FREEPORT-MCMORAN
COPPER & GOLD

Tyrone Operations
P.O. Drawer 571
Tyrone, NM 88065

April 25, 2014

UPS Overnight #: 1Z 875 3D5 01 9671 2810

Mr. David Ohori
Mining and Minerals Division
Mining Act Reclamation Program
1220 South St. Francis Drive
Santa Fe, NM 87505

Dear Mr. Ohori:

RE: Draft Modification to the Closeout Plan GR010RE;
Construction of the 9AX Borrow Material Stockpile

Introduction

Freeport-McMoRan Tyrone Inc. (Tyrone) is proposing a change to the 9A Stockpile to authorize an expansion of its footprint as identified in current permit documents while remaining within the currently-approved design limits. The expanded stockpile area, referred to as the 9AX, is intended as a future source of cover material or borrow material for use in reclamation (NMAC 19.10.1.7.M.(3)) within the Tyrone Mine permit and design limit boundaries (Figure 1). The existing and approved 9A Stockpile footprint will be expanded beyond the currently approved footprint by 46 acres (Figure 1). Construction of this borrow material stockpile will allow continued mining at the Little Rock Mine and facilitate future reclamation by providing a source of borrow material proximal to facilities that will be reclaimed. As part of the modification request, changes to the existing Tyrone Closeout Plan, Permit GR010RE and a financial assurance cost estimate analysis associated with this activity are provided. Adjustments to the existing financial assurance will be addressed more definitively as part of the 2013 CCP update. A modification application fee in the amount of $1000.00 accompanies six hard and two electronic copies of this request.

Environmental Opportunity

The proposal to use this location as a borrow material stockpile would facilitate closure of the nearby leach and waste rock stockpiles. The source of borrow material is leachcap rock excavated from the Little Rock Mine. This material has been approved by the NMED and MMD to be stored in the 9A Stockpile for reclamation borrow that may be used for final reclamation of the Tyrone Mine in a letter dated June 22, 2011. At Tyrone, leachcap borrow has been used for a number of reclamation projects. It was placed on the 1C Stockpile and then completed with one foot of Gila Conglomerate. Three feet of leachcap was placed on the reclaimed Copper Leach Stockpile located just south of the Little Rock Mine. Recently,

three feet of leachcap borrow material was approved as cover for the USNR Reclamation Area. Test plots have also been constructed on the 1C/7A Stockpile Unit to evaluate the overall stability and vegetative success as suitable reclamation borrow material.

Staging borrow material closer to reclamation sites reduces the overall haulage cost directly reducing financial assurance. It also results in reduced fuel consumption and associated emissions during reclamation.

Tyrone intends to use the borrow material from the 9AX Stockpile for future reclamation projects. For reclamation planning purposes, only two feet of leachcap and one foot of Gila will be placed on nearby waste rock and leach stockpiles. In the future, three feet of leachcap may be proposed as a reclamation cover.

The 9AX Stockpile will be constructed at angle of repose to minimize surface disturbance during operation. Any borrow material not used for reclamation cover or fill will be reclaimed in accordance with NMA Permit No. GR010RE.

Regulatory Land Status

Tyrone is regulated by the New Mexico Mining and Mineral Division (MMD) under Permit No. GR010RE. The 9AX borrow stockpile will not be a discharging facility for purposes of the Water Quality Commission Ground Water Discharge Permit Regulations because the stockpiled material will not discharge contaminants at levels in excess of ground water quality standards. The 9AX Stockpile occurs within the MMD approved Tyrone Mine design limit boundary. The proposed 9AX Stockpile is fully located on land owned by Tyrone. The 9AX Stockpile is for storing borrow materials used for reclamation and not for the process of obtaining useful minerals as defined by the NMAC 19.10.1.7.M(3).

Existing Conditions

Mine Facilities

The 9AX Stockpile will be constructed adjacent to the existing 9A Stockpile (Figure 1) and west of the 3A Leach Stockpile. The operational and reclaimed 9AX Stockpile will not encroach up the 2A and 3A Leach Stockpiles. The operational 9AX Stockpile footprint is approximately 46 acres in size when placed at angle of repose. Within that area, 23 acres will occur on currently disturbed ground.

Climate

The climate at Tyrone is warm and dry with mean annual precipitation of about 16 inches and a mean annual temperature near 50°F. Precipitation falls mainly as rain, but snow may occur from November to March. Most of the precipitation in the area falls during July through October in the form of rain during short, intense thunderstorms. Monthly precipitation is generally less than an inch each month from November through June, peaks in July, August and September at between 2 and 3 inches each month and generally falls to about 1 inch in October. Evaporative demand in this region is high and annual evaporation far exceeds annual precipitation.

Geology

The Tyrone copper deposit is a porphyry copper deposit. The Tyrone deposit is generally confined to a triangular area at the southeast end of the Big Burro Mountains and is bounded by the Burro Chief and West Main Fault Systems on the west, the Sprouse-Copeland Fault on the east and the San Salvador fault system on the south. The proposed 9AX Stockpile area is underlain by Burro Mountain Granite and Gila Conglomerate.

The leachcap borrow material that will be used to construct the 9AX Stockpile will be derived from the Little Rock Mine. The leachcap is highly and deeply weathered igneous intrusive rock that is inert and has no useful mineral value. The chemical and physical characteristics of this leachcap makes it suitable for a reclamation borrow as documented in several reports reviewed and approved by the MMD.

