CHAPMAN, WOOD AND GRISWOLD, INC.
MINING ENGINEERS AND GEOLOGISTS
4015 CARLISLE BOULEVARD, N.E., SUITE C
ALBUQUERQUE, NEW MEXICO 87107

TELEPHONE: (505) 883-0220

July 18, 2017

Mr. James R. Hollen
Mining Act Reclamation Program
Mining & Minerals Division
1220 South St. Francis Drive
Santa Fe, NM 87505

Re: American Minerals Inc. Deming Manganese Site.
Planned site-remedial work prior to Release

Dear Mr. Hollen:

On May 1, 2017 I met with you and Holland Sheppard of MMD at the AMI site. Also in attendance were John Moeny of the Ground Water Bureau and two personnel from the City of Deming, Jim Massengill, Public Works Director, and Brian Reedy, Community Services Director. The purpose of the meeting was to discuss the Release of the site from further obligations by AMI, Lessee, and also to discuss the City's proposed Post Mine Land Use (PMLU) for the site. The City of Deming owns the 20-acre site.

The site has now achieved its 12th year of post-closure monitoring since the completion of reclamation in July 2005. In the initial years following reclamation the site developed a good growth of grass and foliage. The drought of the past few years has impacted the vegetative cover and invasive weeds now proliferate in some areas. Mesquite bush, which is native to the area, has begun to grow in some places, most noticeably in the northeast and northwest quadrants. The central portion of the site, which is high ground, has retained a relatively good vegetative cover.

To facilitate the Release, the City of Deming has agreed to change the PMLU designation from "**Grazing and Wildlife**" to "**Industrial**" with the possibility of using the site for the installation of a solar array (see attached letters from the City of Deming of November 2016 (undated) and May 09, 2017). Other aspects of the Release included several recommendations from MMD personnel.

1. A low spot about 150 feet east of the site entrance has a relatively thin cover and has been impacted by wind erosion. This one-half-acre area lies to the south of the monitor well and immediately north of the berm separating the 20-acre site from the old smelter site. MMD recommends filling the area with 10 to 12 inches of fill material and then capping that with a layer of coarse gravel to prevent further wind erosion.

2. In the far northwest corner of the site along the berm there are several small piles (or showings) of manganese fines. MMD recommends removing this material and burying it on site.

3. About 1 1/2 acre in the northwest corner of the site is covered with 6 to 10 inches of blow sand. A suggestion to stabilize the area with gravel was made.

4. Along the north boundary there is a channel cut through the berm which needs backfilling to prevent water from draining off the site and into the Rio Mimbres.

A. Remedial Work

A Plan has been devised to facilitate the Closure and Release of the site from further obligations. The site is covered by two permits, the MMD **Surface Reclamation Permit No. LU001RE and the Ground Water Discharge Permit No. 1234.**

Remedial work will be undertaken to rectify some of the concerns regarding the surface. Current photographs (June 8, 2017) of the site and a site map accompany this report.

A Contractor, Deming Excavating, Inc., has been retained to perform the remedial work and is currently scheduled to begin hauling fill dirt to the site by late July.

1. An estimated 600 cu yd of clean fill dirt will be imported from a Deming-area gravel pit and spread to a depth of 10 to 12 inches over the one-half acre low area immediately east of the site entrance. The area will be seeded with the site-approved seed mix and then capped with 1 ½ to 2 inches of coarse gravel which will armor the area to protect against further wind erosion.

2. The small piles of manganese fines which are exposed along the berm in the northwest corner of the site will be picked up with a front-end loader and buried in a 3-foot deep pit to be excavated 200 to 300 feet to the east where the cover thickness exceeds 3 feet. An examination of these manganese fines during a site visit on June 8, 2017 determined that the total is less than one cubic yard of material.

3. The 6- to 10-inch thickness of sand in the northwest corner of the site has blown in from off site, primarily from the City gravel pit immediately to the west and also from the sandy bed of the east-draining Rio Mimbres which lies immediately north of the northwest quadrant of the property. An additional source of blow sand could also be from the City sand pit which is 500-600 feet north of the northwest quadrant of the property.

