upper Chilson
- Middle/Lower Chilson



Feet 0 500 1,000 2,000 3,000 4,000

Meters 0 250 500 1,000

CONSULTANT

REVISIONS

#	DRAWN	CHECKED	APPROVED	DATE

REF 789

CHECK SCALES

If this bar does not measure 1 inch this map is not at its original scale

Arch E 36" x 48"

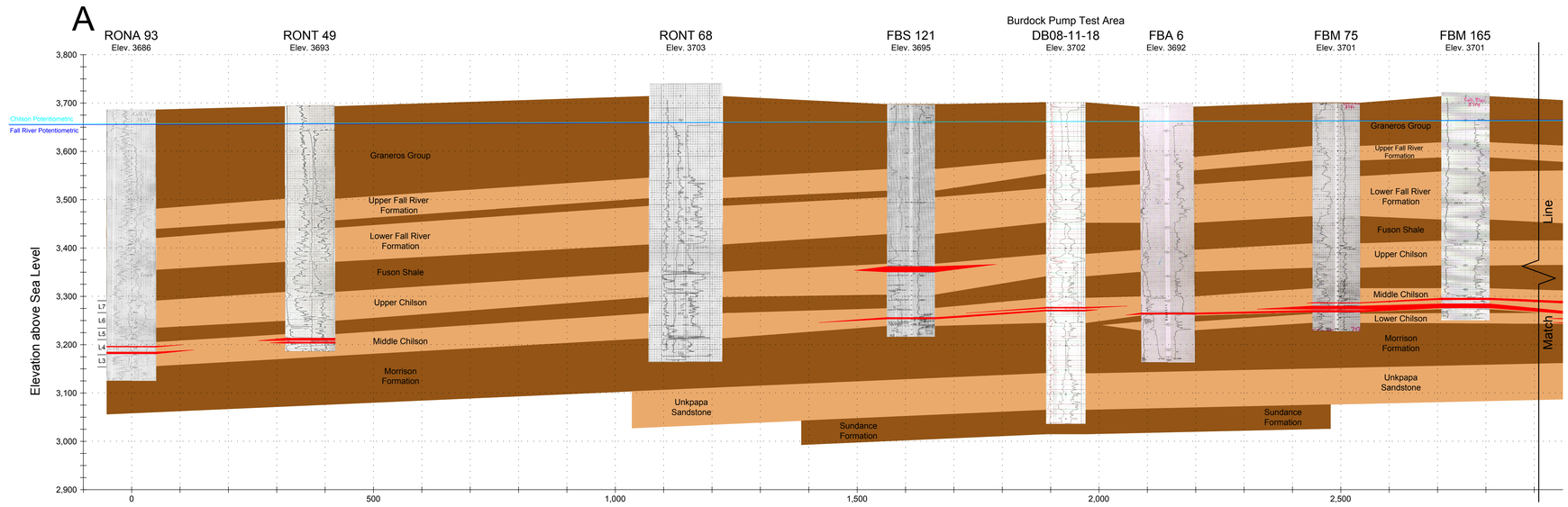
POWERTECH (USA) INC.

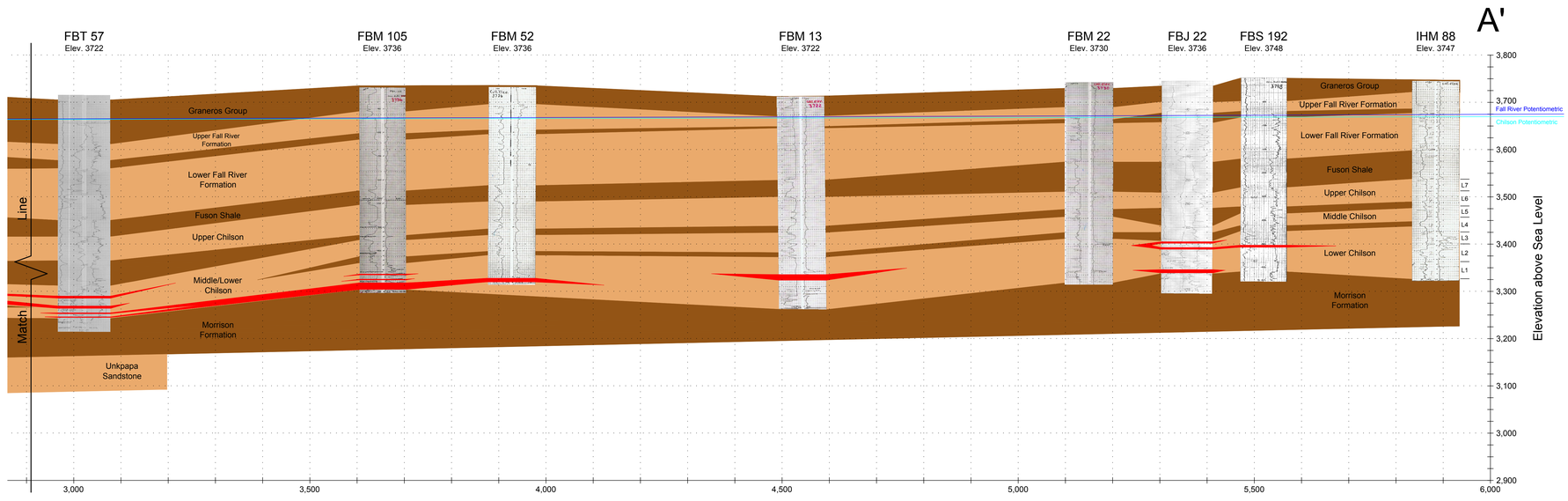
Plate 6.12

Cross Section Index Map

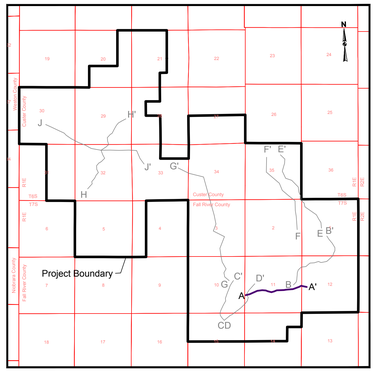
Dewey-Burdock Project

PLOT DATE	31-Jan-2012	DATE	16-May-2011
DRAWN	S. Hetrick	PDF FILE	R789_CrossSectionIndex.pdf
CHECKED	J. Bonner, J. Mays	CAD FILE	P:\Dewey-Burdock\Submittals\Class III\CrossSectionIndex.mxd
		COORDS	NAD 27, South Dakota State Plane South (feet)





Index Map



Legend

- Ore
- Confining Clays and Shale
- Sand

Horizontal Scale = Vertical Scale

Feet: 0 50 100 200 300 400

Meters: 0 25 50 100

CONSULTANT	REVISIONS			
	#	DRAWN	CHECKED	APPROVED	DATE
REF 886					
CHECK SCALES: If this bar does not measure 1 inch this map is not at its original scale					
Arch E 36" x 48"					

