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In C/ 0070035 Mining
for additional information

EXCESS-SPOIL DISPOSAL AREA #2 DESIGN

INTRODUCTION

This plan describes the design, construction, operation, and maintenance of the Excess Spoil Disposal Area #2. Appropriate maps and cross-section drawings of the area as designed are included in the Mining and Reclamation Plan. The MSHA ID Number associated with this facility is 1211-UT-09-02093-05.

Excess spoil and coal mine waste will be placed in the designated Excess Spoil Disposal Area #2 (see Plates 9-8 A, B, C & D) in a controlled manner to:

- (1) Minimize adverse effects of leachate and surface water runoff from the fill on surface and ground-water quality and quantity;
- (2) Ensure mass stability and prevent mass movement during and after construction;
- (3) Ensure that the final disposal facility is suitable for reclamation and revegetation compatible with the natural surroundings and the approved post-mining land use;
- (4) Not create a public hazard; and
- (5) Prevent combustion.

At no time will any non-coal mine waste (including, but not limited to, grease, lubricants, paints, flammable liquids, garbage, abandoned mining machinery, lumber, and other combustible materials generated during mining activities) be deposited in the excess spoil fill. No burning waste will be placed in the fill.

This disposal area is designed in accordance with the requirements for excess spoil ~~fills~~ areas as well as for refuse piles. Coal mine waste, which is disposed of in the excess spoil ~~fill~~ area, will be placed in accordance with the requirements herein and will be of the proper characteristics to be consistent with the design stability of the fill. Coal mine waste materials from activities located outside ~~the~~ this SCA permit area may be disposed of in the permit area only if of the proper characteristics to be consistent with the design stability of the fill as stated in this Appendix.

SITE SELECTION

The attached exhibit identified for the Excess Spoil Pile #2 identifies the location of the pile with reference to the SCA Power Plant and other features overlaid on a segment of the USGS 7½ minute Sunnyside Topographic Quad. This disposal area is located on relatively flat ground in the north east portion of the permit site in an area ~~currently~~ previously occupied by Slurry ponds #1 and #2 and the Clear Water Pond. This site was selected because it ~~is~~ was already a large incised hole in the existing disturbed area. Filling these holes will attempt to return the area to the approximate original contours. This site is designed with a ~~very~~ mild out slope for positive drainage and is located in an area without high groundwater or major surface runoff flows.

Additional benefits of this site also include the fact that it is a significant distance away from other major surface installations and no mine openings exist within a 500-foot radius of the pile's outer boundary perimeter [30 CFR 77.215-2 (b) (4)]. The SCA power plant is located more than 1000 feet to the west of the pile, and the SCA crushing facilities are located more than 700 feet west of the pile. (See plate 5-1 and 5-1E). It is expected that construction of the ~~fill~~ disposal area will not affect any previously undisturbed land in the area.

Federal regulations, 30 CFR 77.214 (b), also require isolation of the pile from any coal seams in the area. ~~The selected site is also ideal with regard to this requirement because~~ No coal seams exist within ~~even~~ the near proximity of the spoil pile.

STABILITY

The fill and appurtenant structures were designed using current, prudent engineering practices and meet the design criteria established by the Division. Qualified registered professional engineers experienced in the design of earth and rock fills have certified the design of the fill and appurtenant structures. Regulations require that the pile not have an outer slope steeper than 2 horizontal to 1 vertical [30 CFR 77.215 (h)]. Since the fill is designed with an out slope of approximately ~~5~~ 15-20% it has no trouble attaining a minimum long-term static safety factor of 1.5. The foundation and abutments of the fill are in the hole and will be stable under all conditions of construction.

FOUNDATION INVESTIGATIONS

Due to the simplicity of this design (filling an existing hole) foundation investigations were limited. No underground mine workings exist within the SCA permit area to have any effect upon the stability of the fill and appurtenant structures. The slope of the native foundation material in the disposal area does not exceed a slope of 2.8h:1v (36 percent).

Groundwater Conditions

- * No signs of groundwater have been observed within the existing ponds.
- * Surface water from areas above the fill is designed to be diverted around the fill.
- * The material to be disposed should be free draining and thus pore water pressures should not develop.
- * Any low permeability or wet waste material should be scattered throughout the fill.

TOPSOIL PRESERVATION

No topsoil was segregated from this the Slurry Pond area at the time of their construction in the 1970's. An existing topsoil pile was created for the Clear Water Pond. Since this area has been used as a slurry handling and disposal site for the past couple of decades, it would not be appropriate to segregate additional topsoil from this area for future use. All vegetative and organic materials will be removed from the disposal area prior to placement of excess spoil.

CONSTRUCTION

In accordance with 30 CFR 77.215-2 (b) (8), a description of the manner of construction to be employed at the site is as follows:

Excess spoil will be transported and placed in a controlled manner in horizontal lifts not exceeding 2 feet in thickness; concurrently compacted as necessary to ensure mass stability and to prevent mass movement during and after construction; graded so that surface and subsurface drainage is compatible with the natural surroundings; and covered with topsoil or substitute material. Material will be placed in the fill by end or belly dumping and then spread into compactable lifts. ~~Hauling and placing of the fill will be accomplished by entering the north end of Slurry Pond # 1, placing the fill and departing through the south end of Slurry Pond # 2.~~ The gradual progression of the fill will essentially fill the two slurry ponds to their proposed surface, then filling the Clearwater Pond and connecting to the initial phases of the pile constructed over the slurry pond area., followed by bringing the combined surface to its final designed elevations.

