Memorandum

To	Joe Vinson, MMD; Joe Marcoline, Ph.D., NMED and Mark Purcell, EPA
From	Cynthia Gulde, Ph.D., Chevron Energy Technology Company (CETC)
Date	January 20, 2011
Re	Questa Mine: Summary of Results from Cover Demonstration Project Pre-Construction Borrow Area Characterization

This memorandum (the memo) summarizes the results of a borrow area characterization for the Cover Demonstration Project (the project) at Chevron's Questa Mine tailing facility (the tailing facility). As described in the November 2009 report "Demonstration Solar Facility and Alternative Cover Depth Project for Chevron Questa Mine" (termed "the Plan" in DP-933 Amendment Approval), tailing borrow materials were investigated in 2000 to document the physical and geochemical properties of the potential borrow material from five areas on or near the tailing facility (Figure 1). The results of these investigations are documented in the following reports:

1) Borrow Material Investigation - Tailings Facility, Questa New Mexico (Robertson Geoconsultants, 2000),
2) Technical Memorandum: Addendum to the RGC Report 052010/4 (Tailings Borrow Materials Investigation) - Results of Physical Testing of Alluvial Cover Material (Robertson Geoconsultants, 2001);
3) Addendum #2- Borrow Materials Investigation - Tailings Facility Soils and Vegetation Characterization (URS, 2001) and
4) Borrow Materials Investigation Summary Sheet, Tailings Facility, Questa New Mexico, May 31, 2007.

The borrow materials investigation was conducted as part of the development of the Closure / Closeout Plans under DP 933 and TA001RE, respectively. As indicated in the Closure Work Plan (2000) the purpose for the Borrow Area Investigation was to determine whether the soils planned for use as cover material would be stable, provide the desired infiltration control characteristics and be able to support a self sustaining ecosystem upon closure of the tailing facility. As required under Condition 7-26 of TA001RE Permit Revision 96-1, the following parameters were measured: pH, electrical conductivity, sodium adsorption ratio, rock fragment content, texture, micro nutrient content, available water holding capacity, macro nutrient content and plant available iron, zinc, manganese, calcium, magnesium, copper and molybdenum. A summary of physical and geochemical results from the previous investigations is included in Table 1 (attached) of this memorandum (RGC, 2000).

In 2000, six test pits (TP-1 to TP-6) were excavated to a depth of approximately 12 feet from the areas identified as _TP-1 to TP-5 on Figure 1. Composite samples were collected from different depths within

each test pit based on noticeably visible changes in material type, texture and/or coloring rather than pre-defined depth intervals. In general, a single 5 gallon container was used to collect field sorted samples of finer texture (particles less than 3 in). In addition, up to three 5 gallon plastic containers were used to collect representative samples that contained gravel and cobble sized material. Collected samples were analyzed for the physical and geotechnical parameters described above.

The following excerpts summarize the June 2000 Borrow Area Investigation. For a complete description of the results please refer to the reports referenced above.

Physical Characterization:
..... Sand sizes range between 6% *and 40% and up to a range of approximately 30% to 60%. The gravel sizes, on average, make up approximately* 55% *to 90% of the alluvial materials sampled. The cobbles would likely make-up* 5% *to 10% of the alluvial material. These sizes, as well the majority of the gravel sizes, do not contribute a significant amount to the ability of the alluvial material to retain moisture. Rather, these larger sizes serve to alter the porosity of the material. In general, material less than approximately* 5 *mm will provide the significant majority of the materials ability to retain and store moisture. Herasymuik* (1995), *found that material with at least 40% fines than approximately* 5 *mm possessed "soil like" behavior, with respect to moisture storage and transfer. In other words a material with these physical attributes would be dominated by matrix flow, as opposed to macroporeflow. It* is *noted that the "coarsest" alluvial material sampled had approximately 40% finer than approximately* 5 *mm, while the remaining samples ranged up to nearly 75% finer than* 5 *mm.*

... The texture of the top soil material is *relatively consistent from one test pit location to the next, as shown* in *Figure* 7. *The material is silty clay with 80% to 90% passing the No. 200 sieve.*

Geochemical and Nutrient Characterization:
Soil analysis parameters for the borrow materials study were determined after consultation with MMD. The following parameters were analyzed for all soil samples: pH, Conductivity, Moisture ("/0), Calcium, Magnesium, Sodium, Sodium Absorption Ratio (SAR), Organic matter, Nitrate, Phosphorus, Potassium, Texture, and percent coarse fragments. On 25% *of the soil samples Aluminum, Copper, Iron, Manganese and Zinc were analyzed. For tailings samples, all of the above analyses were performed in addition to Molybdenum.* 23 *soil samples were analyzed and 3 tailings samples were analyzed.*