Soils and Vegetation

The soils in Grant County were previously mapped by the Forest Service and Soil Conservation Service (Parnham et. Al., 1983). Site-specific soil and vegetation surveys were conducted at Tyrone in 1997 as part of the closure/closeout studies (DBS&A 1997c). The distribution of soils at the Tyrone Mine is controlled by the climate, geology, age of the land surfaces and physiography of the area. The vegetation is indicative of the regional climate modified by soil and topographic factors. The vegetation in the permit area is not unique relative to the surrounding area and represents a minor fraction of plant communities that are locally and regionally extensive. No threatened or endangered plant species are recognized as occurring in the Tyrone Mine permit area.

Four soil-vegetation associations have been identified within the Tyrone Mine permit mine area. These include the: (1) alluvial grassland association; (2) piedmont scrub savanna association; (3) mountain slope scrub savanna association; and (4) mountain slope mixed evergreen woodland association. The dominant soil in the 9AX Stockpile area is the piedmont scrub savanna.

Groundwater and Stormwater

The reclamation borrow material placed at this location will meet all regulations and conditions specified for the permitted 9A Stockpile. The water chemistry of meteoric water that comes into contact with the reclamation borrow material will not be affected. Similarly ground water will not be affected. No perennial streams are present in the 9AX Stockpile watershed. Surface water, during operation and reclamation, will flow towards the Mangas Wash to the northeast and to Deadman Creek to the west, which also reports to the Mangas Wash (Figure 6).

Stockpile Construction and Closeout

Operational Stockpile Construction

The operational phase of the 9AX Stockpile is planned to begin in 2014. To ensure that the proper material is placed at this location, the currently approved Little Rock Borrow Material

Handling Plan will continue to be executed. At full build-out, the stockpile will contain an estimated 22 million tons of potential borrow material and occupy approximately 60 acres (14 of those acres will occur on the existing 9A Stockpile) resulting in a stockpile expansion of 46 acres. The 9AX Stockpile will have a maximum thickness of approximately 355 feet (Figures 2 and 3). The borrow material will be placed at angle of repose to maximize the stockpile capacity and minimize the disturbance area. During the operational phase of stockpile construction, all stormwater from the stockpile will flow to the north, away from the Tyrone open pit and around the stockpile (Figure 6).

Site Stabilization and Revegetation

Tyrone plans to use the 9AX Stockpile as a borrow source for future reclamation projects due to its close proximity to other stockpiles. However, for purposes of permitting, closure of the proposed 9AX Stockpile will comply with the applicable requirements of Permit No. GR010RE. The reclaimed inter-bench slopes will be constructed at gradients equal to or less than 3.0:1 with slope lengths no longer than 300 feet (Figures 4 and 5). Figure 4 illustrates the conceptual designs for the slope configuration. The conceptual designs are provided for demonstrative purposes and as the basis for the financial assurance cost estimate. The exact designs will be finalized as part of the Construction Design Quality Assurance Plan (CDQAP) submitted prior to reclamation.

Like the 9A Stockpile, the stockpile will be constructed from reclamation borrow material from the Little Rock Mine with no potential to affect water quality. Revegetation will be accomplished using the methods specified in Appendix C of Permit Revision 01-1 and Permit Modification 06-3 to Permit GR010RE to meet the approved post-mining land.

Conceptual Closure Cost Estimate

This section provides a description of the capital, operation and maintenance cost estimate portions of the financial assurance. Reclamation cost estimates are included with reclamation plans and are used in determining the required amount of financial assurance. The capital cost estimate has been prepared in accordance with standard engineering practice and is supported with data from various references and is fully documented in Attachment B. The capital costs for closure are summarized as follows:

The reclamation FA cost estimate reflects a 3.0:1 inter-bench slope design. The average height of the reclaimed stockpile is approximately 100 ft. and the average slope length is 220 ft. long, therefore terrace benching is not necessary. For financial assurance purposes, the total cost to implement the Closeout Plan presented herein is estimated in current dollars to be approximately $660,000 (Attachment B, Table 1). Grading, revegetation and maintenance costs for reclamation and post-closeout care have been developed for this plan (Attachment B - Tables 2, 3, 4, 5, and 6).

The close proximity of the 9AX Stockpile to the 2A/2B and 3A/3B Stockpiles reduces the reclamation borrow haulage cost compared to the 2003 CCP. The shorter haulage distance compared to the 2003 CCP results in a financial assurance cost reduction of approximately $1,175,000 (2001 dollars). Therefore this proposal reduces the approved 2003 FA for a cost savings of more than ($1,175,000 - $660,000) $515,000. Adjustments to the existing

financial assurance will be addressed more definitively as part of the 2013 Tyrone CCP update.

Summary

As a normal course of practice, Tyrone continuously evaluates its mine plan in response to ongoing exploration activities and changes in market conditions. Likewise, Tyrone will strive to place borrow material as close as practical to mine waste stockpiles. The methods used to estimate financial assurance costs are consistent with those used in the site-wide closure planning process.

The Mining and Mineral Division (MMD) and the New Mexico Environmental Department (NMED) visited the site of the proposed stockpile on two occasions and most recently on March 26, 2014. Thank you for taking the time to review this modification request and Tyrone looks forward to discussing this proposal in the near future. If you have any questions, please contact me any time at (575) 912-5235 or at Lynn_Lande@fmi.com.