Compaction of the spoil materials and coal mine waste materials will be accomplished by wheel rolling from the hauling and spreading equipment such as ten wheel dump trucks, other haul trucks, belly dumps, scrapers, dozers, etc. Spreading and compacting the material in intermediate lifts less than two feet can add to the effectiveness of compaction by wheel rolling.

The final configuration of the fill will be suitable for the approved post-mining land use. The grade of the out-slope will be approximately ~~5-15-20~~ percent. Detailed drawings (including typical sectional maps of the pile crosswise and lengthwise) as required by 30 CFR 77.215-2 (b) (8), are provided as Plates 9-8 A, B, C, D. These show all dimensions of the spoil pile to be constructed.

No permanent impoundments will be constructed on the completed fill. The final surface will be left in a roughened condition such that the small depressions should minimize erosion and assist revegetation.

BURNING AND BURNED WASTE UTILIZATION

All possible efforts will be made to reduce the potential for the occurrence of coal mine waste fires in the Excess Spoil Disposal Area #2. Although coal mine waste will be placed in the fill, it is intended that this material will have a very low BTU level and therefore not create a significant risk of combustion. Ash materials from burned coal mine waste may be placed in the fill but should not create a significant risk of combustion. No burning waste will be placed in the fill.

In the event that a coal mine waste fire occurs, it will be extinguished by the proper ~~personal~~ ~~person~~ who conducts the surface mining activities, in accordance with the plan

approved by the Division and the Mine Safety and Health Administration as required by 30 CFR 77.215(j). This plan essentially entails the placement of two feet (or more if necessary) of non-combustible soil material over the burning area. Only those persons authorized by the operator, and who have an understanding of the procedures to be used, will be involved in the extinguishing operations. No burning or unburned coal mine waste will be removed from a permitted disposal area without a removal plan approved by the Division. Consideration will be given to potential hazards to persons working or living in the vicinity of the structure.

ACID- and/or TOXIC-FORMING POTENTIAL OF WASTE

Previous tests of the material at the SCA facilities have indicated that the acid- and/or toxic-forming potential of the waste is not a significant problem. However, in order to be conservative, analysis to determine the acid- and/or toxic-forming and alkalinity producing potential of the waste material disposed in the Excess Spoil Disposal Area will be performed for the constituents listed below. The objective of this sampling program is to identify areas within the fill that may adversely impact the surface water, groundwater, plant growth, or the post-mining land use. One grab sample per acre will be taken from each four-foot lift immediately following the completion of the lift and throughout construction of the pile. Results of the sampling shall be submitted to the Division with the Quarterly Engineering Inspection Reports.

Excess spoil that is acid- or toxic-forming or combustible materials placed in the disposal area will be adequately covered with four-feet of non-acid, non-toxic and non-combustible material, or otherwise treated, to control the impact on surface and groundwater, to prevent sustained combustion, and to minimize adverse effects on plant growth and the approved post-mining land use. Excess spoil that is not acid- or toxic-forming or combustible may be used to provide some, or all, of this adequate cover.

Coal mine waste materials, of which geologic properties are uncertain or which have sub-standard geologic characteristics, will be scattered within the interior of the pile at least ten feet from the outer slopes. Waste materials from areas outside of the SCA permit site, but which are comparable to the materials considered in the design of the fill, may be placed in the fill by SCA in accordance with the standards of this section but without additional restriction.

ANALYSIS PARAMETERS

- | | |
|---|----------------------------|
| * pH | * Electrical Conductivity |
| * Particle Size Analysis (% sand, silt, clay) | |
| * Soluble Ca, Mg, and Na | * Sodium Adsorption Ration |
| * Selenium | * Total N |
| * Nitrate-N | * Boron |
| * Maximum Acid Potential | Neutralization Potential |
| * Organic Carbon | * Sulfur-total |

PROTECTION OF SURFACE AND GROUND WATER

Runoff from areas above the Excess Spoil Disposal Area #2 will be diverted around the disposal area in stabilized diversion channels designed to safely pass the runoff from a 100-year, 6-hour precipitation event. Runoff from the surface of the Excess Spoil Disposal Area will be diverted into stabilized diversion channels designed to safely pass the runoff from a 100-year, 6-hour precipitation event.

The potential for acidic leachate is minimal because of the site selected for this permanent disposal area. The disposal area does not contain springs, natural or manmade watercourses, or wet weather seeps. Under-drains will not be necessary to insure the stability of the fill.

Wet waste, such as slurry, will not be disposed in the excess spoil area. If, for any reason, water seeps out from the base of the fill, it will be contained in the perimeter ditches and diverted with the surface runoff to the existing sediment ponds.