   Attempting to stabilize this area of blow sand with a gravel cap is not appropriate as the sand will continue to blow in from off site and fill this 1 ½-acre low area.

4. The channelway cut through the north part of the berm is part of the site design. It is an outlet to the Rio Mimbres in the event of a flood and was filled with riprap to prevent down cutting from flowing water. The riprap is now mostly buried with blow sand. Backfilling of the channelway is not deemed appropriate. The bottom of the outflow channel is approximately 4 feet above the low point in the northwest quadrant of the site.

B. Groundwater Monitoring.

A letter to Mr. George Llewellyn of the Groundwater Quality Bureau dated May 24th, 2017 discussed the AMI site and the desire of American Minerals to obtain a release from further obligations, including groundwater monitoring under DP-1234 which will expire on August 8, 2018. The monitor well was last sampled on June 8, 2017 and the results continue to show that the elements of concern are well below the threshold values for discharge (Hall Environmental Analysis Lab. Report No. 1706549 dated June 27,

2017 is attached along with the table of comparative long-term sampling results of Monitor Well No. 1 dating to 2002).

The depth to groundwater was measured on April 30, 2017 and from that date until June 8, 2017 the water level in the monitor well had risen 1.50 feet.

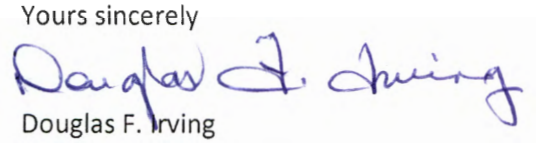
C. Site Release.

Following completion of the site remedial work, AMI will issue a site report equivalent to the Annual Report due October 31, 2017. The Company then plans, subject to consultation with the responsible Agencies, to apply for a **Release from and Termination of the Permits** covering the site, viz. LU001RE and DP-1234. That **Application** requires the Company to submit proof that the **Notice for the Application** is in compliance with **Part 9, Public Participation, of the New Mexico Mining Act Rules**, specifically **19.10.9.903 (Publication Requirements)**. To that end the Luna County Assessor's Office has supplied a list of all of the property owners within a one-half-mile radius of the site for which notice of this action must be supplied. Additionally, MMD has supplied a list of all the interested parties who have requested notification of such action.

Once the Company has received the necessary approvals for Release and Termination, the City of Deming will be notified and the Lease will be cancelled. An **Application for Abandonment** of the Monitor Well will be filed with the Environment Department and the Office of the State Engineer. To facilitate that effort both the Ground Water Bureau and the District III Office of the State Engineer (Deming) were contacted and there appears to be no record of the Monitor Well having been constructed. Information in the **Mining Closeout Plan** dated January 31, 1996 indicates that the well was installed in mid-1993. Mr. Tom Whatley of the Deming OSE indicated that without a record of the Monitor Well the authorization to abandon and destroy is complicated.

Please advise immediately should you have any concerns about the remedial work that is planned. Following completion of the work a **Public Notice** will be prepared for your review and approval.

Yours sincerely



Douglas F. Irving
CHAPMAN, WOOD AND GRISWOLD, INC.
Agent for American Minerals, Inc.

Enclosures:
Photographs
Site plan
Hall Environmental lab report (June 27, 2017)
Table of long-term Monitor Well sample results
Letters from the City of Deming discussing a change in the PMLU. (Nov. 2016 and May 09, 2017)

Copies with enclosures:
George Llewellyn, Ground Water Bureau, Silver City, NM
Paul Hall, V.P. American Minerals, Inc., Andersonville, GA
Jim Massengill, Public Works Director, City of Deming

BENNY L. JASSO, MAYOR

AARON SERA, ADMINISTRATOR

Phone (575) 546-8848 - Fax (575) 546-6442
E-MAIL: [redacted] - Website: [redacted]
P.O. BOX 706. DEMING, NEW MEXICO 88031
POPULATION 14,000

May 09, 2017

Doug Irving, Agent
American Minerals, Inc.
4015 Carlisle Blvd. NE Suite C
Albuquerque, NM 87107

RE: Deming Manganese Processing Facility
Post Mining Land Use (PMLU) Designation
Future Land Use

Mr. Irving,

Site visit discussions on May 01, 2017 with NM Mining Act representatives helped to clarify the City's involvement as it relates to NM Mining and Minerals letter dated March 02, 2017 and the associated guidelines.