Sincerely,

Lynn A. Lande
Chief Environmental Engineer

LAL:ml
Attachments
20140425-100

c: Holland Shepherd, MMD
Kurt Vollbrecht, NMED; **Certified Mail #70102780000344915243**
Keith Elhert, NMED; **Certified Mail #7010278000344916752**

REFERENCES

DBS&A, *1997c. Closure/ Closeout Plan. Prepared for Phelps Dodge Tyrone, Inc., Tyrone, New Mexico. December 19.*

Parnham, T.L., R. Paetzold, and C.E. Souders, (Parnham) *1983 Soil Survey of Grant County, New Mexico, Central and Southern Parts. USDA-Soil Conservation Service, U.S. Gov. Print. Office Washington DC.*

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NM ENRGY MNRLS & NAT RES DPT
MINING ACT RECLAMATION BUREAU
1220 SOUTH ST FRANCIS DR
SANTA FE NM 87505

INVOICE NUMBER	INVOICE DATE	PURCHASE ORDER	COMPANY	GROSS AMOUNT	DISCOUNT	NET AMOUNT
022714 PERMIT GR010RE - PERMIT MODIFICATIO	02/27/14		FREEPORT-MCMORAN CORPORAT	1,000.00	0.00	1,000.00

Check Number	Date	Vendor Number	Name	Total Amount
0000812243	02/28/14	0000101184	NM ENRGY MNRLS & NAT RES DPT	$1,000.00

CH249 v.0.02 01-12-2012

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Phoenix AZ 85004

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TO THE ORDER OF NM ENRGY MNRLS & NAT RES DPT
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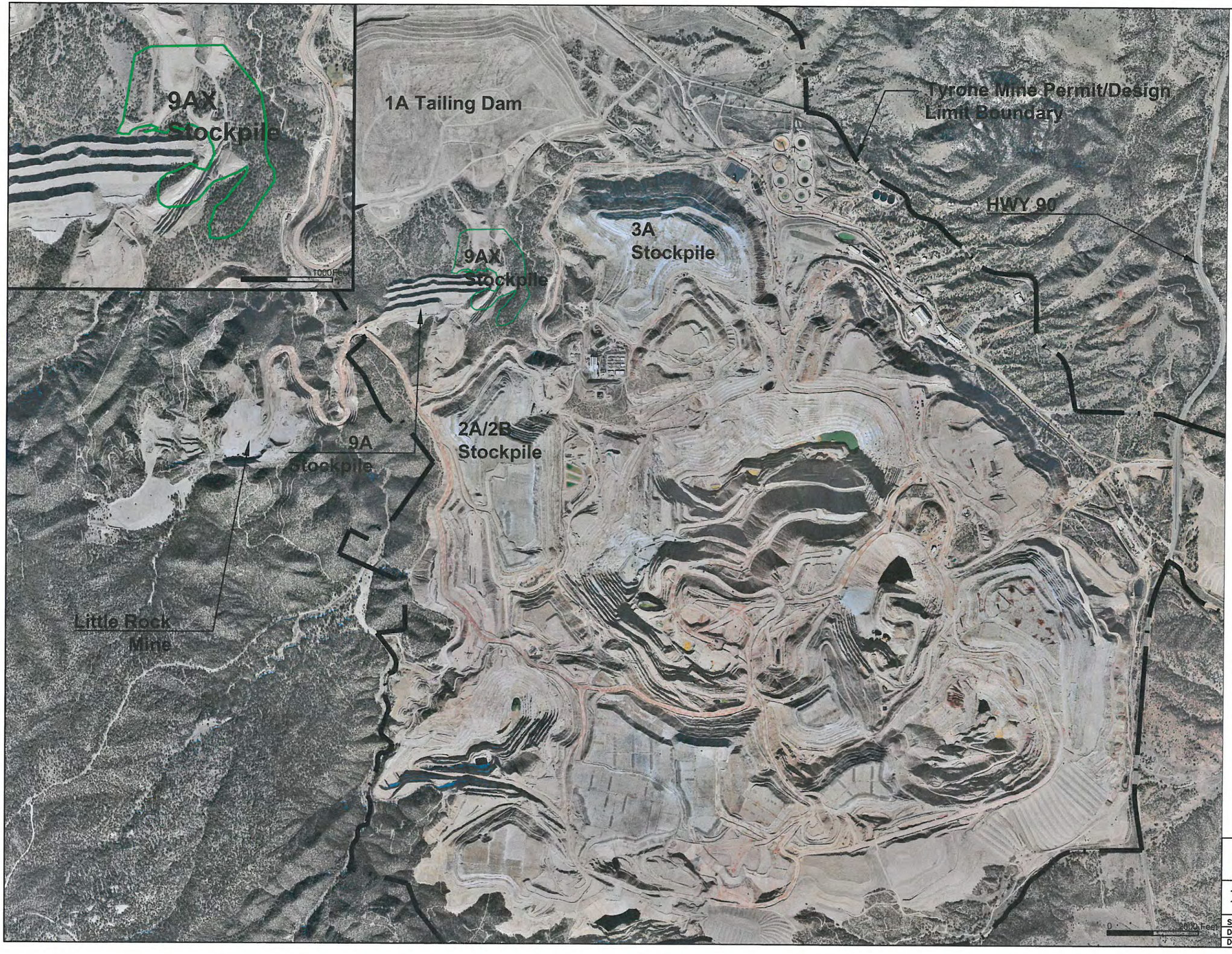
Attachment A

9AX Stockpile Figures



NORTH

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Figure 1: Tyrone Mine Overview