HYDROLOGIC FLOWS

Diversions ~~will behave been~~ constructed and will be maintained around the perimeter of the fill. Hydrologic calculations have been prepared for the surrounding area, which is fairly representative of the proposed ground surface during construction and will improve upon completion of the revegetation.

During construction of the fill, the existing diversions will be adequate to control runoff and direct the adjacent surface flows around the fill. These existing diversions include the old slurry ditch, which is no longer used for slurry transport, (at least 2 feet deep and 8 feet wide) and the surface diversion into the Clear Water Pond (approximately 1 foot deep and 4 feet wide). [30 CFR 77.215-2 (b) (6)]

Construction of the fill will occur in a layering manner such that the direct precipitation falling on the fill can flow off of the fill when the existing slurry ponds are filled. Following the filling of the slurry ponds and when it is necessary to divert runoff around the Clear Water Pond so that it can be filled with spoils, the final diversions (minimum 1.5 foot cut ditches and culverts where shown) will follow the alignments shown on Plate 9-8C. This shows that the runoff from this area will flow into the diversions, around the fill and either to the Pasture Pond or the upper end of the East Slurry Cell as shown.

EROSION CONTROL

Uncontrolled surface drainage will not be diverted over the out-slope of the disposal area. Outer slopes will be graded at a mild slope in order to minimize surface erosion at the site and provide adequate stability. The final surface configuration will leave a roughened

condition to reduce the potential for direct runoff from the fill. This will reduce the amount of rill and gully erosion and therefore increase the long-term stability.

All disturbed areas of the fill, will be revegetated upon completion of construction in an effort to demonstrate successful reclamation with less than four feet of borrow material cover over coal mine waste. The success of the revegetation will also evaluate its ability to control erosion.

The sediment ponds in place, until bond release, will perform final sediment control.

INSPECTIONS

A qualified registered professional engineer, or other qualified professional specialist under the direction of the professional engineer, will periodically inspect the fill during construction. The professional engineer or specialist will be experienced in the construction of earth and rock fills.

Such inspections will be made at least quarterly throughout construction and during critical construction periods. Critical construction periods will include at a minimum: foundation preparation, including the removal of all organic material and topsoil; installation of final surface drainage systems; and, the final graded and revegetated fill. Regular inspections by the engineer or specialist will also be conducted during placement and compaction of fill materials.

The qualified registered professional engineer will provide a certified report to the Division promptly after each inspection that the fill has been constructed and maintained as designed and in accordance with the regulatory requirements. The report will include appearances of instability, structural weakness, and other hazardous conditions as well as the results of samples taken to determine the acid/toxic potential. The photographs accompanying each certified report will be taken in adequate size and number with enough terrain or other physical features of the site shown to provide a relative scale to the photographs and to specifically and clearly identify the site. A copy of each inspection report will be retained at or near the mine site. A copy of the report will be sent promptly by SCA to DOGM.

If any examination or inspection discloses that a potential hazard exists, the Division will be informed promptly of the findings and of the emergency procedures formulated for public protection and remedial action. If adequate procedures cannot be formulated or implemented, the Division will be notified immediately. The Division will then notify the appropriate agencies that other emergency procedures are required to protect the public.

More frequent inspections will be conducted if a danger of harm exists to the public health and safety or the environment. Inspections will continue until the refuse pile has been finally graded and revegetated or until a later time as required by the Division.

CAPACITY of the EXCESS SPOIL DISPOSAL AREA #2

This disposal area has a design capacity of approximately ~~130,000~~ 217,000 cubic yards (see calculation table on next page). Upon approval, it is readily available for use without additional site preparation. Over the life of the SCA facility, the spoil material and coal mine waste which may potentially be disposed in excess spoil disposal areas may come from various sources. These sources are explained in detail in Appendix 9-5. However, it is expected that this site will principally be used for disposal of low fuel potential/high ash rejects from the crushing operation. Under currently planned operations, it is anticipated that approximately 20,000 cubic yards of this reject material may require disposal each year within the next permit term. This site alone has adequate capacity to dispose of all anticipated reject material to be generated within the next permit term.