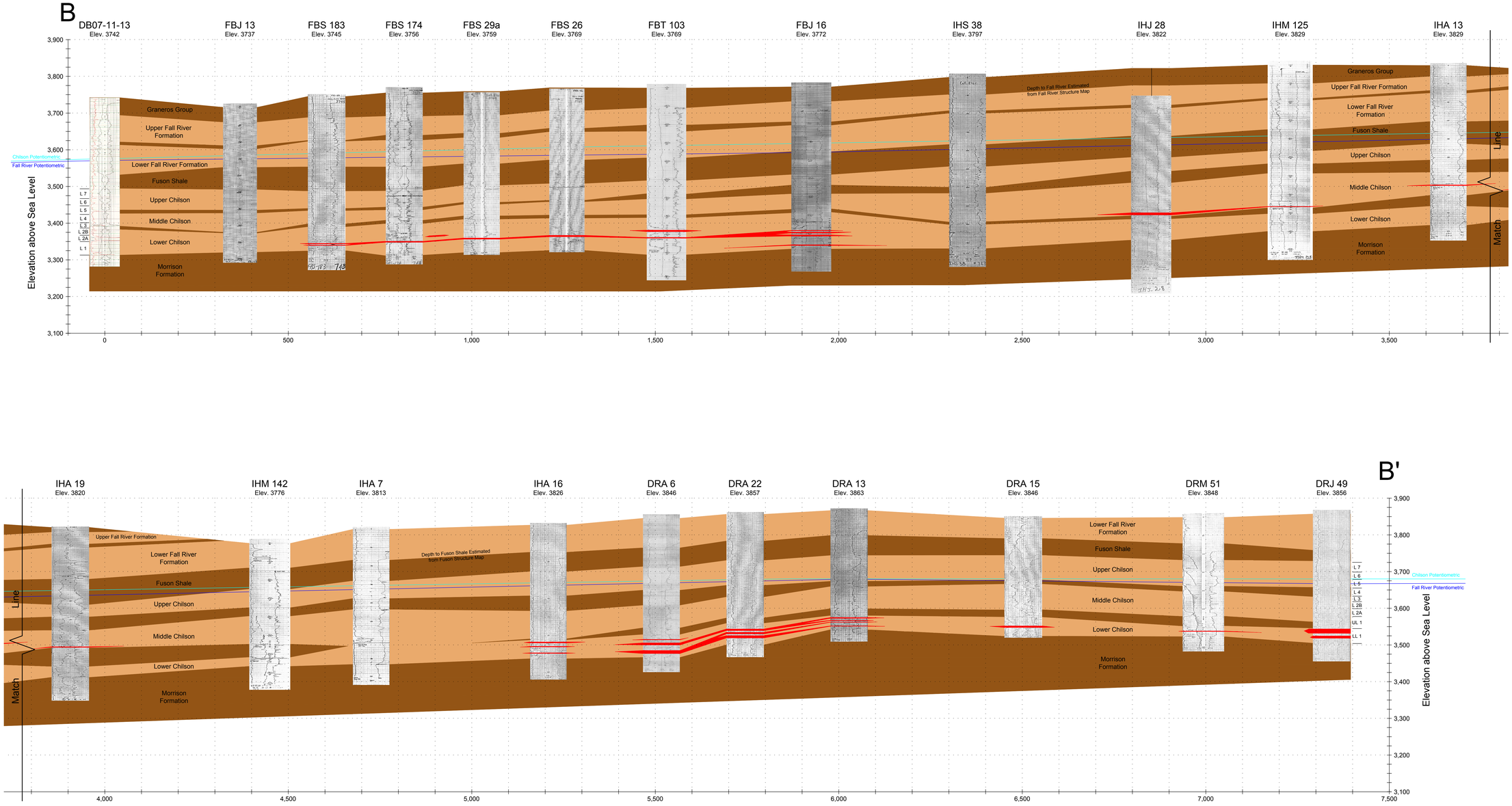
POWERTECH (USA) INC.

Plate 6.13

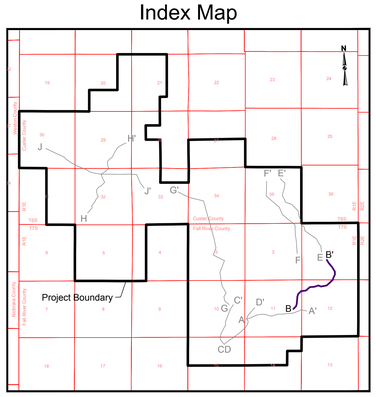
Cross Section A - A'

Dewey-Burdock Project

PLOT DATE	27-Jul-2012	DATE	02-Jan-2012
DRAWN	Hetrick, Lichnovsky	DGN FILE	R886_P_X_Burdock_A-A.pdf
CHECKED	F. Lichnovsky	CAD FILE	p:\dewey-burdock\submittals\class iii\p_x_burdock_a-a.dwg
		COORDS	NAD 27, South Dakota State Plane South (feet)



Index Map



Legend

- Ore
- Confining Clays and Shale
- Sand

Horizontal Scale = Vertical Scale

Feet: 0 50 100 200 300 400

Meters: 0 25 50 100

CONSULTANT	REVISIONS			
	#	DRAWN	CHECKED	APPROVED	DATE

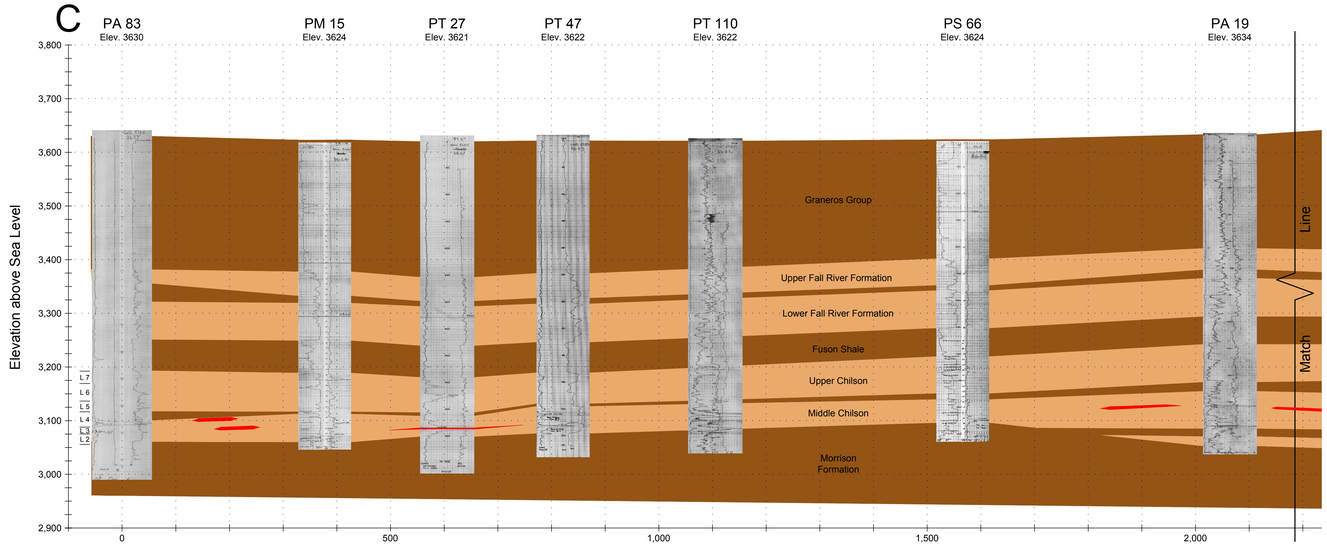
POWERTECH (USA) INC.

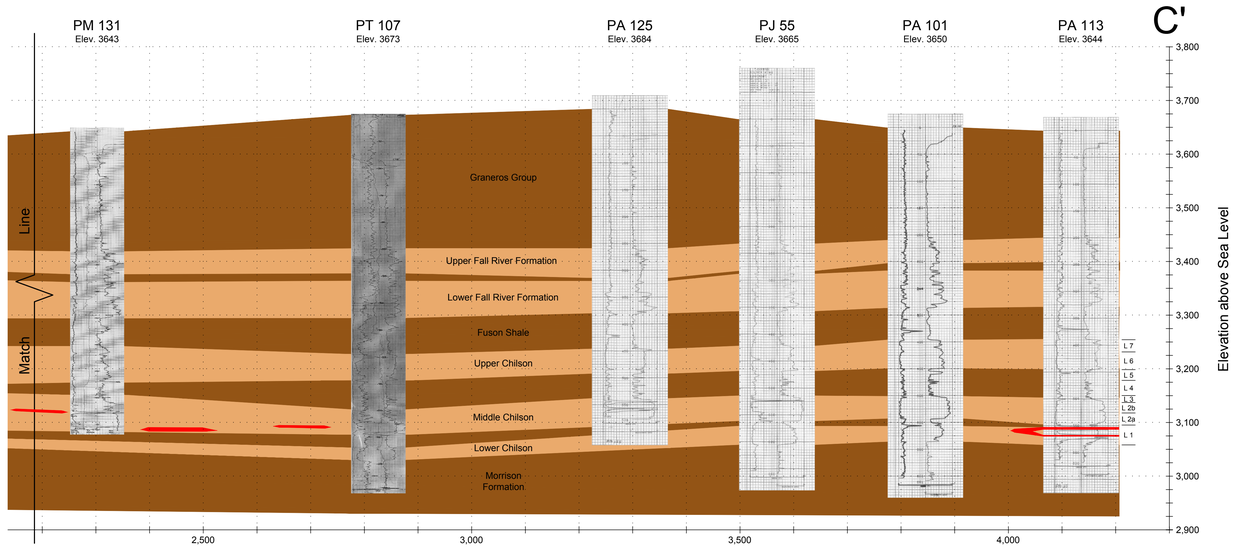
Plate 6.14

Cross Section B - B'

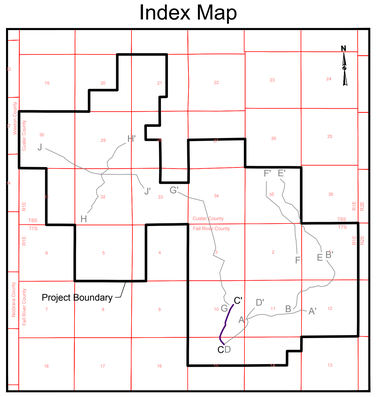
Dewey-Burdock Project

REF	887
CHECK SCALES	If this bar does not measure 1 inch this map is not at its original scale
PLOT DATE	27-Jul-2012
DATE	02-Jul-2012
DRAWN	Hetrick, Lichnovsky
COORD	NAD 27, South Dakota State Plane South (feet)
CHECKED	F. Lichnovsky
PDF FILE	R887_P_X_Burdock_B-B.pdf
CAD FILE	p:\dewey-burdock\submittals\class iii\p_x_burdock_b-b.dwg
ANSI E	34" x 44"