Scale: As Noted	Date: 4-23-2014	Notes:	
Dept. Reclamation			
Drawn By: MJL	Checked By: MJL		

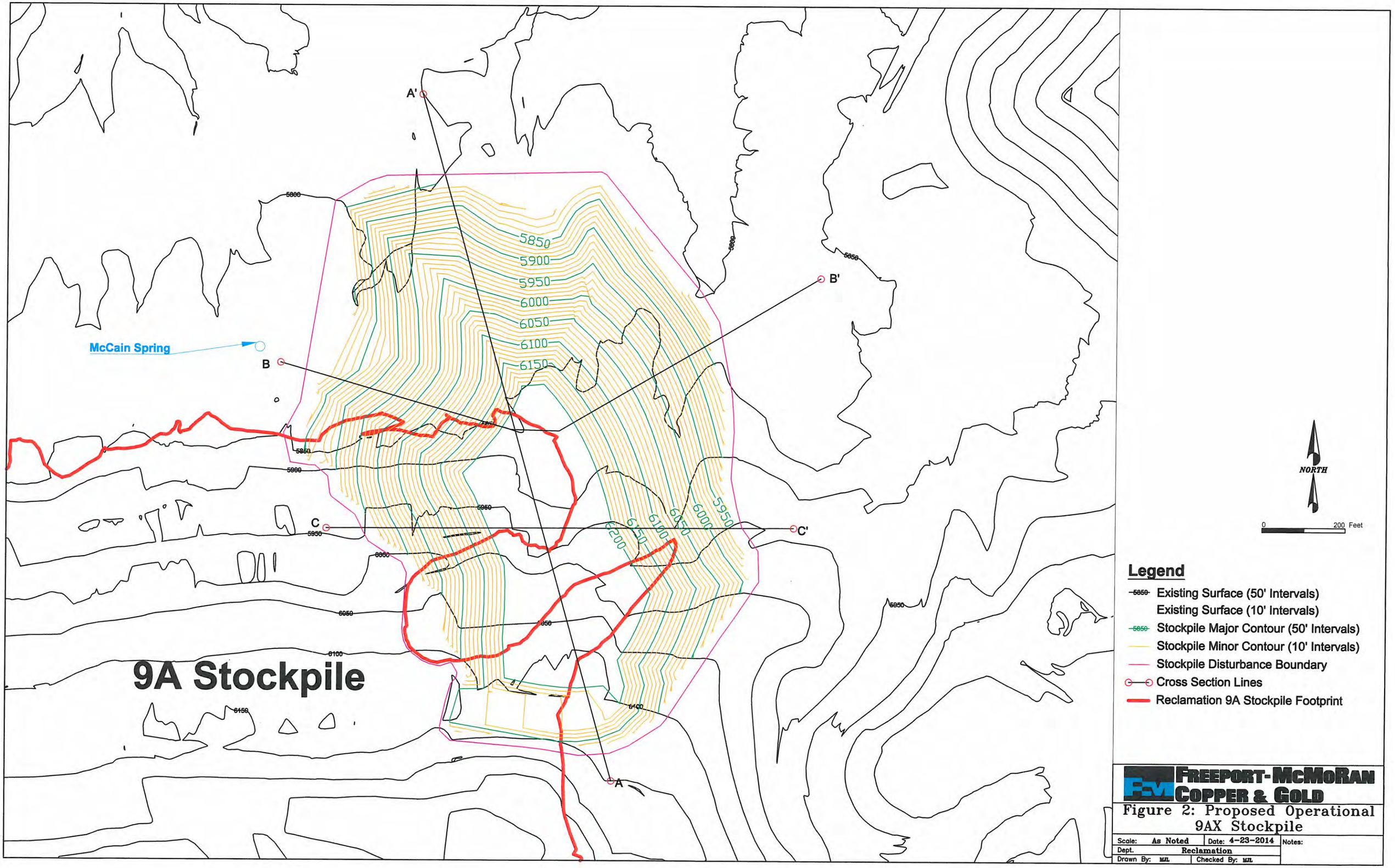

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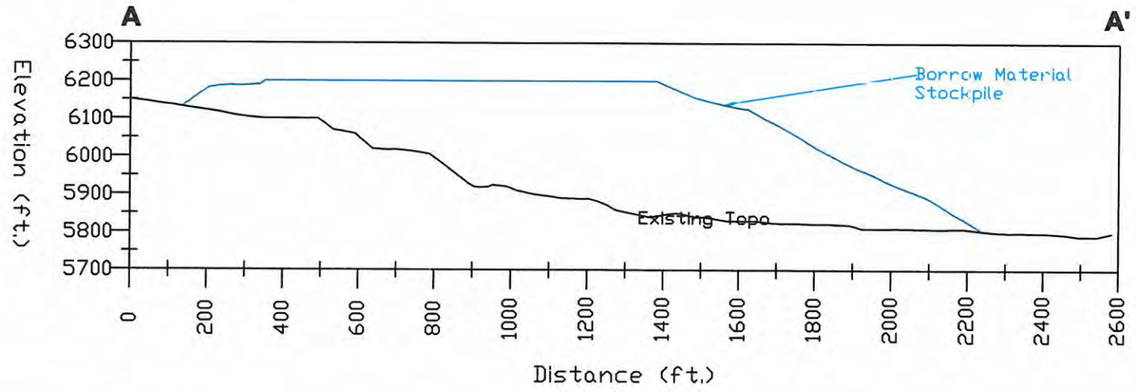
Figure 2: Proposed Operational 9AX Stockpile

