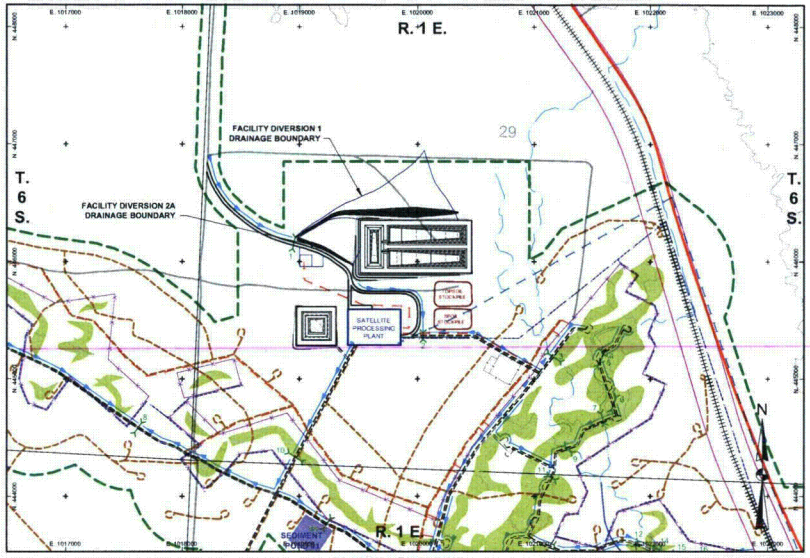
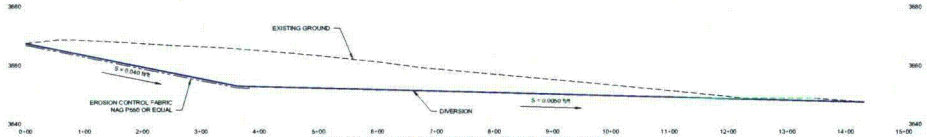
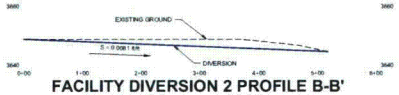


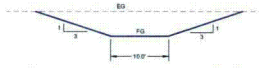
DRAINAGE AREA
SCALE: 1" = 500'
C.I. = 10'



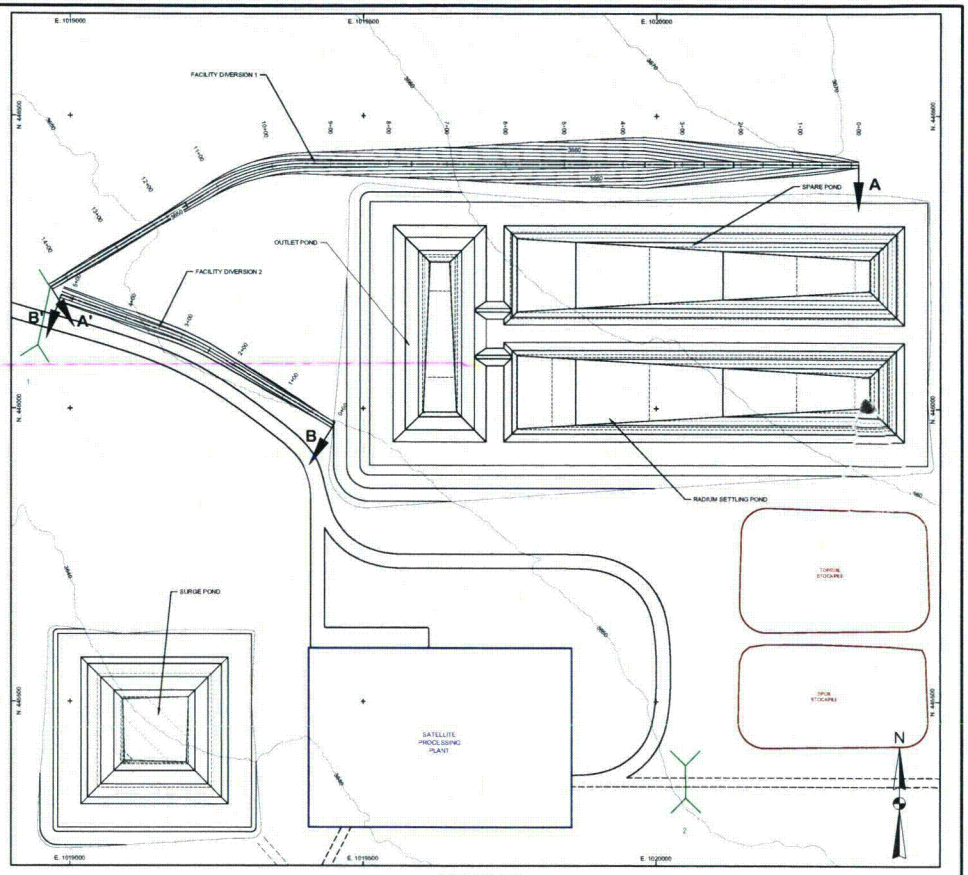
FACILITY DIVERSION 1 PROFILE A-A'
SCALE: HORZ. 1" = 100', VERT. 1" = 20'