Briefly, pH ranged from 7.6 *to* 8.2, *conductivity ranged from 0.30 to* 2.96 *mmhos/cm both within acceptable ranges (see MMD Closeout Plan guidelines). Organic matter was generally low, as expected for the area with nitrate ranging from* <1 *ug/g to 10.2 ug/g. Phosphorus ranged from* 2.3 *to 10.9 ug/g and potassium ranged from* 45 *ug/g to 286 ug/g. The tailings samples all fell within the ranges of the other soil samples. The results indicate both the soils and tailings are suitable as a plant growth medium.*

2010 Borrow Material Investigation

In 2010 following discussions with NMED and MMD, Chevron conducted a Borrow Area Characterization as part of the Cover Demonstration Pre-construction sampling to confirm that the borrow material used for the cover demonstration project was consistent with previous borrow material characterization. Two separate borrow material sampling events were conducted in spring 2010 (April and May) and were observed by Joe Vinson (MMD). During the April event (conducted by URS on April 28, 2010) four composite samples (BA1 through BA4) were collected from the exposed, vertical portion of the eastern side of the highwall of the identified borrow material source and two composite soil samples (BA5 and BA6) were collected from the soil surface of the borrow area. For samples BA1 through BA4, the east side of the borrow area highwall was sub-divided in four sections, which comprised the 4 composite

samples (Figure 2). At each location soil (i.e., borrow material) sub-samples were collected in clean 1-gallon buckets, which were transferred into clean (new) 5-gallon plastic buckets. Soil sub-samples were collected directly into the 1-gallon bucket by scraping soil material from the highwall using a clean stainless steel trowel. The highwall was estimated to be between 20 and 30 feet in height. The exposed, vertical portion of the highwall was estimated to account for approximately 20 to 60 percent of the total height of the highwall (photograph 1).

Samples BA5 and BA6 (Figure 2) were collected from the surface of the borrow area, from soil surface to 6 inches below the surface, at 10 sub-sample locations spaced on 2-foot centers. Samples were placed into a clean stainless steel bowl. The composite samples were mixed using gloved (nitrile) hands or a clean stainless steel trowel.

Soil samples were analyzed at Energy Laboratories for the same constituents as previously defined in the 2000 Borrow Investigation Workplan, with the exception of available water holding capacity and rock fragment content. The constituents analyzed were: pH, electrical conductivity, sodium adsorption ratio, grain size, texture, micro nutrient content, macro nutrient content and plant available iron, zinc, manganese, calcium, magnesium, copper and molybdenum (Table 2). In addition, total molybdenum was analyzed at Test America. All samples were shipped under chain of custody. Results of the April sampling event are presented in Table 3 (attached).

Table 2. Chemical Analysis

Analytical Parameter	Analytical Method	Sample Matrix
pH	ASA Method 10-3.2	Soil
Calcium, Magnesium, Sodium	ASA Method 10-3.4	Soil
SAR	ASA Method 10-3.4	Soil
Nitrate as N	ASA Method 33-8	Soil
Phophorus	ASA Method 24-5	Soil
Potassium	ASA Method 13.3.5	Soil
Copper, Iron, Manganese, Zinc, Aluminum	ASA Method 19-3.3	Soil
Molybdenum	ASA Method 74.2	Soil
Conductivity	ASA 10-3	Soil
Moisture	D2974	Soil
Particle size, sand (%), Silt (%), Clay(%), Texture, Coarse Fragments (%)	ASA Method 15-5	Soil

ASA = American Society of Agronomy

In a letter dated May 6, 2010, from MMD to Chevron, MMD documented its concern over the adequacy of the samples collected in April to represent the borrow material and suggested a sampling method that would allow the full vertical profile of the borrow area to be sampled. To address MMD's concerns, a second sampling event was scheduled.

On May 20, 2010 Buchanan Consultants resampled the borrow material using three test pits excavated to a depth of approximately 18 feet (Figure 3). Composite samples were collected from the pits based on two intervals visually defined by noticeable changes in material type, texture and/or coloring (Photographs 2 -4). For each depth interval three 5-gallon buckets of mixed and composited material were collected using a shovel. The samples were shipped to Energy Laboratories and analyzed for grain size, moisture, pH, conductivity, sodium adsorption ratio, rock fragment content, texture, macro nutrient content, and micro nutrient content (Table 2). Plant available iron, zinc, manganese, calcium, magnesium, copper and molybdenum were not analyzed during the May sampling event. Results of the May sampling event are presented in Table 4 (attached).