Scale: As Noted	Date: 4-23-2014	Notes:	
Dept. Reclamation			
Drawn By: MJL	Checked By: MJL		



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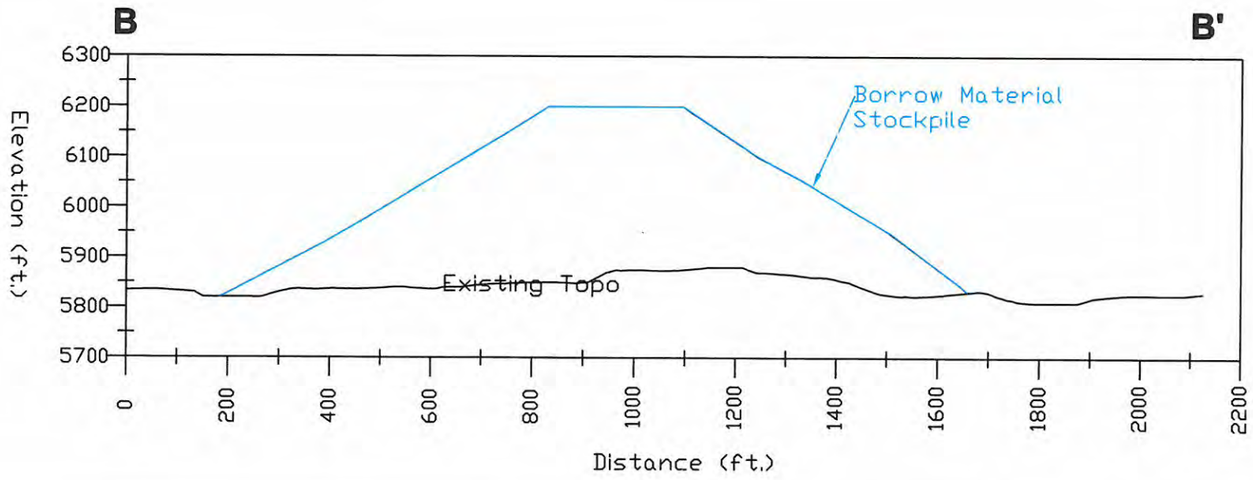

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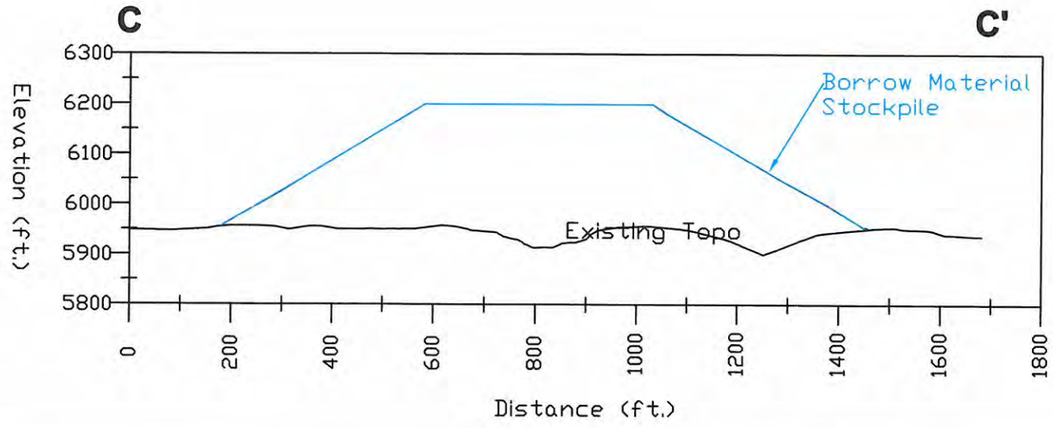

0 300 Feet

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Figure 3: 9AX Operational Stockpile Cross Sections

Scale: As Noted	Date: 4-23-2014	Notes:	
Dept. Reclamation			
Drawn By: MJL	Checked By: MJL		