The City has multiple industrial parks for development considerations. The referenced area ranks low for the bulk of economic development proposals as the location can only be accessed through residential subdivisions and is immediately adjacent to the County's detention center.

The City does consider the referenced site as an option for a solar array. It is a viable consideration given the proximity of the site to two high electricity consuming facilities, the County's detention center, and the County's entertainment facility. Together with a proposed recreational effluent storage pond in the vicinity that would require multiple pumps to operate, the old processing site has promise for a solar array to help offset electric costs.

Although there is no guarantee the solar array will materialize, it remains a future consideration.

Sincerely,

Aaron Sera
City Administrator

BENNY L. JASSO, MAYOR

AARON SERA, ADMINISTRATOR

Phone (575) 546-8848 · Fax (575) 546-6442
E-MAIL: deming@cityofdeming.org · Website: www.cityofdeming.org
P.O.BOX 706 · DEMING, NEW MEXICO 88031
POPULATION 14,000

This letter was signed in November 2015

Mining & Minerals Division
Energy, Mineral, and Natural Resources Department
ATTN: Mr. James R. Hollen
1220 South St. Francis Drive
Santa Fe, New Mexico, 87505

RE: Former Deming Manganese Processing site of American Minerals, Inc., Permit No. LU001RE

Dear Mr. Hollen:

The City of Deming owns the 20-acre site which was used by American Minerals, Inc. (AMI) for the processing of manganese ore. Operations ceased in 2003 and in 2005 the site was reclaimed under a plan approved by the Mining and Minerals Division (MMD). The Post Mine Land Use (PMLU) for the site is currently designated as "Grazing and Wildlife" by MMD.

For years, the City of Deming has regarded the site as "Industrial." It is the City's intent to use the site for "Industrial" purposes at some future time and it is our understanding that, subject to AMI satisfactorily fulfilling its obligations under the required 12-year post-reclamation monitoring period, the site will be released and AMI will have no further liabilities. That 12-year period ends in July of 2017.

The City of Deming as property owner hereby requests that MMD change the PMLU from "Grazing" to "Industrial."

Thank you for your consideration.

Sincerely,

Aaron Sera, City Manager

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **1706549**
Date Reported: **6/27/2017**

CLIENT: Chapman, Wood & Griswold Inc
Project: AMI Deming
Lab ID: 1706549-001 **Matrix:** AQUEOUS

Client Sample ID: Monitor Well #1
Collection Date: 6/8/2017 11:20:00 AM
Received Date: 6/9/2017 3:30:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS						Analyst: **JLF**	
Arsenic	0.0024	0.0010		mg/L	1	6/21/2017 7:22:25 PM	A43708
Copper	0.0024	0.0010		mg/L	1	6/20/2017 7:27:21 PM	C43652
Lead	ND	0.00050		mg/L	1	6/19/2017 7:50:10 PM	D43632
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Fluoride	0.62	0.10		mg/L	1	6/12/2017 5:18:44 PM	A43443
Chloride	6.1	0.50		mg/L	1	6/12/2017 5:18:44 PM	A43443
Sulfate	43	0.50		mg/L	1	6/12/2017 5:18:44 PM	A43443
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **JRR**	
Conductivity	490	5.0		µmhos/cm	1	6/15/2017 5:53:39 PM	R43555
SM2320B: ALKALINITY						Analyst: **JRR**	
Bicarbonate (As CaCO3)	191.2	20.00		mg/L CaCO3	1	6/15/2017 5:53:39 PM	R43555
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	6/15/2017 5:53:39 PM	R43555
Total Alkalinity (as CaCO3)	191.2	20.00		mg/L CaCO3	1	6/15/2017 5:53:39 PM	R43555
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	350	40.0	D	mg/L	1	6/15/2017 3:53:00 PM	32279
SM4500-H+B: PH						Analyst: **JRR**	
pH	8.05		H	pH units	1	6/15/2017 5:53:39 PM	R43555
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **pmf**	
Aluminum	ND	0.020		mg/L	1	6/20/2017 4:36:48 PM	A43653
Cadmium	ND	0.0020		mg/L	1	6/19/2017 4:37:31 PM	A43626
Calcium	51	1.0		mg/L	1	6/19/2017 4:37:31 PM	A43626
Chromium	ND	0.0060		mg/L	1	6/19/2017 4:37:31 PM	A43626
Cobalt	ND	0.0060		mg/L	1	6/19/2017 4:37:31 PM	A43626
Iron	ND	0.020		mg/L	1	6/19/2017 4:37:31 PM	A43626
Magnesium	11	1.0		mg/L	1	6/19/2017 4:37:31 PM	A43626
Manganese	ND	0.0020		mg/L	1	6/19/2017 4:37:31 PM	A43626
Nickel	ND	0.010		mg/L	1	6/19/2017 4:37:31 PM	A43626
Potassium	2.3	1.0		mg/L	1	6/19/2017 4:37:31 PM	A43626
Sodium	44	1.0		mg/L	1	6/19/2017 4:37:31 PM	A43626
Zinc	0.032	0.010		mg/L	1	6/19/2017 4:37:31 PM	A43626