Results of the two 2010 borrow material investigations confirmed that the material used in the Cover Demonstration Project was similar to borrow material sampled during the 2000 investigation. In all cases the average concentration or percentage of the analyte measured was within the range observed during the 2000 investigation with two exceptions (moisture and sodium). For both percent moisture and sodium concentration the average value measured in 2010 was greater than the maximum value observed in 2000. However, the lower range of the 2010 values overlapped the observed concentrations from 2000. .

The following briefly summarizes the 2010 results. During excavation of the test pits there was a defined difference in the color and texture of the top soil and underlying alluvial soils. A dark brownish red fine material extended from the surface down to a depth of 7 to 9 feet. Depths greater than 8 feet had more coarse frags, and cobble sized rocks. . The upper 0-8 feet had a lower percent sand than was observed at depths greater than 8 ft (19% vs. 74 %, respectively). The top 0-8 feet was high in clay content 46-50% when compared to depths greater than 8 feet (average = 14%). The course fragments of the alluvial materials sampled (8 to 18 feet) make up 24%. The cobbles would likely make-up 5% to 10% of the alluvial material based on visual observation in the field. The texture of the top soil material (0 to 8') was consistent from one test pit location to the next and classified as clay. The bottom alluvial material (8 to 18") was classified as a sandy loam. As expected, in the samples collected from April 2010 where the material was mixed, the soil texture varied from a sandy clay loam, to a sandy loam to loamy sand. This is likely most representative of the texture of material once it is placed on the tailing as cover material.

Soil pH ranged from 7.6 to 8.2 (slightly alkaline) and conductivity ranged from 0.51 to 6.78 mmhos/cm (low to moderate). Both were within acceptable ranges for the area. Phosphorus ranged from 4.4 to 12.0 mg/kg which could be considered low and potassium ranged from 68 mg/kg to 186 mg/kg which is typically considered high. Plant available nutrients such as copper, iron, manganese and zinc were all within a range considered moderate (Herrera, 2001). Molybdenum concentrations in the borrow material ranged from 1 mg/kg to <1 mg/kg for plant available molybdenum and from 1 mg/kg to 3 mg/kg for total molybdenum.

Overall, these soil characteristics indicate that the borrow material can serve as a sustainable growth medium for the grass, forb and shrub species selected for the project area and should effectively limit erosion. Based on the interim cover and vegetation that is currently in place at the tailing facility, a self sustaining ecosystem can be maintained at the tailing facility across time.

Next Steps

The construction phase of the cover demonstration project is nearing completion. The cover has been installed, graded and Quality Control (QC) of the depths has been completed. Cover samples were

collected during the lysimeter cover placement and from the cover QC test pits. These samples will be analyzed for grain size distribution and molybdenum and will serve as a baseline to the 5 year monitoring program.

Seed bed preparation and seeding is scheduled to take place in the Spring of 2011. As a result of the solar project infrastructure minor changes have been made to the seeding plan from the original plan described in the Construction Quality Assurance Plan. These changes include removing Squirreltail bottlebrush (*Sitanion hystrix*) from the seed mix (Table 5) to prevent the possible spread of seeds to off-site fields (local farmers expressed a concern that squirreltail may harm soft tissue in cattle when swallowed) and not applying hay following seed placement. Similar to what is described in the CQA Plan, the cover will be ripped to a depth of 6-12 inches to reduce compaction caused by the heavy equipment traffic and to prepare the seedbed. The seed mix will then be broadcast using a cyclone or drop seeder with two separate passes that are perpendicular to each other to provide uniform seed dispersal. Following seed placement, the seeded area will be lightly harrowed to cover the seed. Due to the air drying vents on the solar panels and the potential for clogging, hay will not be applied. The seed mix will include the following species:

Table 5. Seed Mixture for Questa Tailing Solar/Cover Project

Common Name	Scientific Name	Variety	Seeding Rate (lbs PLS/Acre)
Grasses			
Western wheatgrass	*Pascopyrum smithii*	Arriba	3.0
Slender wheatgrass	*Elymus trachycaulus*	San Luis	3.0
Bluebunch wheatgrass	*Pseudoroegneria spicata*	Goldar	2.0
Indian ricegrass	*Achnatherum hymenoides*	Poloma	3.0
Sheep fescue	*Festuca ovina*	Covar	2.0
Sand dropseed	*Sporobolus cryptandrus*		1.0
Forbs			
Louisiana sage	*Artemisia ludoviciana*	Summit	1.5
Shrubs			
Winterfat	*Ceratoides lanata*		3.0
Low rabbitbrush	*Chrysothamnus viscidiflorus ssp. lanceolatus*		1.5
TOTAL			22.0

As described in the DP-933 amendment and the Solar and Cover Project Plan submitted in November 2009, cover maintenance inspections and cover soils monitoring for molybdenum is currently scheduled to begin in the summer of 2011 (approximately 3 months after seeding is complete). As described in the Solar and Cover Project Plan, vegetation monitoring will not begin until 2012.