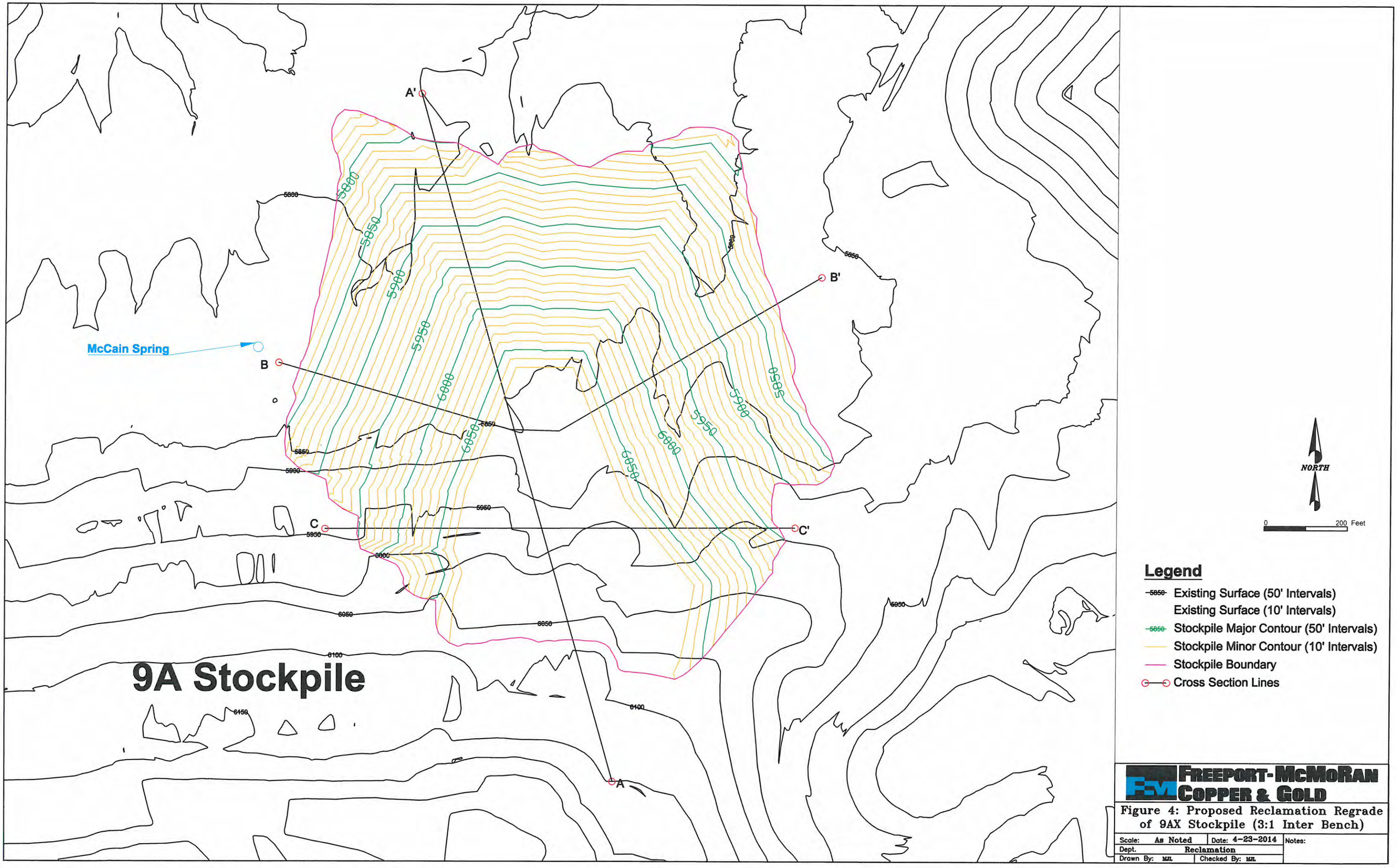

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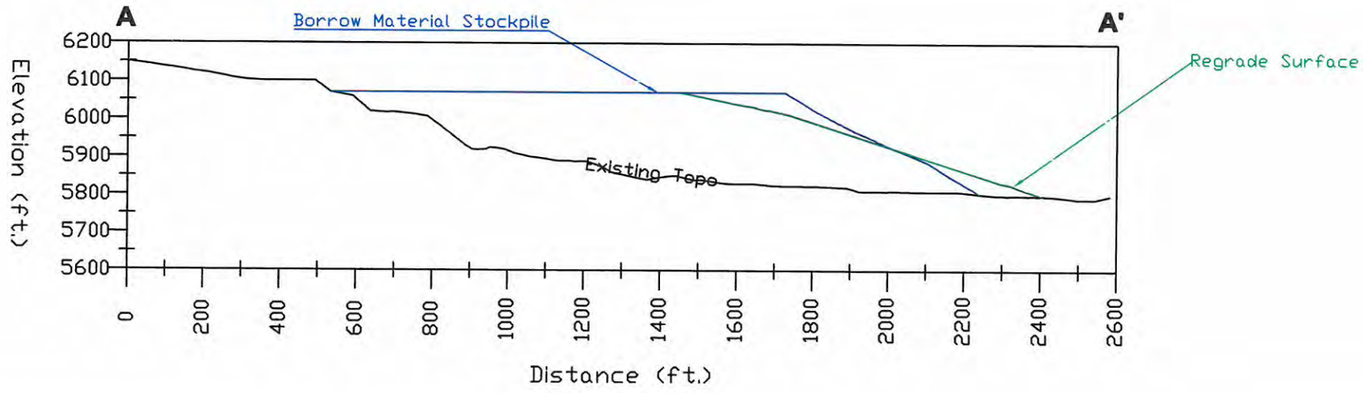
Figure 4: Proposed Reclamation Regrade of 9AX Stockpile (3:1 Inter Bench)

Scale: As Noted	Date: 4-23-2014	Notes:	
Dept. Reclamation			
Drawn By: MJL	Checked By: MJL		



