

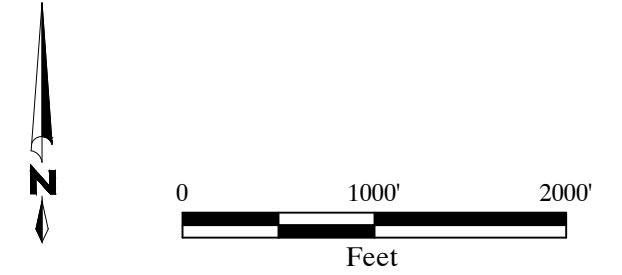
Runoff NRC S Type II 4.5 in. 100-Yr 24-Hr

	Area (ac)	Runoff Vol (acft)	RO Vol (yds3)	RO Vol (ft3)	Shape	Bottom Width (ft)	Top Width (ft)	Min. Height (ft)	SEDCAD Storage Height (ft)	Construction Storage Height (ft)	Minimum Free-board (ft)	Perimeter (ft)	Volume of Earthwork cut (cy)	Outside Berm (cy)	Storage (acft)
SPGM 9&10	6.329	6.8	10971	296,208	Trap (3:1)	12	42.00	5	4.5	5	0.5	2019	10095	5608	5.3
OVB-1	26.7	26.7	43076	1,163,052	Trap (3:1)	32	62.00	5	4.5	5	0.5	5907.5	51417	16410	27.8
SPGM 13	2.57	2.57	4146	111,949	Trap (3:1)	12	42.00	5	4.5	5	0.5	1314	6570	3650	3.5
SOVB-10	5.42	5.42	8744	236,095	Trap (3:1)	12	42.00	5	4.5	5	0.5	2100	10500	5833	5.5
Explosives Storage Pad	3.56	3.56	5743	155,074	Trap (3:1)	12	42.00	5	4.5	5	0.5	1588	7940	4411	4.2

- ### LEGEND
- SEDIMENT POND
 - STUDY AREA
 - PERMIT BOUNDARY
 - DIVERSION
 - MINE DITCH
 - PIT BOUNDARY
 - DISTURBANCE BOUNDARY
 - WATERSHED BOUNDARY
 - TIME OF CONCENTRATION
 - STREAM CHANNEL
 - SPGM STOCKPILE
 - SOVB STOCKPILE
 - OVB STOCKPILE
 - SMALL AREA EXEMPTION BERM
 - CULVERT
 - CONCRETE ARCH BRIDGE
 - HAUL ROAD
 - ACCESS ROAD
 - ROAD
 - GRASS FILTER BMP
 - STRAW WATTLE BMP
 - SECTION
 - TOPOGRAPHY (5 FT. INTERVALS)

REFERENCE

T139N R98W
 Permit Boundary: IEI, 11/12/2009.
 Mine Pit Boundary: Norwest, 01/20/2010.
 Township, Range and Section: ND HUB, 6/20/2006.
 Drainage Ways: Digitized from aerial photography, 6/19/2007.
 Contours: Generated from aerial photography stereo pairs, 6/19/2007.
 Projection: StatePlane, North Dakota South, NAD27, Feet.
 Contours are set at 5' intervals, unless otherwise specified.



REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RWV
△	12/13/10	CWB	COMPLETENESS COMMENT	JLS	CWB	JRH
△	09/21/10	CWB	COMPLETENESS COMMENT	JLS	CWB	JRH

PROJECT
SOUTH HEART COAL LLC
SOUTH HEART LIGNITE MINE
SOUTH HEART, NORTH DAKOTA



TITLE
SMALL AREA EXEMPTIONS - STOCKPILE
CONTAINMENT DESIGNS

NORWEST CORPORATION	PROJECT No.	23-428403	FILE No.	Ponds & Ditches.dwg	
	DESIGN	APO	2/15/10	SCALE	AS SHOWN
	CADD	JLS	2/15/10	REV.	2
	CHECK	JRH	12/13/10	Figure 3.6-9	
REVIEW	JRH	12/13/10			