FINAL RECLAMATION OF SPOIL DISPOSAL SITE

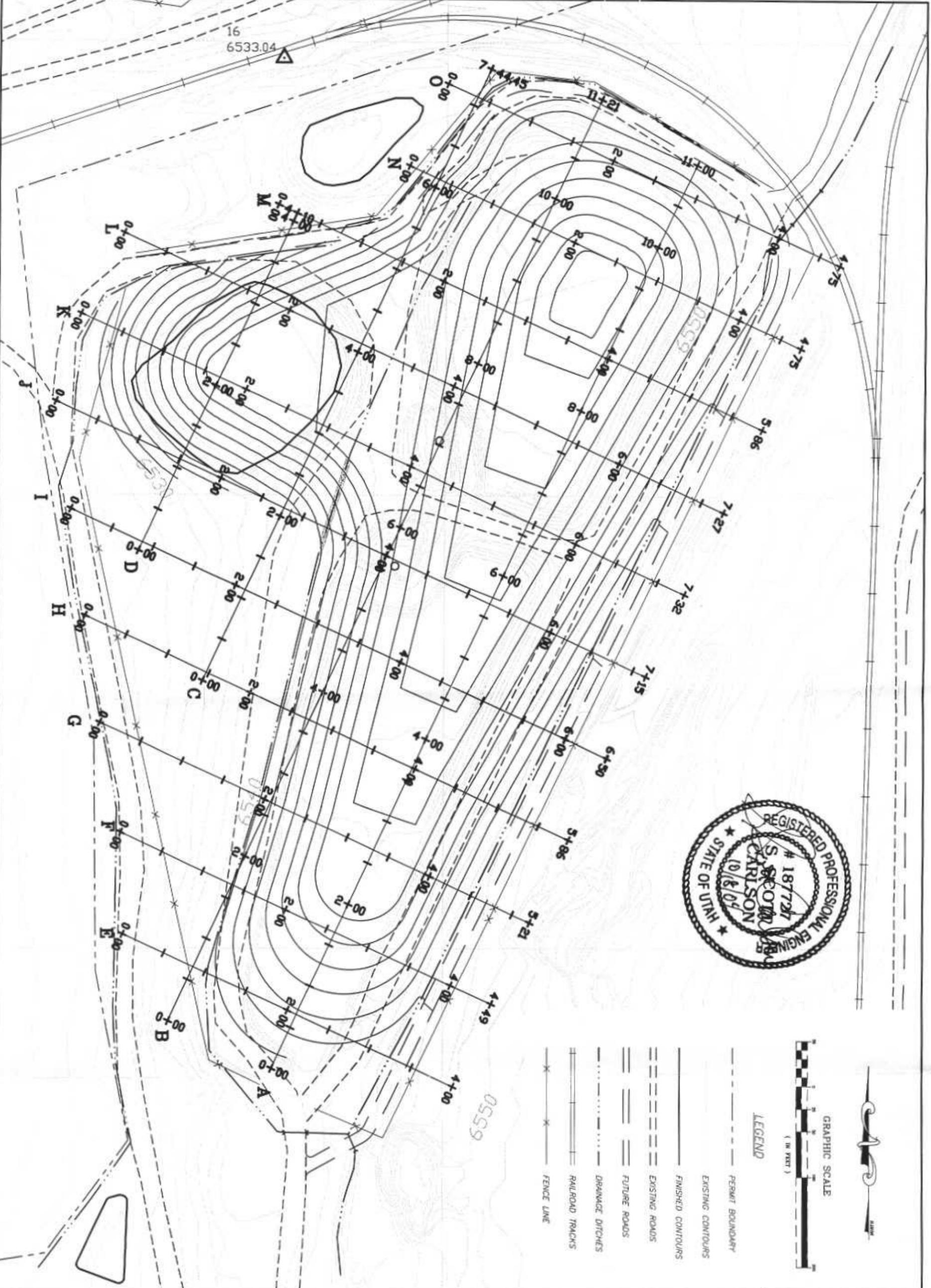
Final reclamation of Excess Spoil Disposal Area #2 will be in accordance with applicable DOGM regulations. The excess spoil obtained over the life of SCA operations will be placed in a controlled manner to ensure that the final disposal facility will be suitable for reclamation and revegetation compatible with the natural surroundings and the approved post-mining land use. As previously discussed, it is the intent of SCA to initially utilize this site as a demonstration area to evaluate the success of reclamation with less than four feet of borrow material cover over coal mine waste. Nonetheless, SCA has posted bond adequate to reclaim the area with a total of four feet of cover if necessary. Release of this bond will not be requested until the reclamation is demonstrated successful.

Sunnyside Cogeneration Associates
Sunnyside Refuse and Slurry C/007/035
Excess Spoil Disposal Area #2
Revised Capacity Calculations

	<u>Cross Sectional Areas</u>		<u>Volume Comparison Calculations</u>		
	<u>Total Pile Area</u> <u>(1997</u> <u>conditions) (sf)</u>	<u>Remaining</u> <u>Pile Area</u> <u>(2002</u> <u>conditions)</u> <u>(sf)</u>	<u>Dist.</u> <u>Between</u> <u>Sections</u> <u>(ft)</u>	<u>Total Pile</u> <u>Volume</u> <u>(beginning 1997)</u> <u>(cy)</u>	<u>Remaining</u> <u>Pile Volume</u> <u>(after 2002)</u> <u>(cy)</u>
<u>South</u>	<u>0</u>	<u>0</u>	<u>0</u>		
<u>Section E</u>	<u>849</u>	<u>622</u>	<u>48</u>	<u>755</u>	<u>553</u>
<u>Section F</u>	<u>2,222</u>	<u>1,664</u>	<u>100</u>	<u>5,687</u>	<u>4,233</u>
<u>Section G</u>	<u>3,071</u>	<u>2,047</u>	<u>100</u>	<u>9,802</u>	<u>6,872</u>
<u>Section H</u>	<u>3,911</u>	<u>2,426</u>	<u>100</u>	<u>12,930</u>	<u>8,283</u>
<u>Section I</u>	<u>4,479</u>	<u>2,816</u>	<u>100</u>	<u>15,537</u>	<u>9,707</u>
<u>Section J</u>	<u>5,303</u>	<u>3,734</u>	<u>100</u>	<u>18,115</u>	<u>12,130</u>
<u>Section K</u>	<u>9,951</u>	<u>9,258</u>	<u>100</u>	<u>28,248</u>	<u>24,059</u>
<u>Section L</u>	<u>10,424</u>	<u>7,926</u>	<u>100</u>	<u>37,731</u>	<u>31,822</u>
<u>Section M</u>	<u>7,880</u>	<u>4,710</u>	<u>100</u>	<u>33,896</u>	<u>23,400</u>
<u>Section N</u>	<u>7,555</u>	<u>4,240</u>	<u>100</u>	<u>28,583</u>	<u>16,574</u>
<u>Section O</u>	<u>4,110</u>	<u>1,770</u>	<u>100</u>	<u>21,602</u>	<u>11,130</u>
<u>North</u>	<u>0</u>	<u>0</u>	<u>55</u>	<u>4,186</u>	<u>1,803</u>
				<u>217,072</u>	<u>150,567</u>