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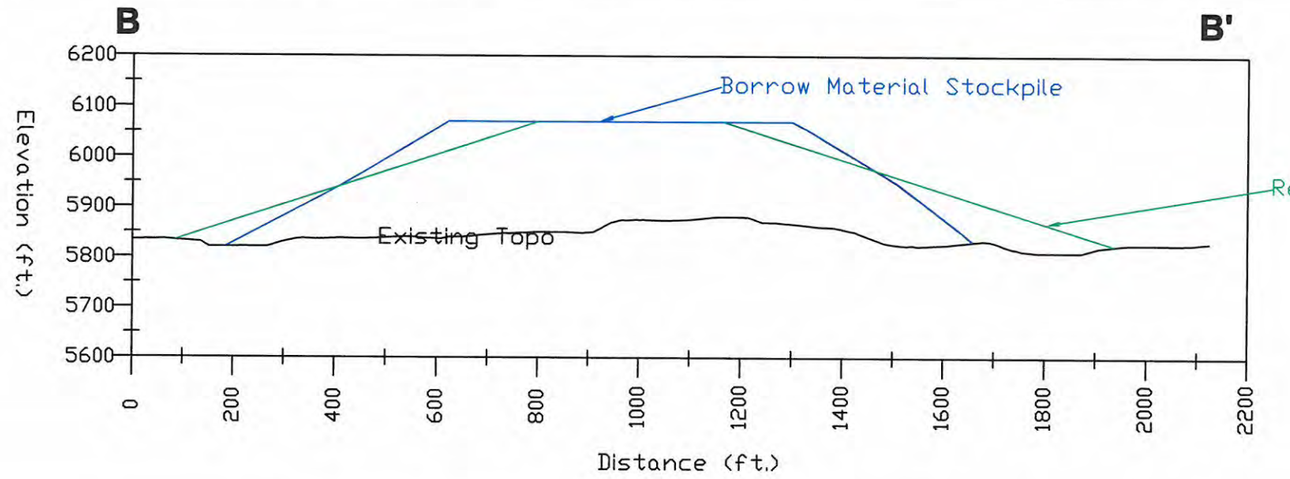

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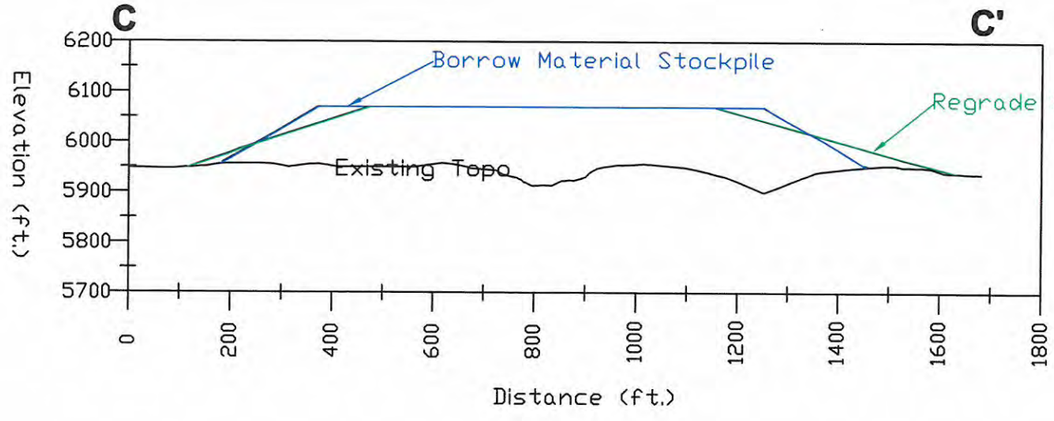

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Figure 5: 9AX Reclamation 3:1 Inter Bench Stockpile Cross Sections

Scale: As Noted	Date: 4-23-2014	Notes:	
Dept. Reclamation			
Drawn By: MJL	Checked By: MJL		

To Deadman Canyon

To Mangas Wash

McCain Spring

9A Stockpile

NORTH

0 400 Feet

Legend

- Existing Surface (50' Intervals)
- Existing Surface (10' Intervals)
- Stockpile Major Contour (50' Intervals)
- Stockpile Minor Contour (10' Intervals)
- Stockpile Disturbance Boundary
- Cross Section Lines
- Water Management Flow Direction
- 9AX Stockpile Disturbance

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Figure 6: Tyrone Mine – 9AX Borrow Material Stockpile Stormwater Flow

Scale: As Noted	Date: 4-23-2014	Notes:	
Dept. Reclamation			
Drawn By: MJL	Checked By: MJL		

Attachment B

9AX Stockpile Closeout Plan Cost Estimate

Table 1: 9AX Stockpile - Reclamation Cost Estimate Summary April 24, 2014

Reclamation Summary - 3:1 Inter Slope			9AX Stockpile
Direct Costs			Current
	Earthmoving		$ 301,802
	Vegetation	100%	$ 63,657
	Other		$ -
	Subtotal, Direct Costs		**$ 365,459**
Indirect Costs			
	Mobilization and Demobilization	1.1%	$ 4,020
	Contingencies	2.0%	$ 7,309
	Engineering Redesign Fee	4.5%	$ 16,446
	Contractor Profit and overhead	25.0%	$ 91,365
	Project Management Fee	5.0%	$ 18,273
	State Procurement Cost	2.0%	$ 7,309
	Indirect Percentage Sum =	39.6%	
	Subtotal, Indirect Costs		**$ 144,722**
Earthwork Total			**$ 510,181**
O&M Costs			**$ 149,538**
Total Costs			**$ 659,720**

Data Sources:

MMD. 1996. Closeout Plan Guidelines for Existing Mines, Mining Act Reclamation Bureau Mining and Minerals Division New Mexico Energy, Minerals and Natural Resources Department. April 30, 1996.

OSM. 2000. U.S. Department of the Interior, Office of Surface Mining Reclamation and Enforcement Handbook for Calculation of Reclamation Bond Amounts. April 5, 2000.

Notes:

1) Indirect costs are based on the guidance available from MMD (1996) and OSM (2000).
2) Direct and Indirect Costs reflect 2003 Approved Tyrone CCP Submittal for comparison purposes.