FACILITY DIVERSION 2 PROFILE B-B'
SCALE: HORZ. 1" = 100', VERT. 1" = 20'



TYPICAL FACILITY DIVERSION CROSS SECTION
SCALE: 1" = 10'



SITE PLAN
SCALE: 1" = 100'
C.I. = VARIES

LEGEND

- PROPOSED AFFECTED AREA BOUNDARY
- COUNTY ROAD
- EXISTING ROAD
- PROPOSED PRIMARY ACCESS ROAD
- PROPOSED SECONDARY ACCESS ROAD
- PROPOSED LIGHT USE ROAD
- RAILROAD
- APPROXIMATE RAILROAD RIGHT-OF-WAY
- EPHEMERAL STREAM CHANNEL
- PROPOSED ROAD DITCH
- MAIN PIPELINE
- MADISON WELL PIPELINE
- PLANT-TO-PLANT PIPELINE
- PROPOSED OVERHEAD POWER
- PROPOSED WELL FIELD FENCE
- PROPOSED CULVERT
- ORE BODY
- STAGING AREA

FACILITY DIVERSION 1 CROSS SECTION

$$Q = \frac{1.49}{n} A R^{2/3} S^{1/2}$$

(STA. 0+00 TO 3+63)		(STA. 3+63 TO END)	
Q = 194.40 cfs	A = 18.52 ft²	Q = 194.40 cfs	A = 38.79 ft²
n = 0.030	WP = 18.38 ft	n = 0.030	WP = 24.52 ft
S = 0.040 ft/ft	R = 1.01 ft	S = 0.0050 ft/ft	R = 1.58 ft
b = 10 ft	V = 9.96 fps	b = 10 ft	V = 4.75 fps
	Yn = 1.33 ft		Yn = 2.30 ft

FACILITY DIVERSION 2 CROSS SECTION

$$Q = \frac{1.49}{n} A R^{2/3} S^{1/2}$$

Q = 48.10 cfs	A = 12.70 ft²
n = 0.030	WP = 16.20 ft
S = 0.0081 ft/ft	R = 0.78 ft
b = 10 ft	V = 3.79 fps
	Yn = 0.98 ft

HYDROLOGIC DESIGN STORM CALCULATIONS

FACILITY DIVERSION NO.	DRAINAGE BASIN PARAMETERS			6-HR, PMP STORM		
	DRAINAGE AREA (sq-mi)	CURVE NO. (CN)	WATERSHED LAG TIME (min)	6-HR, PMP PRECIP. (in)	PEAK INFLOW (cfs)	RUNOFF VOLUME (ac-ft)
1	0.013	84	16.95	22.1	184.4	13.8
2	0.003	84	12.75	22.1	48.1	3.2

NOTE: RUNOFF VOLUMES AND PEAK INFLOWS WERE COMPUTED BY THE HEC-HMS COMPUTER PROGRAM USING THE SCS TYPE II RAINFALL DISTRIBUTION.

This plate is provided to fulfill the requirements of ARSD 74.29:07:09 (6).

CONSULTANT: WWC ENGINEERING

REVISIONS				
#	DRAWN	CHECKED	APPROVED	DATE

SIGNATURE OF PREPARER

CHECK SCALES

PLOT DATE: 3 December 2012 | DATE: 3 December 2012

DRAWN: DAVE C. JOHNSON | PDF FILE: DIV_DDW_FACILITY_DDW.PDF | COORDS: NAD 27, South Dakota State Plane South (feet)

PREPARER: DALE E. BROWN | CADFILE: K:\Powertech\1127\DDWG\DIV_DDW_FACILITY.dwg

POWERTECH (USA) INC.

Plate 5.3-14

Satellite Facility Diversions
Deep Disposal Well Option

Dewey-Burdock Project