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

SAMPLE RESULTS FOR MONITOR WELL NO. 1.

DEMING MANGANESE SITE - DP 1234

AMERICAN MINERALS INC.

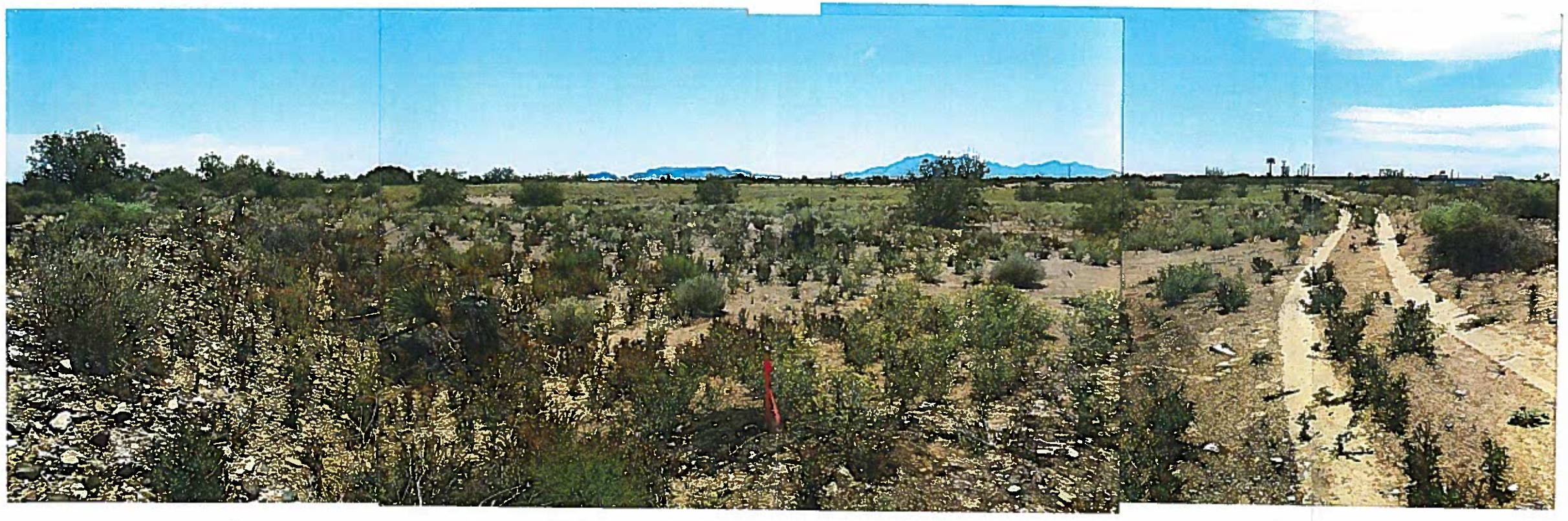
LUNA COUNTY, NEW MEXICO

	Date	Nov. 13, 2002	July 20, 2005 (1)	May 8, 2008	Oct. 30, 2008	May 26, 2009	Nov. 19, 2009	APR. 30, 2010	MAR. 10, 2011	Nov. 5
1	Sampler	Amer. Min.	Amer. Min	Metric Corp	Metric Corp.	CWG	CWG	CWG	CWG	CW
2	Laboratory	Assagai	Assagai	Pinnacle	Hall Enviro.	Hall Enviro	Hall Enviro	Hall Enviro	Hall Enviro.	Hall E
3	Depth to water (ft)	71.67	84 (1)	75.15	72.27	73.29	73.75	74.92	76.54	79.5
4	Water temperature (°C)		24.8°	19.9°	18.4°	17.8°	16.9°	16.7°	17.5°	15.6
5	pH	7.3	7.66	7.7	7.72	7.88	7.85	7.87	7.98	7.9
6	e-conductivity µmhos/cm				530	490	490	500	500	480
7	Total dissolved solids	369	258	350	330	390	352	363	400	670
8	Calcium				51	51	50	56	60	150
9	Magnesium				11	11	11	12	12	19
10	Sodium				43	40	38	41	40	41
11	Potassium				2.4	2.1	2.0	1.9	2.3	3.9
12	Sulphate	50.6	28.2	45	41	33	35	39	43	41
13	Chloride	14.1	9.84	8.7	6.3	5.1	5.2	5.6	6.4	5.8
14	Carbonate				ND	ND	ND	ND	ND	ND
15	Bicarbonate				230	220	240	210	210	200
16	Fluoride	0.50	ND	0.60	0.64	0.75	0.73	0.63	0.72	0.62
17	Aluminum				ND	0.74	ND	ND	1.7	8.0
18	Arsenic	0.0024	0.0019	< 0.0050	0.0023	0.00288	0.002	0.0028	0.0033	0.006
19	Cadmium	ND	ND	< 0.0050	ND	ND	ND	ND	ND	0.002
20	Chromium	0.004	0.0024	< 0.0050	ND	0.0062	ND	ND	ND	0.006
21	Cobalt				ND	ND	ND	ND	ND	0.016
22	Copper	0.0052	0.0030	< 0.010	ND	ND	ND	ND	ND	0.02
23	Iron	0.018	ND	< 0.10	ND	0.17	ND	ND	0.81	3.3
24	Lead	ND	ND	< 0.0050	ND	0.0069	ND	ND	0.018	0.05
25	Manganese	0.0015	0.0063	< 0.010	0.0044	0.17	0.018	ND	0.60	1.9
26	Nickel	0.0014	0.0007	< 0.0030	ND	ND	ND	ND	ND	0.016
27	Zinc	0.054	ND	< 0.020	ND	ND	ND	0.046	0.047	0.20
28										
29	Note: All values are mg/l unless otherwise noted				ND = Not determined(below detection limits)					
30	1. Production well				2. Water table at or below bottom of well; well bottom at 86.3 feet.					