Index Map



Legend

- Ore
- Confining Clays and Shale
- Sand

Horizontal Scale = Vertical Scale

Feet: 0 50 100 200 300 400

Meters: 0 25 50 100

CONSULTANT

REVISIONS

#	DRAWN	CHECKED	APPROVED	DATE

REF 888

CHECK SCALES

If this bar does not measure 1 inch this map is not at its original scale

PLOT DATE	27-Jul-2012	DATE	02-Jul-2012
DRAWN	Hetrick, Patton	PDF FILE	R888_P_X_Burdock_C-C.pdf
CHECKED	F. Lichnovsky	CAD FILE	p:\dewey-burdock\submittals\class iii\p_x_burdock_c-c.dwg

COORDS NAD 27, South Dakota State Plane South (feet)

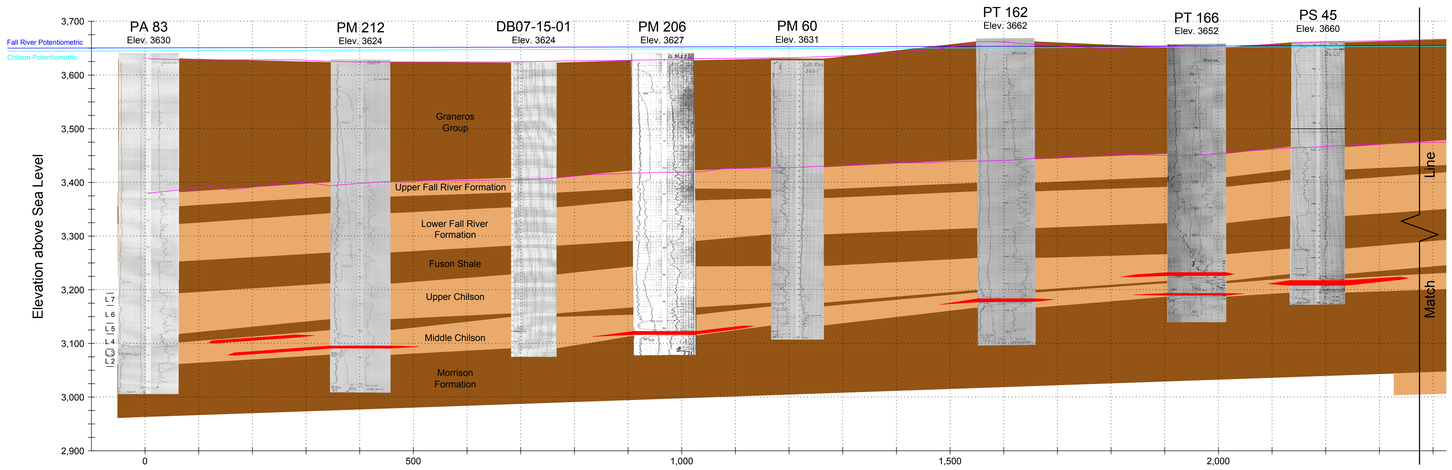
POWERTECH (USA) INC.

Plate 6.15

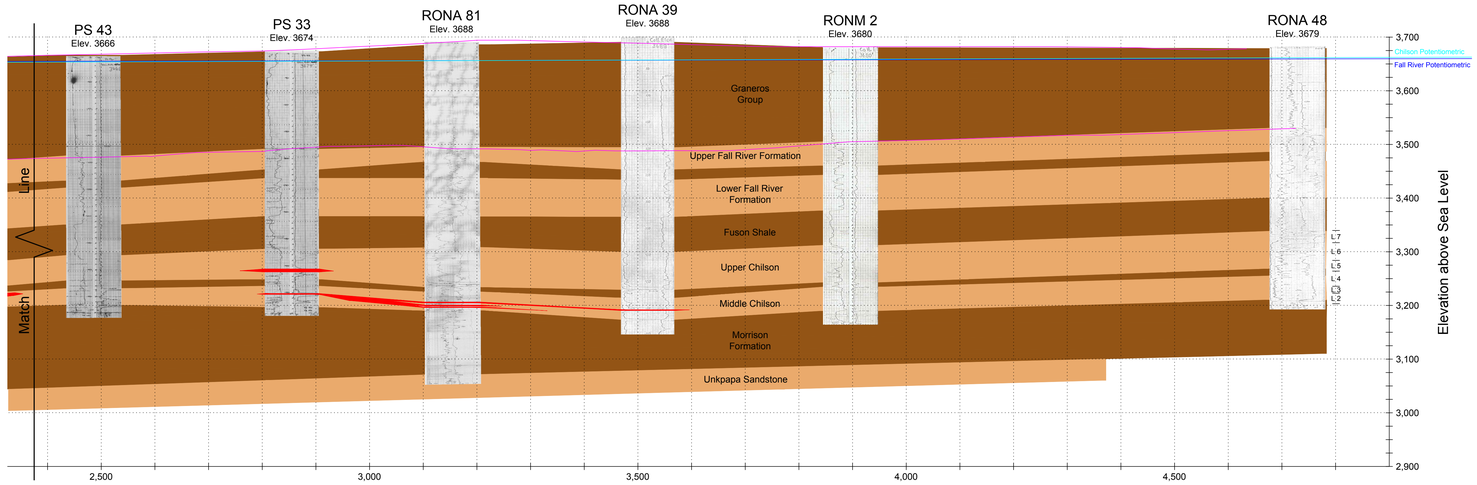
Cross Section C - C'

Dewey-Burdock Project

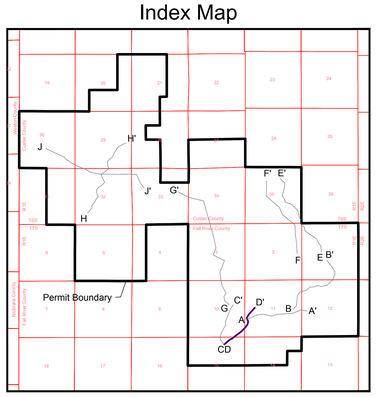
D



D'



Index Map



Legend

- Ore
- Confining Clays and Shale
- Sand

Horizontal Scale = Vertical Scale

Feet: 0 50 100 200 300 400

Meters: 0 25 50 100

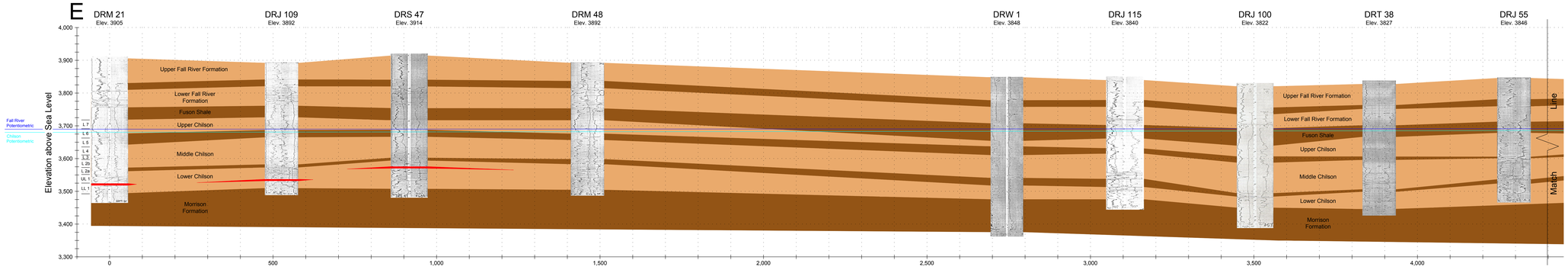
CONSULTANT	REVISIONS				
	#	DRAWN	CHECKED	APPROVED	DATE
REF 889					
CHECK SCALES: If this bar does not measure 1 inch this map is not at its original scale					
PLOT DATE 27-Jul-2012	DATE 02-Jul-2012				
DRAWN Hetrick, Lichnovsky	PDF FILE R889_X_P_Burdock_D-D.pdf				
CHECKED F. Lichnovsky	CAD FILE p:\dewey-burdock\submittals\class iii\p_x_burdock_d-d.dwg				
ANSI E 34" x 44"	COORDS NAD 27, South Dakota State Plane South (feet)				

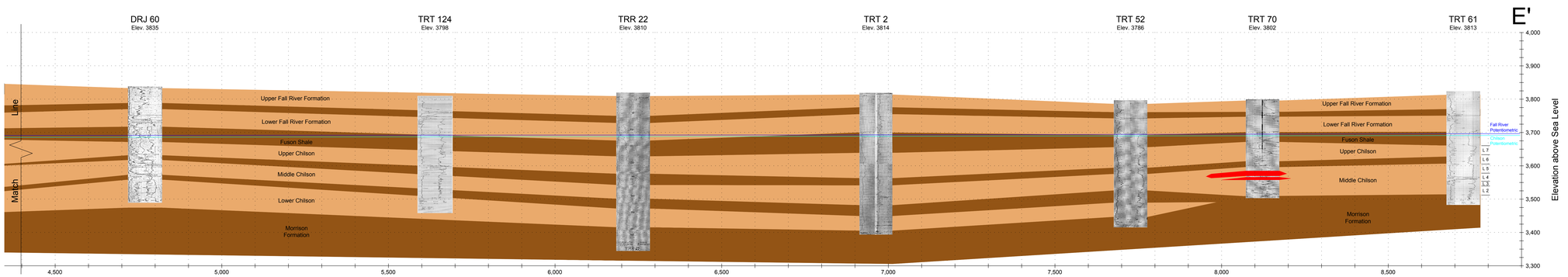
POWERTECH (USA) INC.