Tables 1, 3 and 4.

Table 1
QUESTA TAILING FACILITY BORROW AREA SOIL ANALYTICAL RESULTS
May 2000

Analyte [1]	Reporting Units	Sample Identification						
		TP-1 (0-24")	TP-1 (24" - 32")	TP-1 (32" - 8')	TP-2 (0-24")	TP-2 (2' - 6')	TP-2 (6' - 7.5')	TP-2 (7.5' - 10')
Aluminum	mg/kg	-	-	-	-	-	-	-
Calcium, sat. paste	meq/L	2.91	2.09	1.96	3.22	2.09	1.88	1.3
Conductivity, sat. paste	mmhos/cm	0.51	0.71	0.78	0.36	0.31	0.3	0.43
Magnesium, sat. paste	meq/L	1.48	1.21	1.17	0.91	1.13	0.96	0.74
Moisture	%	10	9.8	6	7.7	11.1	11.1	3.7
Nitrate as N, KCL Extract	mg/kg	3.3	2.8	1.3	4.8	2.6	3.9	1.8
pH, sat. paste	s.u.	8	8.1	8.2	7.7	8	8.1	8.1
Phosphorus, Olsen	mg/kg	4.1	8.9	3.1	4.1	9	9.7	5.3
Potassium	mg/kg	147	45	102	142	118	156	82
Sodium Adsorption Ratio (SAR)	unitless	1.61	4.08	5.23	0.25	0.37	0.51	2.92
Sodium, sat. paste	meq/L	2.39	5.25	6.54	0.36	0.47	0.6	2.95
Sand	%	24	55	49	22	18	22	70
Silt	%	41	19	29	48	37	38	12
Clay	%	35	26	22	30	45	40	18
Coarse Frags	%	11	26	25	9	7	6	60
Texture	N/A	CL	SCL	L	CL	C	C	SL

Notes:
Data for this table came from Tables 13 and 14 of the June 2000 report "Borrow Material Investigation - Tailings Facility, Questa New Mexico (Robertson Geoconsultants)".

- = sample was not analyzed for this paramete mmhos/com = milli mhos per centimeter
% = percent
KCL = potassium chloride
LS = loamy sand
meq/L = milli equivalent per liter
mg/kg = milligram per kilogram
mm = millimeter
N/A = not applicable
s.u. = standard unit
SCL = sandy clay loam
SL = sandy loam
C=clay

Table 1
QUESTA TAILING FACILITY BORROW AREA SOIL ANALYTICAL RESULTS
May 2000

Analyte [1]	Reporting Units	Sample Identification								
		TP-3 (0-12")	TP-3 (1'-5')	TP3 (5' - 10')	TP-4 (0-24")	TP-4 (2' - 6')	TP-4 (6'-10')	TP-5 (0-12")	TP-5 (1-3')	TP-5 (3'+)
Aluminum	mg/kg	-	-	-	-	-	-	-	-	-
Calcium, sat. paste	meq/L	3.03	8.52	2.73	2.14	6.62	10.3	5.1	6.4	16.4
Conductivity, sat. paste	mmhos/cm	0.41	1.68	0.53	0.42	1.89	2.76	0.47	1.12	2.96
Magnesium, sat. paste	meq/L	1.15	6.43	1.44	0.82	3.86	6.46	1.06	4.34	19.9
Moisture	%	10.1	5.7	3	9.2	7.7	5.6	6.3	5.9	3.6
Nitrate as N, KCL Extract	mg/kg	2.1	10.2	2.1	<1	<1	<1	<1	<1	1.9
pH, sat. paste	s.u.	7.7	7.7	7.9	8.1	7.8	7.8	7.6	7.8	7.9
Phosphorus, Olsen	mg/kg	4.8	5.6	3.8	3.3	4.3	6.2	6.8	3.8	4.5
Potassium	mg/kg	166	86	92	133	166	286	157	136	126
Sodium Adsorption Ratio (SAR)	unitless	0.9	1.11	1.42	1.57	4.43	4.81	0.11	1	1.98
Sodium, sat. paste	meq/L	1.3	3.04	2.04	1.91	10.1	13.9	0.19	2.32	8.43
Sand	%	42	46	80	18	30	33	42	46	62
Silt	%	43	19	7	46	45	42	33	27	18
Clay	%	33	35	13	36	25	25	25	27	20
Coarse Frags	%	15	45	62	10	14	30	24	32	45
Texture	N/A	CL	SC	SL	SiCL	L	L	L	SCL	SCL

Notes:
Data for this table came from Tables 13 and 14 of the June 2000 report "Borrow Material Investigation - Tailings Facility, Questa New Mexico (Robertson Geoconsultants)".