	Initials	Date
Prepared By		
Approved By		

9	10	11	12	1	2	3	4	5	6	7
Nov. 5, 2011	Sept. 29, 2012	Oct. 4, 2013	Mar. 21, 2014	Oct. 10, 2014	Jan. 28, 2015	Sept. 23, 2015	Feb. 10, 2016	Sept. 27, 2016	April 30, 2017	June 8, 2017
CWG Hall Enviro.	CWG Hall Enviro.	CWG	CWG Hall Enviro.	CWG Hall Enviro.	CWG Hall Environ.	CWG Hall Enviro.	CWG	CWG Hall Enviro.	CWG	CWG Hall Enviro.
79.81	83.67	86.08 [2]	81.02	80.15	77.92	78.77	80.23	83.67	83.62	82.17
15.6°	18.3°	↓	17.2°	17.8°	16.1°	17.8°	↓	17.2°	↓	18.3°
7.92	7.98		7.48	7.29	7.20	7.43		8.1		8.05
480	490		430	460	Field/Lab 445/480	520		510		490
670	630		430	510	353	370		580		350
150	52		87	51	56	53		48		51
19	11		12	11	12	12		11		11
41	41		40	43	45	47		49		44
3.9	2.1	No	3.3	2.7	2.2	2.1	No	2.9	No	2.3
41	41	Water	38	37	43	43	Water	45	Water	43
5.8	6.4	Sample	6.4	6.2	6.8	5.8	Sample	6.8	Sample	6.1
ND	ND		ND	ND	ND	ND		ND		ND
200	200		180	190	190	159.6		200		191.2
0.64	0.78		0.73	0.60	0.64	0.60		0.63		0.52
8.0	0.45		4.2	1.0	0.055	ND		ND		ND
0.0067	0.0025		0.0031	0.00023	0.0027	0.0024		ND		0.0024
0.0024	ND		ND	ND	ND	ND		ND		ND
0.0066	ND		ND	ND	ND	ND		ND		ND
0.016	ND		ND	ND	ND	ND		ND		ND
0.021	ND		0.0055	0.0023	ND	ND		0.0074		0.0024
5.3	0.26		2.3	0.57	0.035	ND		0.033		ND
0.052	ND		0.0072	0.0021	ND	ND		ND		ND
1.9	0.027		0.21	0.058	0.0051	ND		0.0057		ND
0.016	ND		ND	ND	ND	ND		ND		ND
0.20	ND		0.083	ND	ND	ND		0.01		0.032

View across the AMI site from the southwest corner where the former processing plant was situated. The view is north (left) to east (right) – June 8, 2017. The barren area in the right-center of the photo is to be back filled with 600 cu yd of fill dirt and capped with 2 in. of coarse gravel.