Plate 6.16

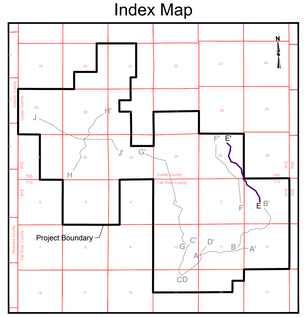
Cross Section D - D'

Dewey-Burdock Project





Index Map



Legend

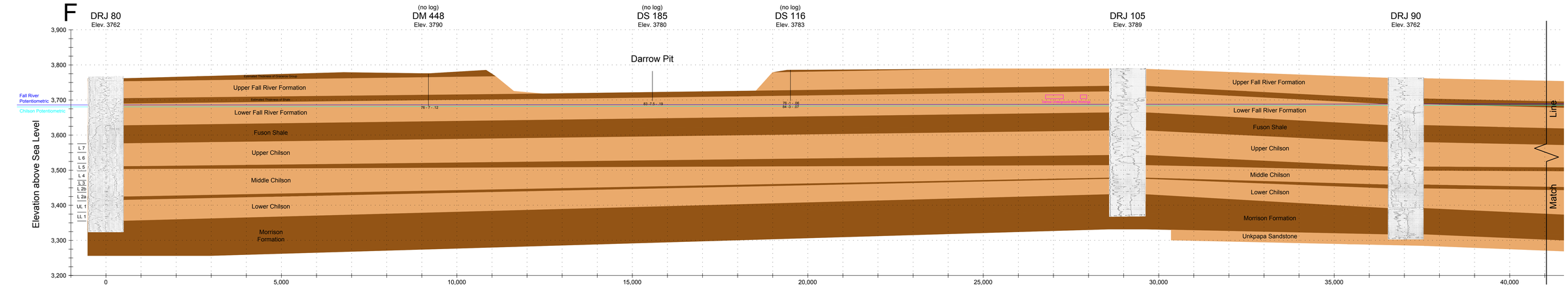
- Ore
- Confining Clays and Shale
- Sand

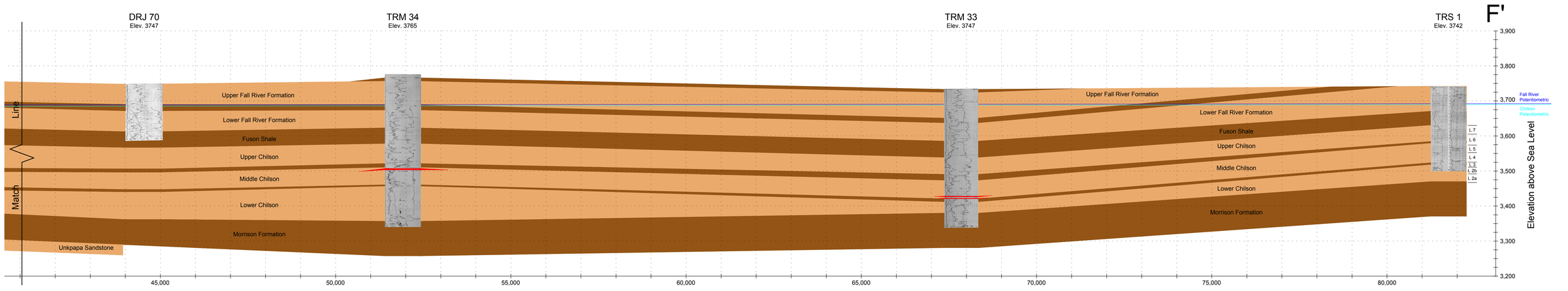
Horizontal Scale = Vertical Scale

Feet: 0 50 100 200 300 400

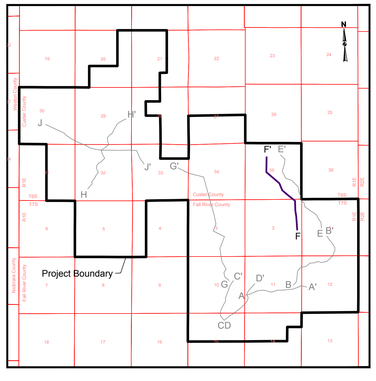
Meters: 0 25 50 100

SCALE 1:1000	REVISIONS # DRAWN CHECKED APPROVED DATE		POWERTECH (USA) INC.
REF 890			Plate 6.17
CHECK SCALES			Cross Section E - E'
If this bar does not measure 1 inch this map is not at its original scale	PROJ DATE 27-Jul-2012	DATE 02-Jul-2012	Dewey-Burdock Project
	DRAWN Hietrick, Lichnovsky	DEF FILE R890_P_X_Burdock_E-E.pdf	COORD NAD 27, South Dakota State Plane South (feet)
	CHECKED F. Lichnovsky	DEF FILE p:\dewey-burdock\submittals\class III\p_x_burdock_e-e.dwg	





Index Map



Horizontal Scale = Vertical Scale

Feet
0 50 100 200 300 400

0 25 50 100
Meters

Legend

- Ore
- Confining Clays and Shale
- Sand

CONSULTANT

REVISIONS				
#	DRAWN	CHECKED	APPROVED	DATE

REF 891

CHECK SCALES

If this bar does not measure 1 inch this map is not at its original scale

ANSI E 36" x 48"

PLOT DATE 27-Jul-2012 DATE 02-Jul-2012

DRAWN Hetrick, Lichnovsky PDF FILE R891_P_X_Burdock_F-F.pdf

CHECKED F. Lichnovsky CADFILE p:\dewey-burdock\submittals\class iii\p_x_burdock_f-f.dwg

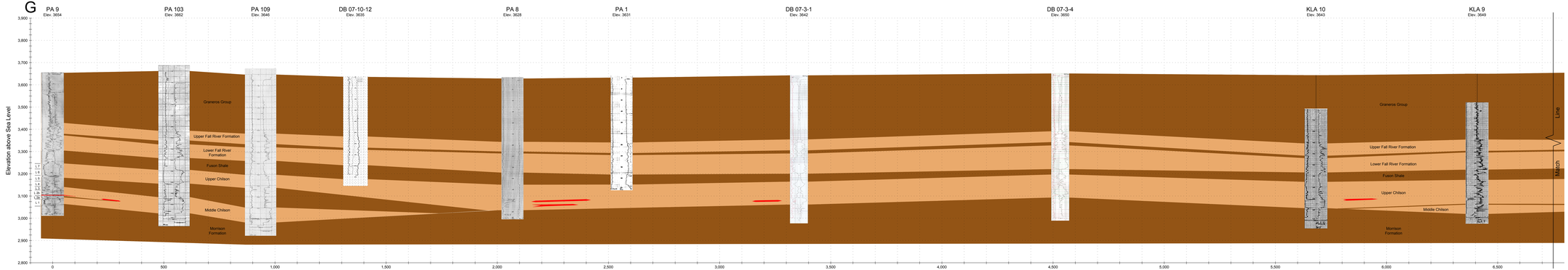
POWERTECH (USA) INC.

