silt fences placed just above the culvert inlets treating any runoff. Approximate silt fence locations are shown on Plates 7-1C and 7-1E. Upon completion of construction, final as-built contours will be submitted to the Division.

Final crowning of the road and installation of permanent ditches will be completed following initial road and pad contouring. The approximate proposed road and pad contours are shown on Plates 2-4C and 2-4E.

A slope stability analysis of the cut slopes and fill areas, as well as some discussion on the construction methodology, is on page 3H-44 following the cross sections.

Upon completion of regrading activities, interim stabilization of the cut slopes will be accomplished through hydroseeding as described in Appendix 3-G. Cut slopes will be seeded using the seed mix and mulch described in Tables 3G-1 and 3G-2. Downslopes will be seeded by hand prior to the placement of erosion control matting using the permanent seed mix shown in Table 9.5-3. This seed mix will be used in order to establish shrubs as well as grasses to aid in interim stability.

The final as-built cut and fill material volumes are shown in Table 3H-2 on pg. 3H-71.

During reclamation 1,000 yds^3 of material was hauled from TS-15 as described on page 3O-13. Because of this 1,000 yds^3 of material will be left in TS-8 for use in reclamation in that area.

Figure 3O-3 shows the locations of cross-sections for the No. 3 Mine Portal Pad area. The construction sequence will start with the recovery of the topsoil located on the existing cut bench above the proposed pad area. Initial topsoil on the slopes will be recovered using a trackhoe to reach approximately 15' below the bench. A pilot road cut will then be made using the trackhoe, and the material will be pulled back onto the bench. As the pilot cut proceeds into the bottom of the canyon, the topsoil will be removed from the lower slopes wherever the trackhoe can reach. This process will continue until the pilot cut reaches the drainage area where the pad fill is to be placed.

Once access into the drainage has been constructed, the crews will proceed to recover all of the topsoil, which will be hauled to the topsoil storage area shown on Plate 2-4F. An estimated volume of 5,143 cu yds of topsoil material will be recovered. After the topsoil has been removed, the fill will be placed as described in this Appendix. Table 3O-4 shows the calculated cut and fill volumes. The contours of the pad outslope may vary slightly to account for the shortage in cut volumes shown in the Table.

During construction 1,000 yds^3 of material was excavated and moved from TS-15 to TS-11 to allow for construction of the tunnel. Once construction was completed 1,000 yds^3 of material was hauled from TS-17 to backfill the tunnel in TS-15 and the material in TS-11 was left there for reclamation.

During reclamation, the cut and fill process will be reversed. The reclaimed slopes will be reconstructed to approximate original contour, with the exception that localized ridges between drainages will be varied slightly from the original contours. In addition, a portion of the cut slope, shown on Plate 3-2G, will remain in place due to slope stability requirements. This will provide additional material which will be used to eliminate to the extent possible the bench cut which existed prior to mining. This variation is shown in portal area cross-sections 1+00, 2+00, and 3+00.

TS-8 Upper Storage Pad

TS-8 will be reclaimed as shown on the following cross-sections. The soil labeled as Tank Seam Access Road fill material was not included in the calculations since it will be used while reclaiming the Tank Seam Access Road (Appendix 3-H). 1,000 yds^3 of this material will remain in place as described on page 3H-10. A volume of 952 cu. yd. of fill material will come from TS-5 or TS-6. A summary of the cut and fill volumes is shown in table 3L-7.

Table 3L-7. Area TS8 Cut & Fill Summary

	Fill (-) Volumes (cu. yd.)	Cut (+) Volumes (cu. yd.)			**Volume Cumulative (cu. yd.)**
Section	**Total Fill Volume**	Substitute Topsoil	Regular Soil	**Total Cut Volume**	
0+00	**2,100**	552	0	**552**	**-574**
1+00	**1,300**	1,463	7	**1,470**	**-404**
2+00	**2,218**	1,537	107	**1,644**	**-1,952**
Totals	**5,618**	3,552	114	**3,666**	

TS-5 Tipple and Loadout Area

The tipple and loadout area will be reclaimed to match the contours shown on Plate 3-2C, although actual contours may vary somewhat to account for required cut volumes and onsite concrete disposal. The excess coal waste will be used as fill in this area and will be buried a minimum of 4' deep, with a minimum of 12" of substitute topsoil material applied on the surface. In sections 3+00 through 8+00 the existing road on the east side will be left in place for post mining access as shown on Plate 3-2C. Where no regrading is required, and in areas were the cut leaves at least 12" of substitute topsoil material, the area will be ripped and existing substitute topsoil material will be used in place. 15,428 cu. yd of material can be generated in TS-5 for use in TS-7 and TS-8, which exceeds the volume needed as shown in Table 3L-1. 1,000 yds^3 of this material will go to TS-17 as described on page 3P-7.

The west slope of the tipple area, shown in cross-section 9+00, will be filled to cover the coal waste which exists in the area. Soil and substitute topsoil from the coal storage pad will then be placed over the coal waste as shown in cross-section 9+00. The slope below the tipple pad will consist of removing coal waste material and replacing it with substitute topsoil material. Although the removing and replacing results in a minimal change in the cross-section and contours, the volumes in Table 3L-4 reflect the removal and replacement of this material.

A summary of the cut and fill volumes is shown in table 3L-4.

Inter-Mountain Laboratories, Inc.