Note: Volume 1997 represents the total volume of the pile based on the bottom surface that existed in 1997 prior to beginning construction and filling the slurry ponds. Volume 2002 represents the remaining volume based on the existing surface in 2002 with the slurry ponds partially filled. Both calculations are projecting a finished top surface as shown on the drawings signed Oct 18, 2004.

Note: See Drawings 9-8B and 9-8D for cross section maps

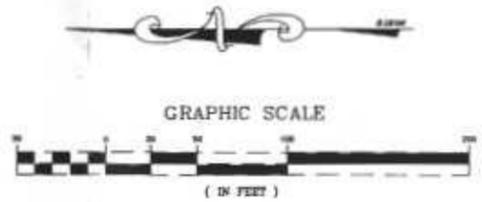
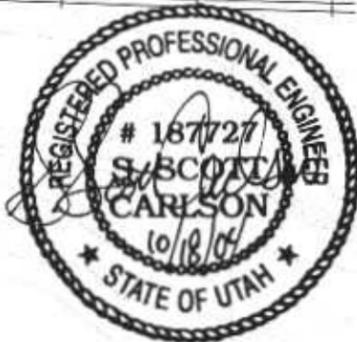
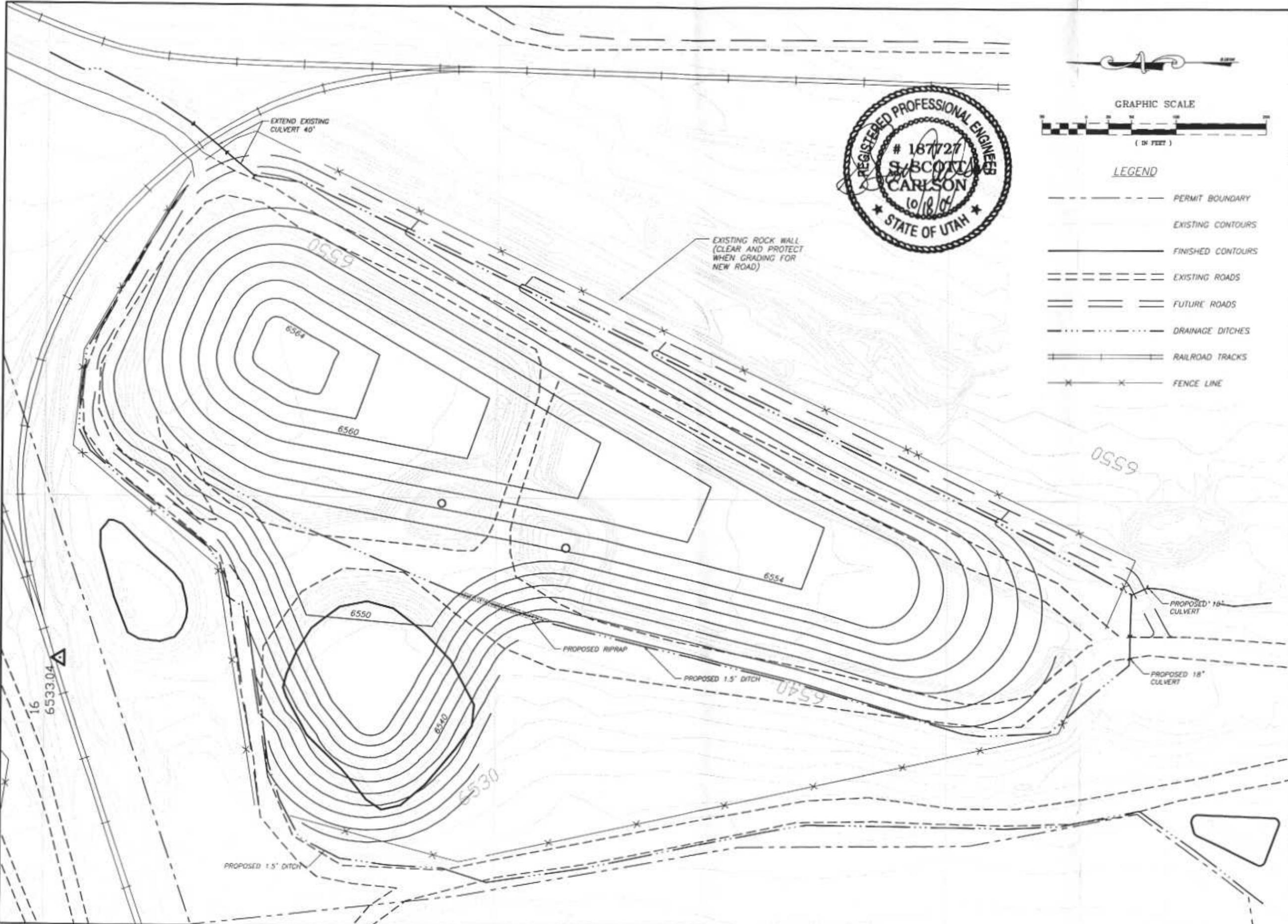