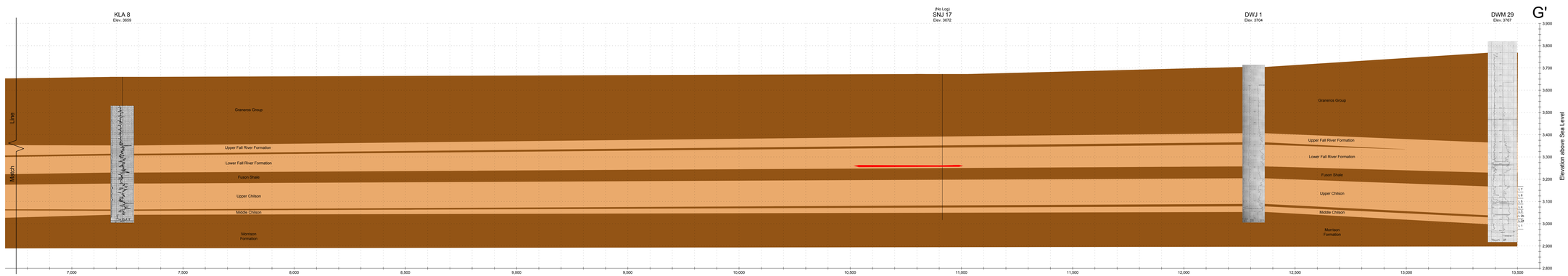
Plate 6.18

Cross Section F - F'

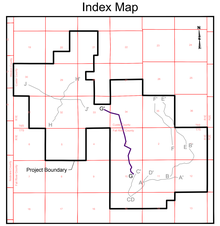
Dewey-Burdock Project

COORDS NAD 27, South Dakota State Plane South (feet)





Index Map



Legend

- Ore
- Confining Clays and Shale
- Sand

Horizontal Scale = Vertical Scale

Feet: 0, 50, 100, 200, 300, 400

Meters: 0, 25, 50, 100

REVISIONS			
#	DRAWN	CHECKED	APPROVED	DATE

PROJECT NO. 0202

DATE 27-Jul-2012

SCALE 1:2,000

DATE 02-Jul-2012

DRAWN A. Lychowych

CHECKED

APPROVED

Powertech (USA) Inc.

Plate 6.19

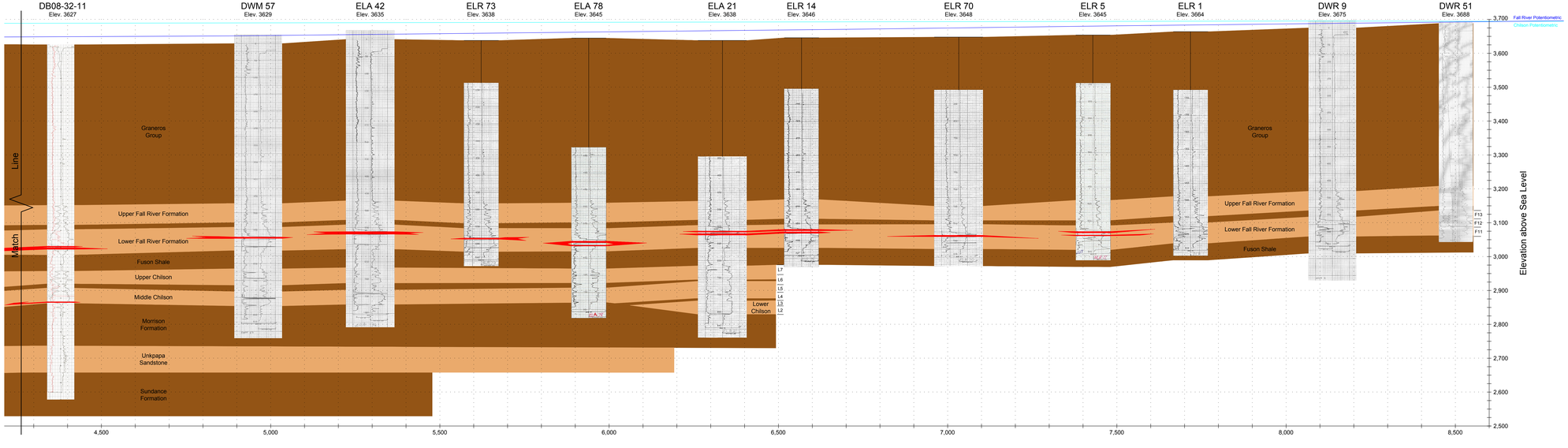
Cross Section G - G'

Dewey-Burdock Project

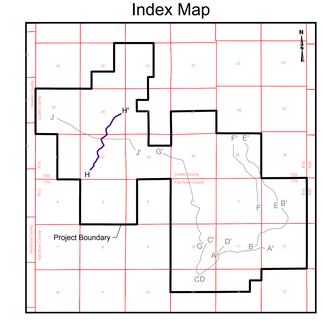
Custer County, South Dakota

FILE: NI43-101_South Dakota State Plane South.dwg

FILE: G:\Dewey-Burdock\Hydrostratigraphy\Cross Sect_A_Burdock_G-G'.dwg



Index Map



Horizontal Scale = Vertical Scale

Feet: 0 50 100 200 300 400

Meters: 0 25 50 100

Legend

- Ore
- Confining Clays and Shale
- Sand

CONSULTANT	REVISIONS			
	#	DRAWN	CHECKED	APPROVED	DATE
REF 893				
CHECK SCALES				
If this bar does not measure 1 inch this map is not at its original scale	PLOT DATE 27-Jul-2012	DATE 02-Jul-2012		
	DRAWN Hetrick, Patton	REF FILE R893_P_X_Dewey_H-H.pdf		
	CHECKED F. Lichnovsky	CHECKED p:\dewey-burdock\submittals\class III\p_x_dewey_h-h.dwg		

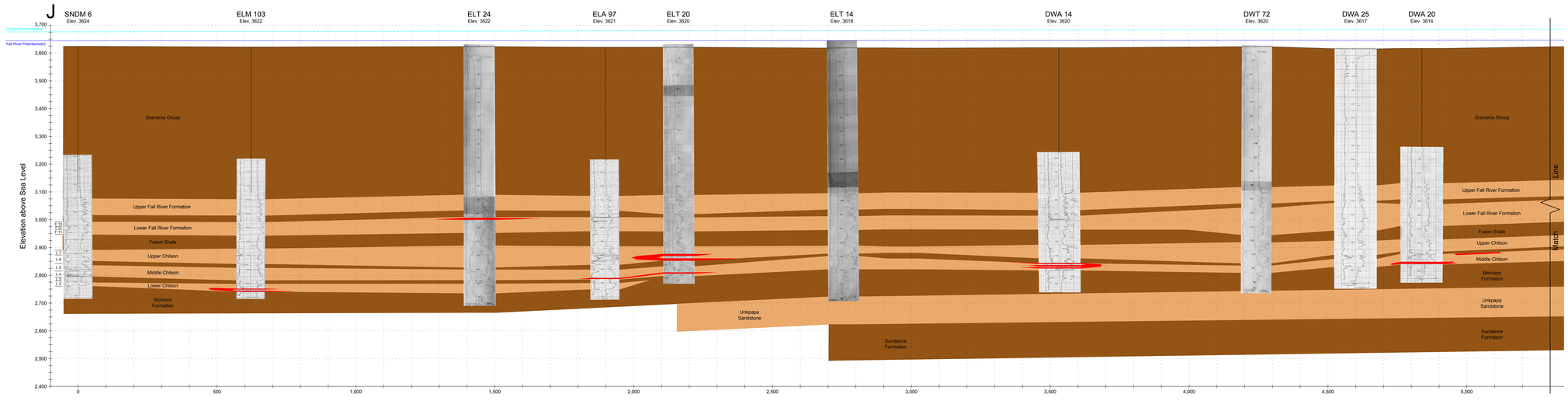
POWERTECH (USA) INC.

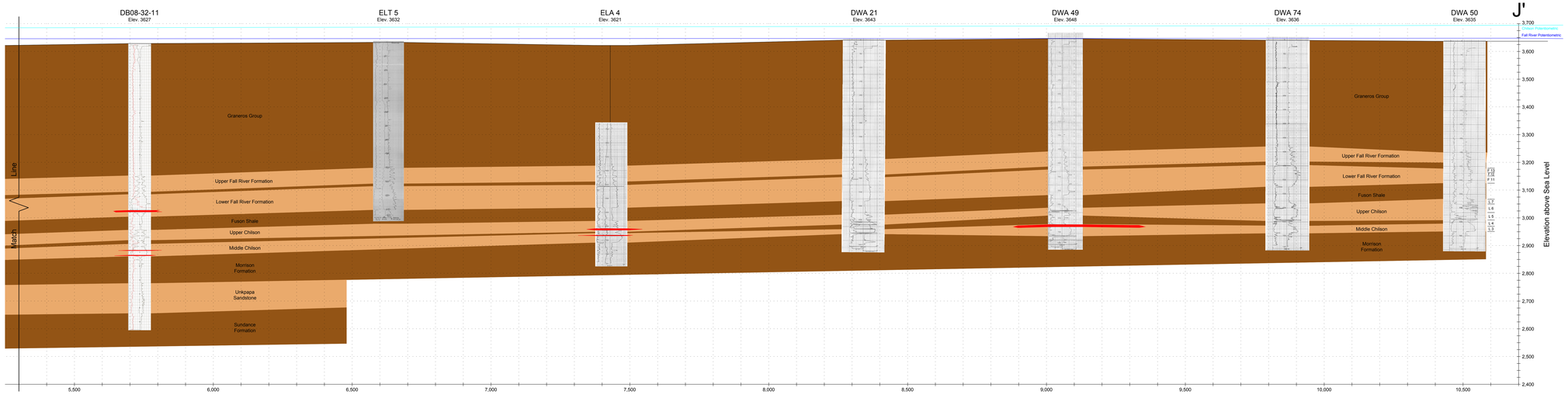
Plate 6.20

Cross Section H - H'