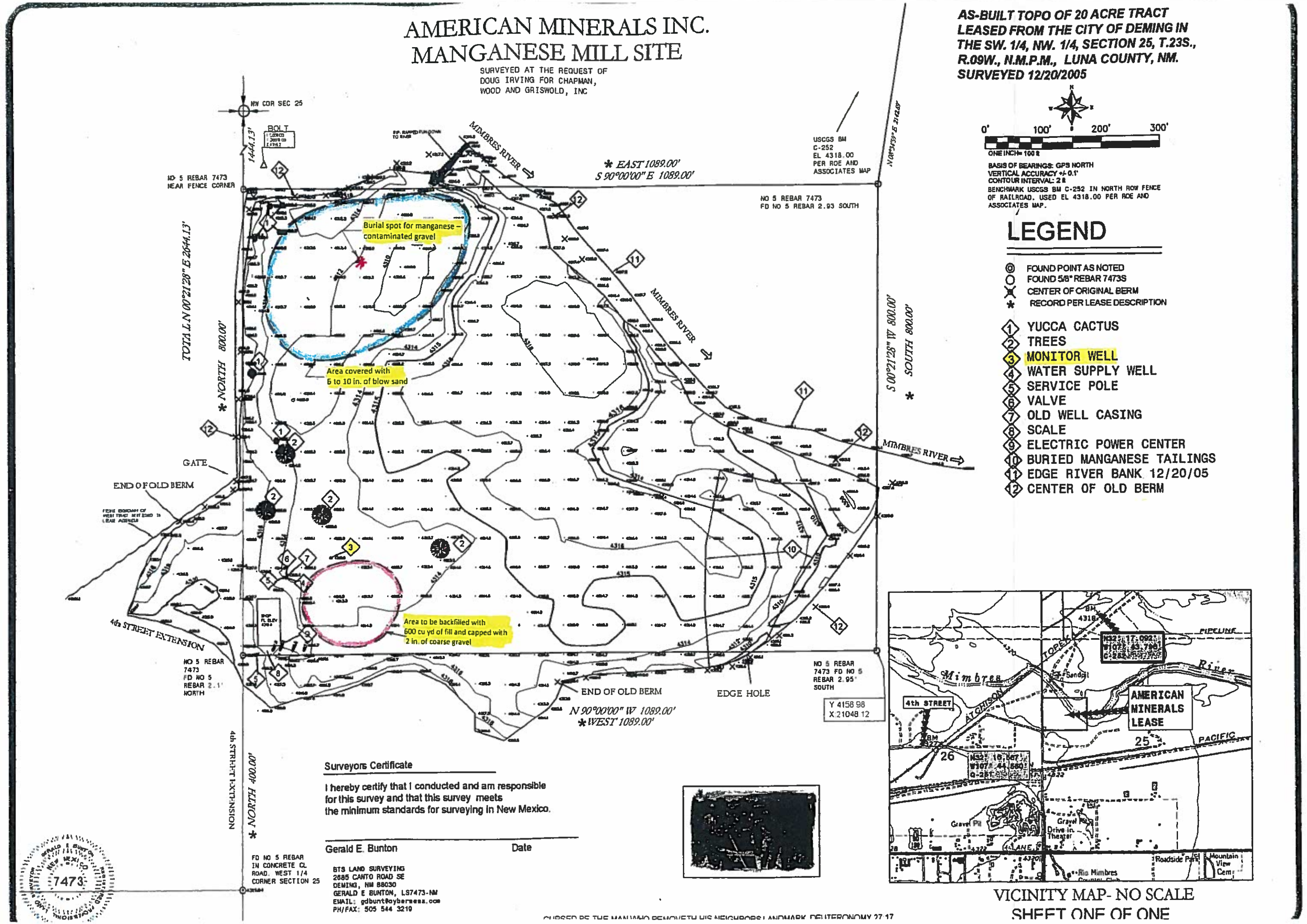


View across the AMI site from the northwest corner. The view is east (left) to south (right) – June 8, 2017. The area from the orange ribbon southeastward is filled with 6 to 12 in. of blow sand. Note the manganese – contaminated dirt at the orange ribbon. That and several similar occurrences will be removed and buried onsite.

AMERICAN MINERALS INC.
MANGANESE MILL SITE

SURVEYED AT THE REQUEST OF
DOUG IRVING FOR CHAPMAN,
WOOD AND GRISWOLD, INC

AS-BUILT TOPO OF 20 ACRE TRACT LEASED FROM THE CITY OF DEMING IN THE SW. 1/4, NW. 1/4, SECTION 25, T.23S., R.09W., N.M.P.M., LUNA COUNTY, NM. SURVEYED 12/20/2005



0' 100' 200' 300'
ONE INCH= 100 ft

BASIS OF BEARINGS: GPS NORTH
VERTICAL ACCURACY +/- 0.1'
CONTOUR INTERVAL: 2 ft
BENCHMARK USCGS BM C-252 IN NORTH ROW FENCE OF RAILROAD. USED EL 4318.00 PER ROE AND ASSOCIATES MAP.

LEGEND

- FOUND POINT AS NOTED
- FOUND 5/8" REBAR 7473S
- CENTER OF ORIGINAL BERM
- * RECORD PER LEASE DESCRIPTION

1. YUCCA CACTUS
2. TREES
3. MONITOR WELL
4. WATER SUPPLY WELL
5. SERVICE POLE
6. VALVE
7. OLD WELL CASING
8. SCALE
9. ELECTRIC POWER CENTER
10. BURIED MANGANESE TAILINGS
11. EDGE RIVER BANK 12/20/05
12. CENTER OF OLD BERM

Surveyors Certificate

I hereby certify that I conducted and am responsible for this survey and that this survey meets the minimum standards for surveying in New Mexico.

Gerald E. Bunton — Date

BTS LAND SURVEYING
2685 CANTO ROAD SE
DEMING, NM 88030
GERALD E BUNTON, LS7473-NM
EMAIL: gdbunt@zybersesa.com
PH/FAX: 505 544 3219

7473

VICINITY MAP- NO SCALE

SHEET ONE OF ONE

CURSED BE THE MAN WHO REMOVETH HIS NEIGHBORS LANDMARK. DEUTERONOMY 27.17