- LEGEND**
- PERMIT BOUNDARY
 - - - EXISTING CONTOURS
 - FINISHED CONTOURS
 - == EXISTING ROADS
 - == FUTURE ROADS
 - · - · - DRAINAGE DITCHES
 - RAILROAD TRACKS
 - FENCE LINE



9-8B SHEET	DESIGNED: SSC DRAWN: WC CHECKED: SSC	PSOMAS 2825 East Cottonwood Parkway, Suite 120 Salt Lake City, Utah 84121 (801) 270-5771 (MO) 270-5782 (FAX)	RECEIVED APR 18 2005 DIV. OF OIL, GAS & MINING	SUNNYSIDE COGENERATION ASSOC. PROPOSED FINISHED SURFACE EXCESS SPOIL DISPOSAL AREA #2		DATE: 10/01/2004 PLOT DATE: SCALE: 1" = 100' PROJECT NUMBER: BSUND10500

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LEGEND

- PERMIT BOUNDARY
- - - EXISTING CONTOURS
- FINISHED CONTOURS
- - - EXISTING ROADS
- == FUTURE ROADS
- · - · - · - · DRAINAGE DITCHES
- ||| RAILROAD TRACKS
- * * * FENCE LINE

DATE	10/01/2004
PLT	WAL
SCALE	1" = 100'
PROJECT	B504010500

SUNNYSIDE COGENERATION ASSOC.
DRAINAGE AND DIVERSIONS
EXCESS SPOIL DISPOSAL AREA #2

PSOMAS
2825 East Colterwood Parkway, Suite 102
Salt Lake City, Utah 84127
(801) 224-5377 (801) 224-5342 (FAX)