Dewey-Burdock Project

COORDINATE NAD 27, South Dakota State Plane South (feet)

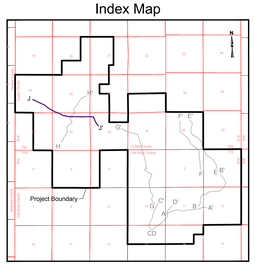




Legend

- Ore
- Confining Clays and Shale
- Sand

Index Map



Horizontal Scale = Vertical Scale

Feet: 0 50 100 200 300 400

Meters: 0 25 50 100

REVISIONS				
#	DRAWN	CHECKED	APPROVED	DATE

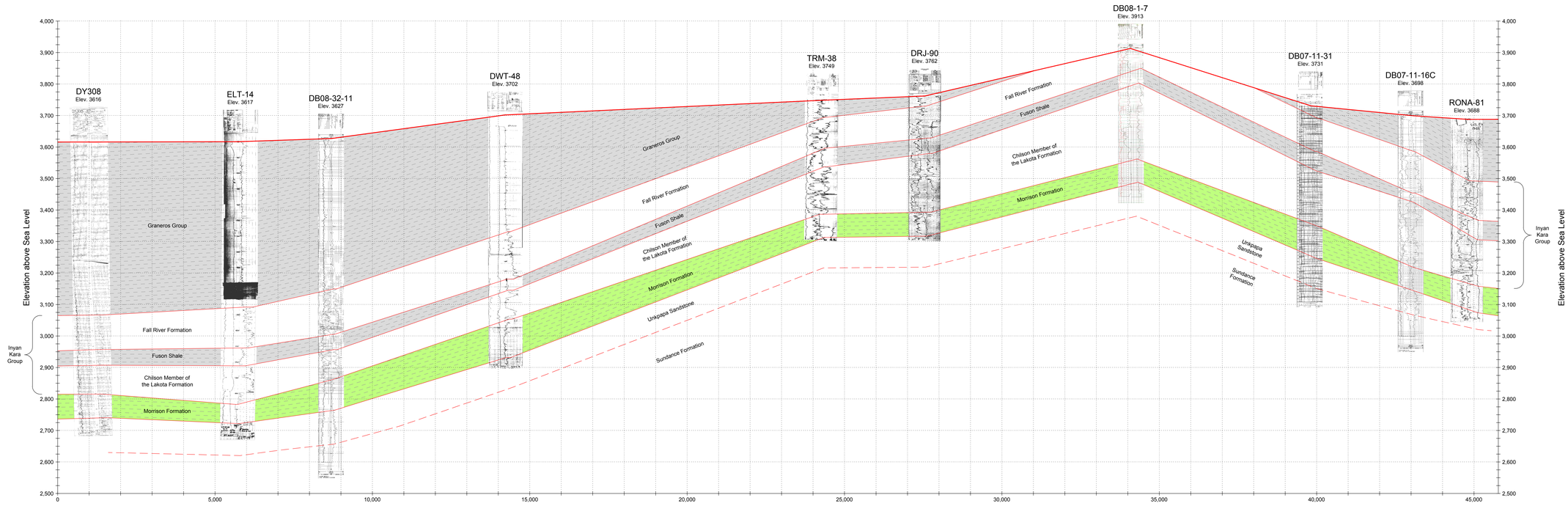
PowerTech (USA) Inc.

Plate 6.21

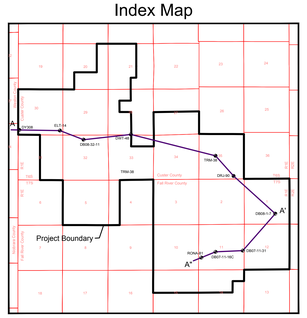
Cross Section J - J'

Dewey-Burdock Project

REV	894
CHECK SCALES	
If this bar does not measure 1" on the plot, it is not at its original scale	
ORIGINAL SCALE	22"x34"
DRAWN	Hattrick, Lichnovsky
CHECKED	E. Lichnovsky
DATE	27-Jul-2012
DATE	02-Jul-2012
FILE No.	8894_P_X_Dewey_J-J'.pdf
FILE PATH	P:\Dewey-Burdock\Submittals\cross sty_x_dewey_j-j.dwg
DATUM	NAD 27, South Dakota State Plane South (feet)



Index Map



Vertical Exageration: 10 : 1

Vertical Scale: Feet 0 100 200 300 400; Meters 0 25 50 100

Horizontal Scale: Feet 0 1,000 2,000 3,000 4,000; Meters 0 250 500 1,000

CANADA TRACT			
REVISIONS			
#	DRAWN	CHECKED	APPROVED	DATE
REF	895		
CHECK SCALES			
If this bar does not measure 1 inch this map is not at its original scale			
PLOT DATE	27-Jul-2012	DATE	02-Jul-2012
DRAWN	Cadd Services	FILE	R895_MorrisonXSection.pdf
CHECKED	F. Lichnovsky	DRAFTER	p:\dewey-burdock\submittals\class III\morrisonsection.dwg

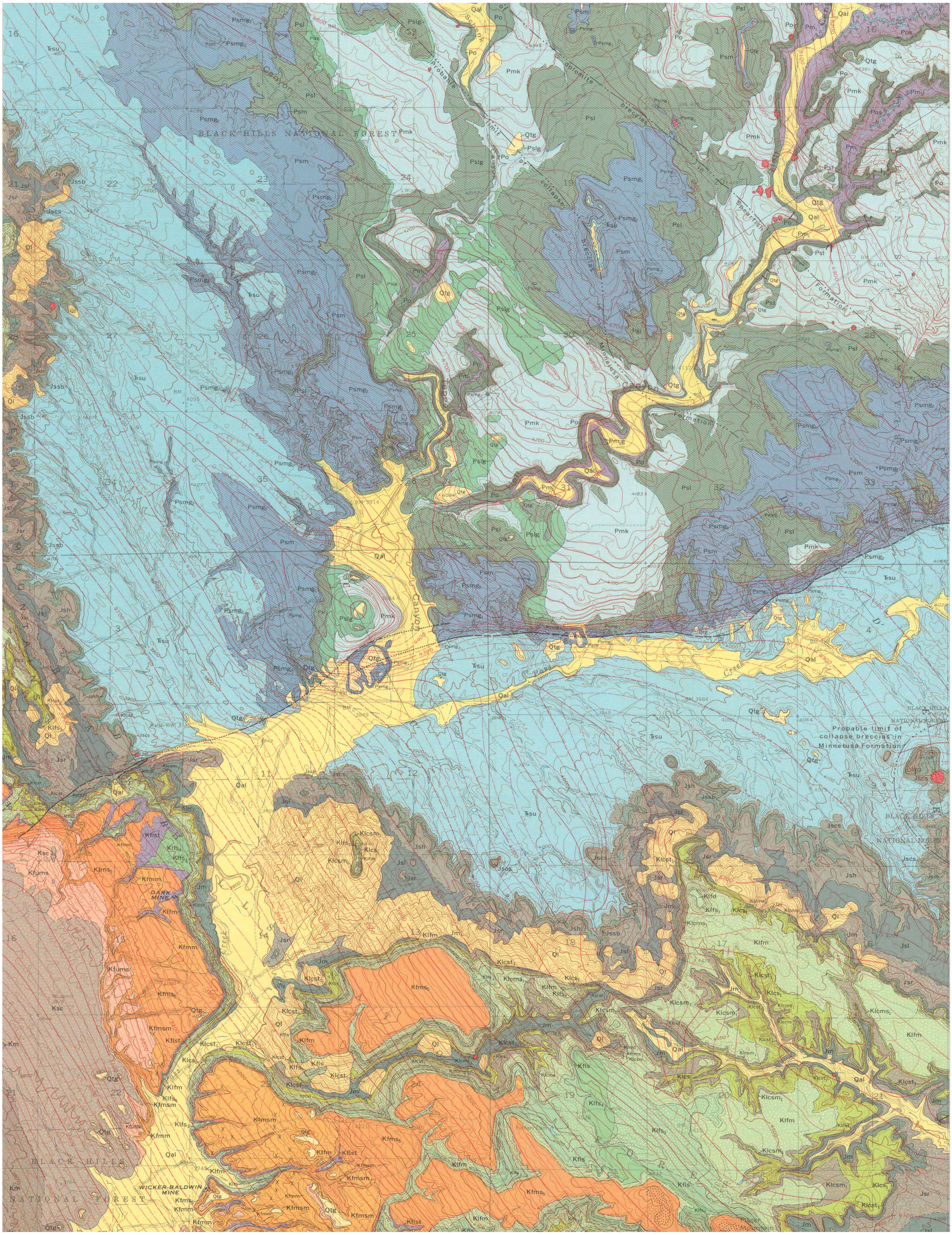
POWERTECH (USA) INC.