Table 2: 9AX Stockpile - Earthwork Quantities

April 24, 2014

Description	Location 1	Location 2	Area (AC)	Cover Depth (in)	Bank Volume (bcy)	Swell Factor (%)	Loose Volume (lcy)
Grade Surface	9AX - North		42	-	389,601	0%	389,601
Grade Surface	9AX - South		14	-	129,867	0%	129,867

Table 3: 9AX Stockpile - Productivity and Hours Required for Dozer Use

April 24, 2014

Task Description	Location 1	Equipment	Volume (cy)	Productivity (cy/hr)	Task Time (hours)	Material	Grade Factor	Soil Weight (lb/cy)	Production Method/ Blade	Work Hour (min/hr)	Visibility	Elevation	Direct Drive Trans.	Grade (%)	Operator	Maximum Push Distance (feet)	Normal Production (cy/hr)
Grade Surface	9AX - North	D11T	389,601	988	394	1.2	1.66	3,600	1.2	50	1	1	1	-33	1	480	776
Grade Surface	9AX - South	D11T	129,867	1,704	76	1.2	1.66	3,600	1.2	50	1	1	1	-33	1	255	1,339

Table 4: 9AX Stockpile - Summary of Earthmoving Costs

April 24, 2014

Equipment Type	Task	Location 1	Location 2	Owning and Operating Cost ($/hr)	Fuel Consumption (gal/hr)	Fuel Consumption (gal)	Labor Cost ($/hr)	Number of Units (Equipment)	Time Req'd (hrs)	Total Cost ($)
Dozers-Earthmoving										
D11T	Grade Surface	9AX	Outslopes	$ 505.72	29.70	11,717	$ 46.59	1	394.5	$ 217,869
D11T	Grade Surface	9AX	Outslopes	$ 505.72	29.70	2,263	$ 46.59	1	76.2	$ 42,087
Loaders										$ -
Water Truck and Grader*										$ -
Off-Hwy Water Tanker Truck		9AX		$ 169.54	15.35	1,513	$ 48.59	1	98.6	$ 21,512
Motor Grader		9AX		$ 159.61	9.50	937	$ 46.59	1	98.6	$ 20,334

*Assume there is a water truck and motor grader running 1 hour twice a day when the dozers are running over an 8 hour work day.

9AX $ 301,802

Data Sources:

1. EquipmentWatch Version Version 6.9.3B. Penton Media, Inc (http://www.equipmentwatch.com). Revised Date: 2nd Half 2013
2. Western Refining Quote 10/29/13
3. Labor rates based on NM Department of Labor Type H (Heavy Engineering) labor rates.

Table 5: 9AX Stockpile - Vegetation Cost

April 24, 2014

Description:

Includes scarifying, discing, rangeland drill seeding, mulching, crimping, and daily per diem

Stockpile Areas

Unit or Disturbance	(acres)	Unit Cost ($/acre)	Subtotal Cost ($)	Area Reference
9AX	56	$ 1,137	$ 63,657	Rocky Mountain Reclamation, Laramie WY (10/31/13)

Table 6: 9AX Stockpile - Operations and Maintenance Costs April 24, 2014

Erosion Control and Monitoring[1]

Indirect Cost Percentage 17.5%

	Years 1	Years 2-12	
Base:	$3,870	$3,870	$/day
Time:	12.0	2.0	day/yr
Annual:	$46,443	$7,740	$/yr

	Year	Annual Current Cost ($)
1	1	$46,443
2	2	$7,740
3	3	$7,740
4	4	$7,740
5	5	$7,740
6	6	$7,740
7	7	$7,740
8	8	$7,740
9	9	$7,740
10	10	$7,740
11	11	$7,740
12	12	$7,740
13	13	$0
14	14	$0
15	15	$0
16	16	$0
17	17	$0
18	18	$0
19	19	$0
20	20	$0
21	21	$0
22	22	$0
23	23	$0
24	24	$0
25	25	$0
26	26	$0
27	27	$0
28	28	$0
29	29	$0
30	30	$0
		$131,587

Table 6: 9AX Stockpile - Operations and Maintenance Costs (cont.)

April 24, 2014

[1] Erosion Control

Modified Crew B-13A (1 Labor Foreman, 2 laborers, 1 equip. operators (med.), 1 truck drivers (heavy), 1 crawler loader (4 cy), 1 dump trucks (8 cy, 220 HP))

RS Means Heavy Construction Cost Data (27th Annual Edition, 2013)

		Bare Costs	
	#	Hr	Daily Tot.
Labor Foreman (outside)	1	37.45	299.60
Laborers	2	35.45	567.20
Equipment Operators Imed.l	1	47.50	380.00
Truck Drivers (heavy)	1	36.60	292.80
		Daily	
Crawler Loader, 4 C.Y.	1	1530.00	1530.00
Dump Trucks, 8 C.Y., 220 H.P.	1	833.00	833.00

TOTAL 3902.60 $/day

84.40% Location Adjustment

3293.79 $/day (Adjusted)

VEGETATION MAINTENANCE COSTS								
Activity	Total Area (acres)	# yrs veg Maint.	% loss per year	Quantity	Unit	Unit Cost ($/unit)	Direct Cost ($)	With Indirects
9AX	56	12	0.02	1.12	acres	$ 1,137	$15,278	$17,951

References: Equipment - Equipment Watch Version 6.9.3B (http://www.equipmentwatch.com). Copyright 2003-2013 Penton Media, Inc. *

Labor -NM Department of Labor Type H (Heavy Engineering) labor rates. *