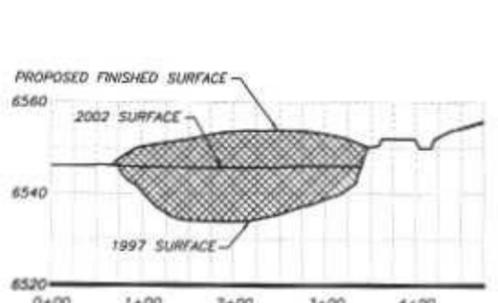
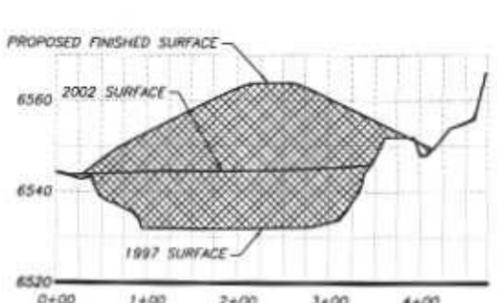
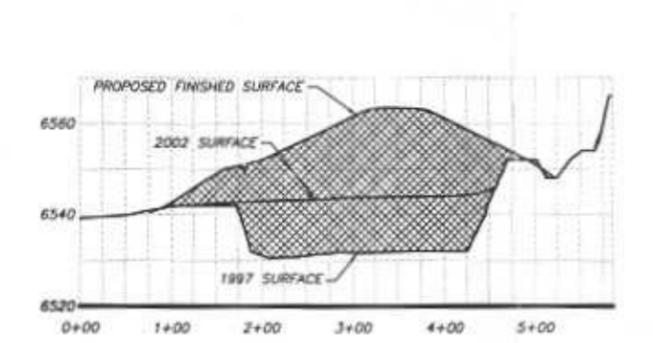
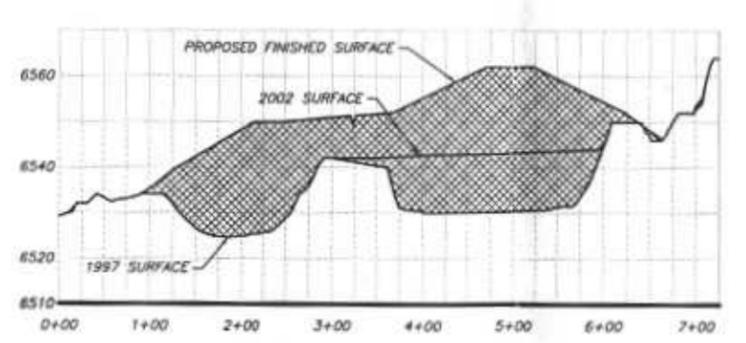
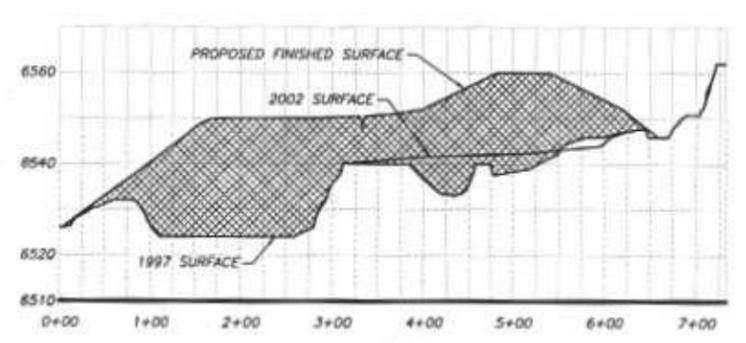
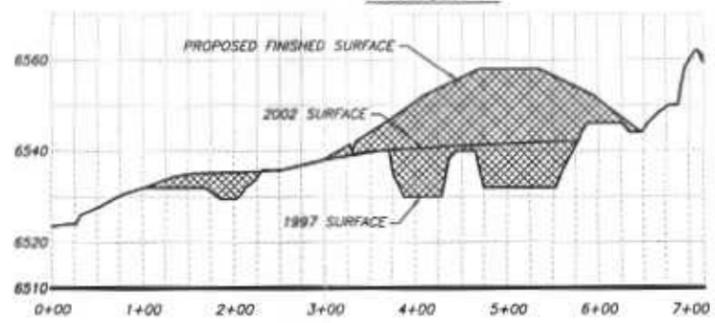
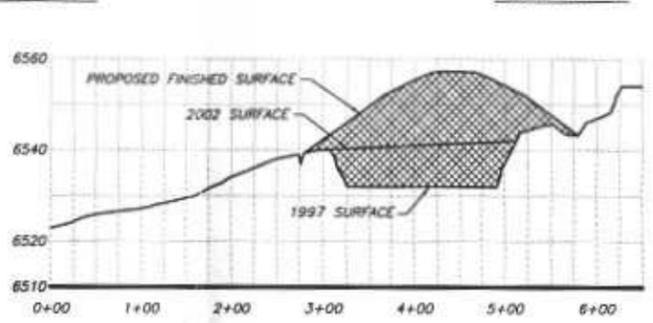
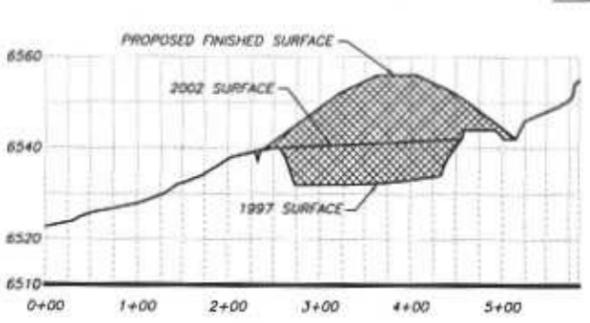
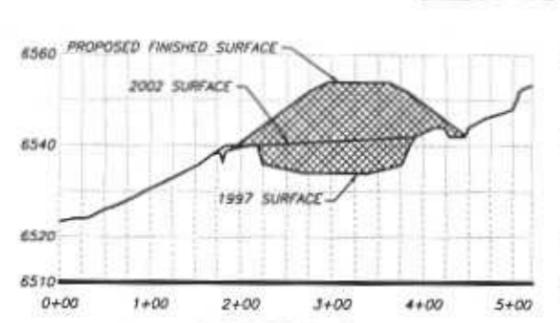
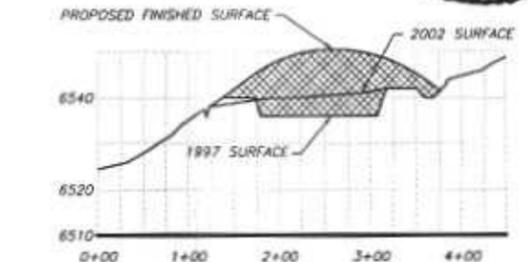
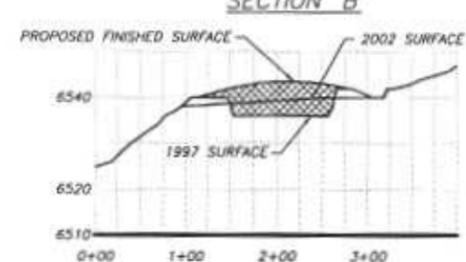
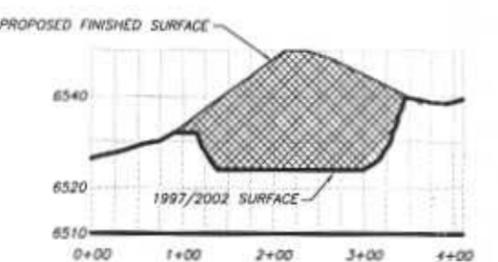
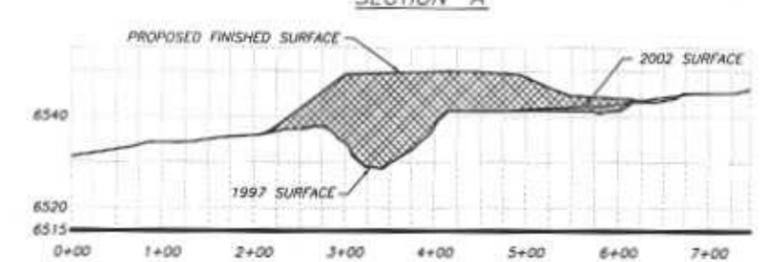
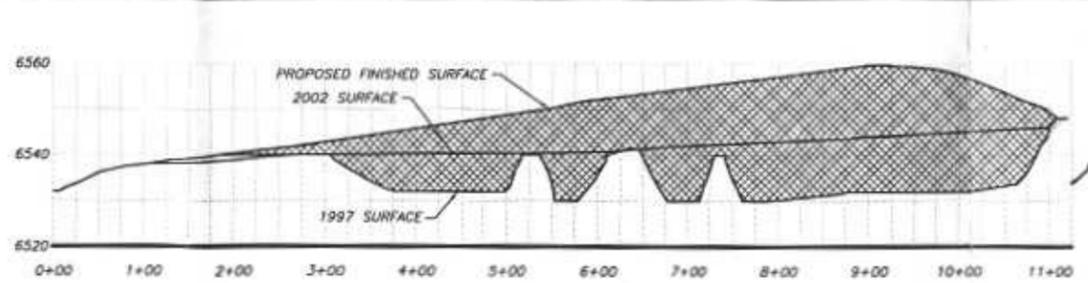
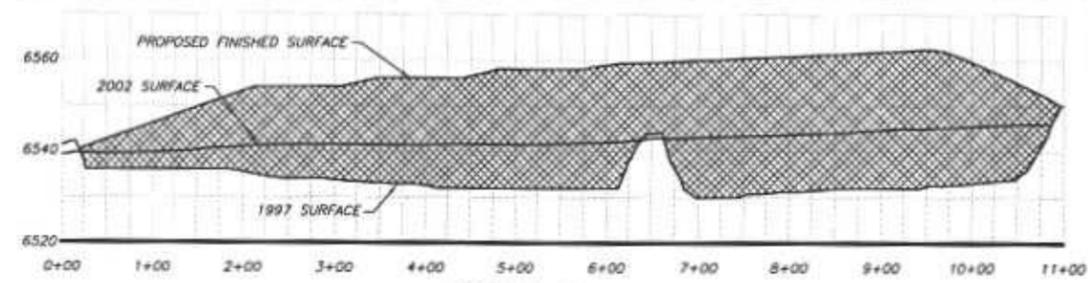
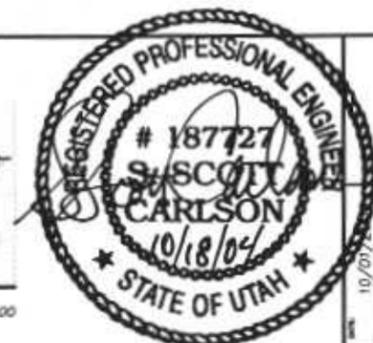
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9-8C