Plate 6.22

Cross Section of the Morrison Formation

Dewey-Burdock Project

DOCKET: n/a



See Plate 6.24 for the location of this geologic map in relation to the Dewey-Burdock Project.

Feet
0 1000 2000 3000 4000
0 250 500 1000
Meters

N

Source: United States Department of the Interior Geological Survey, Bulletin 1063, Plate 20, Geologic Map and Section of the Jewel Cave SW □uadrangle, South Dakota

CONSULTANT

REVISIONS

#	DRAWN	CHECKED	APPROVED	DATE

REF 896

CHECK SCALES
If this bar does not measure 1 inch this map is not at its original scale
Arch E 36" x 48"

PLOT DATE 24-Jul-2012
DATE 24-Jul-2012
DRAWN R. Lichnovsky
PDF FILE R896_GeoMapJewelCaveSW.pdf
COORDS NAD 27, South Dakota State Plane South (feet)
CHECKED J. Bonner
CAD FILE p:\dewey-burdock\submittals\class iii\geomapjewelcavesw.dwg

POWERTECH (USA) INC.

Plate 6.□3

□eolo□ic □a□
□e□el Ca□e S□

Dewey-Burdock Project

1,000,000 1,050,000 1,100,000 1,150,000

550,000 500,000 450,000 400,000 350,000

Limit of Precambrian rocks (from Darton and Paige, 1925)

X Harney Peak

Rocks of Cambrian to Mississippian age

Custer

Rocks of Precambrian age

Limit of Precambrian rocks

Rocks of Cambrian to Mississippian age

Rocks of Permian to Jurassic age

Pringle

Hot Springs

Edgemont

Inyan Kara Group

Minnelusa Formation

Dissolution Front

Photo A

Photo B

Photo G

Photo H

Photos C & D

Photos E & F

Jewel Cave SW

Proposed Powertech Dewey-Burdock Project Boundary

BLACK FANNY PEAK MONOCLINE

FANNY PEAK SYNCLINE

HILLS MONOCLINE

WYOMING SOUTH DAKOTA

DEWEY TERRACE

DEWEY FAULT

BARKER DOME

LONG MOUNTAIN STRUCTURAL ZONE

Red Canyon

Craven Canyon

JONES CANYON

CHEYENNE RIVER

EDGEMONT TERRACE

LIVINGSTON CANYON MONOCLINE

WILSON CREEK ANTICLINE

SHEEP MOUNTAIN ANTICLINE

COTTONWOOD CREEK ANTICLINE

CASCADE SPRINGS ANTICLINE

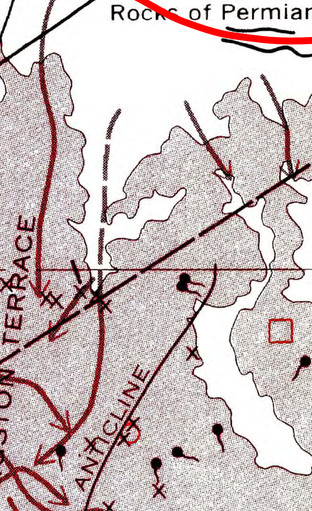
DUDLEY ANTICLINE

EXPLANATION

- Contact
- Normal fault
- Possible thrust fault — *Sawteeth on upthrown side*
- Fault from photographs
- Concealed fault — *Showing probable direction of movement. Located by airborne magnetometer survey and by gravity survey*
- Lineament
- Anticline — *Showing crestline and direction of plunge*
- Syncline — *Showing troughline*
- Monocline — *Showing trace and direction of plunge. Dashed where indefinite*
- Breccia pipe or collapse structure in Inyan Kara Group or Morrison Formation
- Breccia pipe or collapse structure in Sundance Formation
- Breccia pipe or collapse structure in Spearfish Formation, Minnekahta Limestone, or Opeche Formation
- Breccia pipe or collapse structure in Minnelusa Formation
- Syncline — *Possibly formed in part by solution subsidence*
- Area containing structures of possible solution origin
- Topographic depression in Inyan Kara Group or younger rocks
- Topographic depression in Sundance Formation
- Topographic depression in Spearfish Formation or Minnekahta Limestone
- Paleostream of Tertiary and (or) Quaternary age — *Dashed where inferred*
- Uranium deposit — *Some undeveloped prospects in pre-Inyan Kara rocks also shown*
- Spring — *Showing locality number in table 9*
- Water well — *Showing locality number in table 11*

Feet: 0, 6,000, 12,000, 18,000, 24,000

Meters: 0, 2,000, 4,000, 6,000, 8,000



Base map and legend shows scanned images taken from:

Stratigraphy of the Inyan Kara Group and Localization of Uranium Deposits, Southern Black Hills, South Dakota and Wyoming, Geological Survey Professional Paper 763, prepared by Garland B. Gott, Don E. Wolcott and C. Gilbert Bowles, US Government Printing Office, 1974, Plate 4, Map Showing Major Tectonic Elements, Minor Fault and Solution Collapse Structures, Springs, Paleostreams, and Uranium Deposits in the Southern Black Hills, South Dakota and Wyoming.

CONSULTANT

REVISIONS

#	DRAWN	CHECKED	APPROVED	DATE

REF 897

CHECK SCALES — If this bar does not measure 1 inch this map is not at its original scale

PLOT DATE 02-Jul-2012 DATE 02-Jul-2012

DRAWN S. Hetrick PDF FILE R897_BrecciaPipeUSGS763.pdf COORDS NAD 27, South Dakota State Plane South (feet)

CHECKED J.Bonner, D.Tschopp CAD FILE P:\Dewey-Burdock\Submittals\Class III\BrecciaPipeUSGS763.mxd

Arch E 36" x 48"

POWERTECH (USA) INC.

Plate 6.24

Location of Breccia Pipes Proposed by USGS Professional Paper 763

Dewey-Burdock Project

R1E

T6S

29

SOUTH DEWE□ ROAD

RAILROAD

PERIMETER MONITOR WELL RING
APPROXIMATEL 400' FROM FENCE,
WELLS SPACED 400' APART

32

≤400'

70°
OR LESS

≤400'

≤400'

T6S

R1E

R1E

T6S

Feet
0 100 200 400 600 800
0 50 100 200
Meters

LEGEND:

- F13 Horizon
- F12 Horizon
- F11 Horizon
- PERIMETER MONITOR WELL
- OVERL□ING MONITOR WELL
- UNDERL□ING MONITOR WELL

50'~150'

50'~150'

PRODUCTION WELL

INJECTION WELL

N

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REVISIONS

#	DRAWN	CHECKED	APPROVED	DATE

REF 898

CHECK SCALES
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Arch E 36" x 48"

POWERTECH (USA) INC.