1633 Terra Avenue
Sheridan, WY 82801

Soil Analysis Report

C.W. Mining Company
Bear Canyon Mine
P.O. Box 1245
Huntington, UT 84528

Client Project ID: Bear Canyon Mine
Date Received: 09/30/02

Set #0103S00365
Report Date: 01/14/03

Lab Id	Sample Id	pH	Saturation	EC @ 25°C	Calcium	Magnesium	Sodium	Potassium	SAR
		s.u.	%	mmhos/cm	meq/L	meq/L	meq/L	meq/L	
0103S00365	RFM-1 Floor	8.3	28.6	1.64	3.36	10.4	4.01	0.57	1.53
0103S00366	RFM-1 Coal	3.7	73.1	1.27	1.47	3.67	4.81	0.31	3.00
0103S00367	RFM-1 Ceiling	8.2	27.4	2.39	4.55	17.9	6.29	0.89	1.88
0103S00368	Sed Pond A	8.3	39.0	3.15	14.9	14.9	6.71	0.52	1.74

These results only apply to the samples tested.

Abbreviations for extractants: PE= Saturated Paste Extract, H2OSol= water soluble, AB-DTPA= Ammonium Bicarbonate-DTPA, AAO= Acid Ammonium Oxalate
Abbreviations used in acid base accounting: T.S.= Total Sulfur, AB= Acid Base, ABP= Acid Base Potential, PyrS= Pyritic Sulfur, Pyr+Org= Pyritic Sulfur + Organic Sulfur, Neut. Pot.= Neutralization Potential
Miscellaneous Abbreviations: SAR= Sodium Adsorption Ratio, CEC= Cation Exchange Capacity, ESP= Exchangeable Sodium Percentage

Reviewed By: _____
Joey Sheeley, Soils Lab Supervisor

Inter-Mountain Laboratories, Inc.
1633 Terra Avenue
Sheridan, WY 82801

Soil Analysis Report

C.W. Mining Company
Bear Canyon Mine
P.O. Box 1245
Huntington, UT 84528

Client Project ID: Bear Canyon Mine
Date Received: 09/30/02

Set #0103S00365
Report Date: 01/14/03

Lab Id	Sample Id	Very Fine Sand	Sand	Silt	Clay	Texture	CO3	Organic Matter	Alkalinity PE
		%	%	%	%		%	%	meq/L
0103S00365	RFM-1 Floor	16.9	74.0	18.0	8.0	SANDY LOAM	45.8	0.2	2.20
0103S00366	RFM-1 Coal	<0.1	92.0	6.0	2.0	SAND	<0.5	32.3	8.56
0103S00367	RFM-1 Ceiling	8.0	54.0	32.0	14.0	SANDY LOAM	66.9	0.2	1.40
0103S00368	Sed Pond A	13.2	76.0	14.0	10.0	SANDY LOAM	12.8	1.1	0.80

These results only apply to the samples tested.

Abbreviations for extractants: PE= Saturated Paste Extract, H20Sol= water soluble,AB-DTPA= Ammonium Bicarbonate-DTPA, AAO= Acid Ammonium Oxalate
Abbreviations used in acid base accounting: T.S.= Total Sulfur, AB= Acid Base, ABP= Acid Base Potential, PyrS= Pyritic Sulfur, Pyr+Org= Pyritic Sulfur + Organic Sulfur, Neut. Pot.=Neutralization Potential
Miscellaneous Abbreviations: SAR= Sodium Adsorption Ratio, CEC= Cation Exchange Capacity, ESP= Exchangeable Sodium Percentage

Reviewed By: _____
Joey Sheeley, Soils Lab Supervisor

Inter-Mountain Laboratories, Inc.
1633 Terra Avenue
Sheridan, WY 82801

Soil Analysis Report

C.W. Mining Company
Bear Canyon Mine
P.O. Box 1245
Huntington, UT 84528

Client Project ID: Bear Canyon Mine
Date Received: 09/30/02

Set #0103S00365
Report Date: 01/14/03

Lab Id	Sample Id	TOC	Total Sulfur	Neutral. Pot.	Boron PE	Nitrogen Nitrate	Phosphorus	Selenium
		%	%	t/1000t	ppm	meq/L	mg/Kg	ppm
0103S00365	RFM-1 Floor	0.1	<0.01	470	0.17	0.66	2.00	<0.02
0103S00366	RFM-1 Coal	18.8	0.44	-2.55	10.6	12.3	4.90	<0.02
0103S00367	RFM-1 Ceiling	0.1	<0.01	691	0.52	0.92	1.70	<0.02
0103S00368	Sed Pond A	0.6	0.29	127	0.86	0.69	3.60	<0.02

These results only apply to the samples tested.

Abbreviations for extractants: PE= Saturated Paste Extract, H2OSol= water soluble,AB-DTPA= Ammonium Bicarbonate-DTPA, AAO= Acid Ammonium Oxalate
Abbreviations used in acid base accounting: T.S.= Total Sulfur, AB= Acid Base, ABP= Acid Base Potential, PyrS= Pyritic Sulfur, Pyr+Org= Pyritic Sulfur + Organic Sulfur, Neut. Pot.= Neutralization Potential
Miscellaneous Abbreviations: SAR= Sodium Adsorption Ratio, CEC= Cation Exchange Capacity, ESP= Exchangeable Sodium Percentage

Reviewed By: _____
Joey Sheeley, Soils Lab Supervisor

Map(s) is kept with this application located in the Public Information Center of our Salt Lake City office.

PLATE 8-5G, RECLAMATION AREA

PLATE 7-1G, HYDROLOGY MAP

PLATE 3-7G, PRE-MINING LAND SURFACE CONFIGURATION

PLATE 3-2G, POST-MINING TOPOGRAPHY

PLATE 2-4G, SURFACE FACILITIES