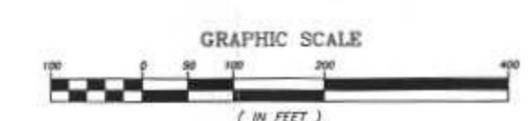
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APR 18 2005

DIV. OF OIL, GAS & MINING



Site	Stratum		Site Volume Table: Unadjusted		Net	Method
	Surf1	Surf2	Cut	Fill		
1997	1997	existing	1997	top-fg		
			55	216600	216545 (F)	Grid
			78	217039	216961 (F)	Composite
2002	2002	existing	2002	top-fg		
			87	218005	217918 (F)	Prismoidal
			59	148751	148693 (F)	Grid
		84	149181	149097 (F)	Composite	
		84	150394	150310 (F)	Prismoidal	



HORIZONTAL SCALE: 1" = 200'
VERTICAL SCALE: 1" = 40'

LEGEND

- FINISHED SURFACE
- - - EXISTING SURFACE
- █ EXCESS SPOIL MATERIAL

SUNNYSIDE COGENERATION ASSOC.
CROSS SECTIONS
EXCESS SPOIL DISPOSAL AREA #2

P S O M A S
2525 East Colleton Parkway, Suite 100
Salt Lake City, Utah 84121
(800) 270-2317 (Ext) 270-2382 (Fax)

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DIV. OF OIL, GAS & MINING

SSC	WC	SSC
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9-8D

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