Plate □.1

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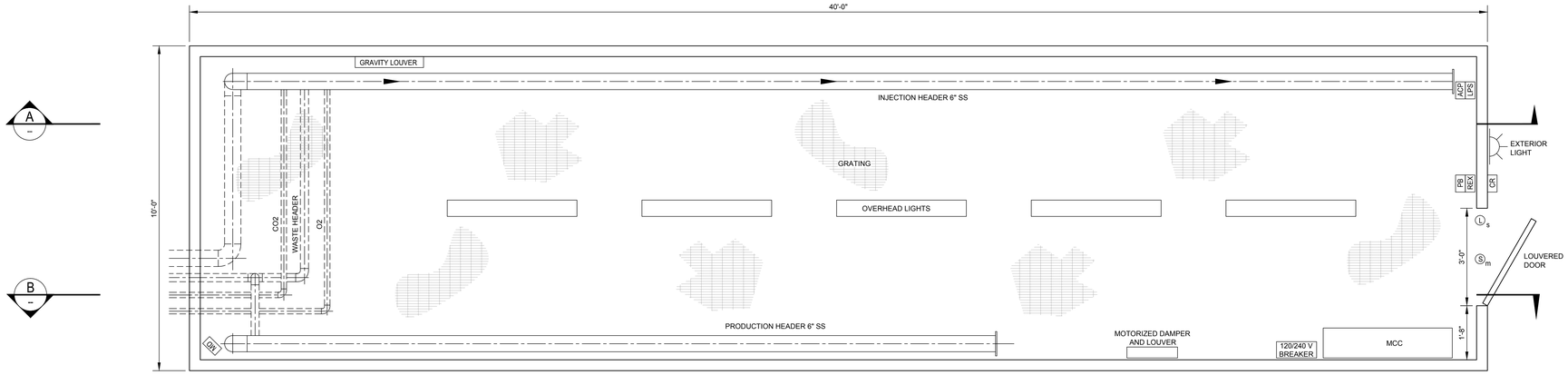
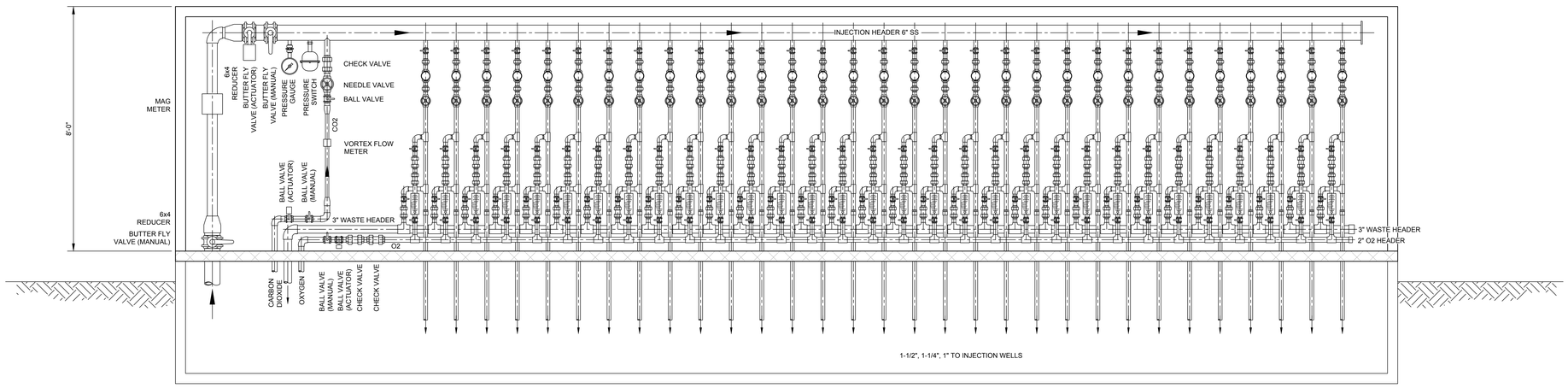
Dewey-Burdock Project

PLOT DATE	24-Jul-2012	DATE	24-Jul-2012
DRAWN	Cadd Services (JM)	PDF FILE	R898_Dewey-100ft-Mining-Units.pdf
CHECKED	J. Mays	CAD FILE	p:\dewey-burdock\submittals\class iii\dewey-100ft-mining-units.dwg

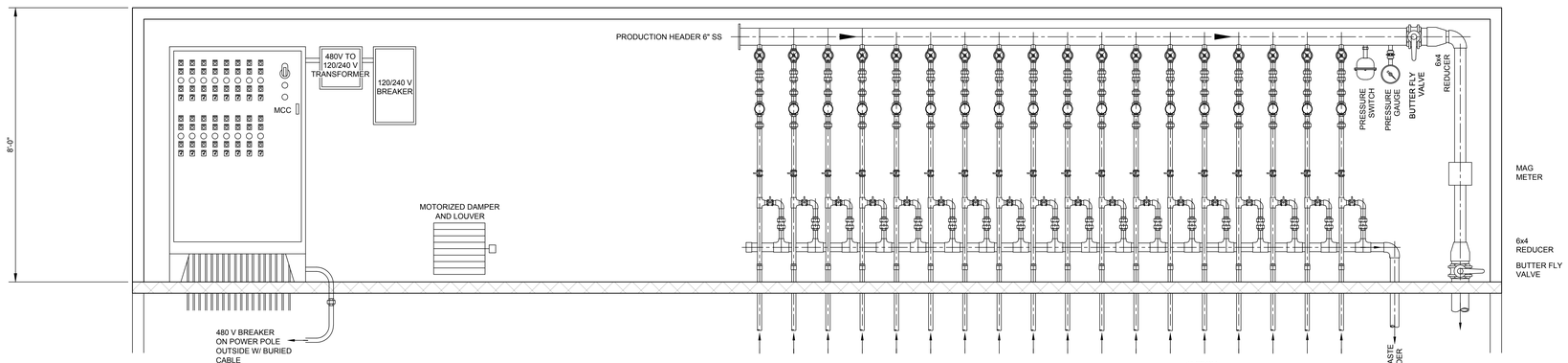
COORDS NAD 27, South Dakota State Plane South (feet)



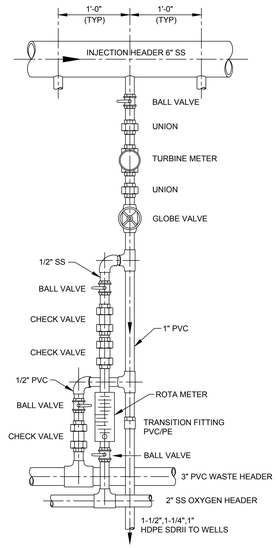
PLAN
1"=1'-6"



A -- SECTION
1"=1'-6"



B -- SECTION
1"=1'-6"



INJECTION HEADER DETAIL
NTS

PRODUCTION HEADER DETAIL
NTS

Legend

- MD — Motion Detector
- ACP — Access Control Panel
- LPS — Lock Power Supply
- REX — Request-to-exit Detector
- PB — Push Button Re-arm Motion Detector
- CR — Card Reader
- L_s — Electronic Strike Lock
- S_m — Door Status Switch

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#	DRAWN	CHECKED	APPROVED	DATE

REF 899

CHECK SCALES
If this bar does not measure 1 inch this map is not at its original scale

ANSI E 34" x 44"

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Plate 7.2

Typical Header House

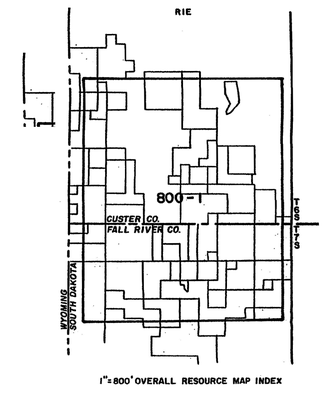
Dewey-Burdock Project

PLOT DATE 26-Jul-2012 | DATE 24-Jul-2012
DRAWN Cadd Services (RMC) | PDF FILE R899_TypHeaderHouse.pdf | COORD n/a
CHECKED J. Mays | CAD FILE p:\dewey-burdock\submittals\class iii\typheaderhouse.dwg

Powertech Project Boundary

TVA 1985 Preliminary
Aquifer Exemption Boundary

TVA Data Showing Uranium Roll Front Deposits and Resources (Identified and Available)



EXPLANATION

- Claim Property Boundary
- Other Mineral Interest Property Boundary
- Undiscovered Resource
- Identified Resource
- Depleted Resource
- Front Outline

IDENTIFIED RESOURCES

TONS	POUNDS	AVERAGE GRADE
1,481,000	3,865,000	.131
110,000	229,000	.104
202,000	520,000	.129
671,000	1,898,000	.141
638,000	1,542,000	.121
559,000	1,389,000	.124
321,000	696,000	.108
3,982,000	10,139,000	.127

TOTAL AVAILABLE RESOURCES

TONS	POUNDS	OVERALL AVERAGE GRADE
2,307,000	6,179,000	.134
259,000	545,000	.105
722,000	2,104,000	.146
1,440,000	4,669,000	.162
1,549,000	4,276,000	.138
1,021,000	2,829,000	.139
913,000	2,470,000	.135
8,211,000	23,072,000	.140

Source: Silver King Mines, Inc. Comprehensive Dewey-Burdock Resource Map #800-6, July 1985

Feet
0 200 400 800 1,200 1,600
0 100 200 400
Meters

N

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#	DRAWN	CHECKED	APPROVED	DATE

REF 797

CHECK SCALES
If this bar does not measure 1 inch this map is not at its original scale
Arch E 36" x 48"

PLOT DATE 24-Jul-2012
DRAWN Silver King Mines
CHECKED A. Thurlkill
DATE July 1985
PDF FILE R797_TVAResourceMap.pdf
COORDS
CAD FILE p:\dewey-burdock\submittals\class iii\tvaresourcemap.dwg

POWERTECH (USA) INC.

Plate 17.1

TVA Resource Map

Dewey-Burdock Project