- = sample was not analyzed for this parameter
% = percent
KCL = potassium chloride
LS = loamy sand
meq/L = milli equivalent per liter
mg/kg = milligram per kilogram
mm = millimeter
N/A = not applicable
s.u. = standard unit
SCL = sandy clay loam
SL = sandy loam
C=clay

Table 1
QUESTA TAILING FACILITY BORROW AREA SOIL ANALYTICAL RESULTS
May 2000

Analyte [1]	Reporting Units	Sample Identification	
		TP-6 (0-2')	TP-6 (2-10')
Aluminum	mg/kg	-	-
Calcium, sat. paste	meq/L	2.48	1.31
Conductivity, sat. paste	mmhos/cm	0.41	0.7
Magnesium, sat. paste	meq/L	0.92	0.61
Moisture	%	11.9	9.7
Nitrate as N, KCL Extract	mg/kg	<1	1.1
pH, sat. paste	s.u.	7.8	8.2
Phosphorus, Olsen	mg/kg	2.3	10.9
Potassium	mg/kg	206	133
Sodium Adsorption Ratio (SAR)	unitless	1.79	6.93
Sodium, sat. paste	meq/L	2.33	6.79
Sand	%	12	28
Silt	%	44	40
Clay	%	44	32
Coarse Frags	%	16	24
Texture	N/A	SiL	SiC

Notes:
Data for this table came from Tables 13 and 14 of the June 2000 report "Borrow Material Investigation - Tailings Facility, Questa New Mexico (Robertson Geoconsultants)".

- = sample was not analyzed for this parameter
% = percent
KCL = potassium chloride
LS = loamy sand
meq/L = milli equivalent per liter
mg/kg = milligram per kilogram
mm = millimeter
N/A = not applicable
s.u. = standard unit
SCL = sandy clay loam
SL = sandy loam
C=clay

Table 3
QUESTA TAILING FACILITY BORROW AREA SOIL ANALYTICAL RESULTS
April 2010

Analyte [1]	Reporting Units	Reporting Limit	Sample Identification					
			BA1 -T01N-SOL	BA2 -T01N-SOL	BA3 -T01N-SOL	BA4 -T01N-SOL	BA5 -T01N-SOL	BA6 -T01N-SOL
Sample Collection Date			4/27/2010	4/27/2010	4/27/2010	4/27/2010	4/27/2010	4/27/2010
Aluminum	mg/kg	0.1	0.4	0.3	0.4	0.5	-	-
Calcium, sat. paste	meq/L	0.05	1.66	28.3	21	9.48	-	-
Conductivity, sat. paste	mmhos/cm	0.01	0.85	3.65	2.56	1.43	-	-
Copper	mg/kg	0.1	0.3	0.1	0.2	0.1	-	-
Iron	mg/kg	1	3	4	3	3	-	-
Magnesium, sat. paste	meq/L	0.08	1.14	9	7.74	3.13	-	-
Manganese	mg/kg	0.1	0.9	0.7	0.9	0.5	-	-
Moisture	%	1						
Molybdenum	mg/kg	1	1	1	1	1	-	-
Molybdenum [2]	mg/kg	0.034-0.045	1.4	2	1.1	1	3.2	1.9
Nitrate as N, KCL Extract	mg/kg	1	1	2	1	2	-	-
pH, sat. paste	s.u.	0.1	8.2	7.8	7.8	7.8	-	-
Phosphorus, Olsen	mg/kg	1	9	7	7	6	-	-
Potassium	mg/kg	10	110	130	110	100	-	-
Sodium Adsorption Ratio (SAR)	unitless	0.01	5.65	3.95	2.09	2.27	-	-
Sodium, sat. paste	meq/L	0.04	6.68	17.1	7.9	5.71	-	-
Zinc	mg/kg	0.1	-	-	-	-	-	-
Sand	%	1	65	72	84	83	-	-
Silt	%	1	15	12	6	9	-	-
Clay	%	1	20	16	10	8	-	-
Coarse Frags	%	1	-	-	-	-	-	-
Texture	N/A	N/A	SCL	SL	LS	LS	N/A	N/A

Notes:
Laboratory analysis for the above parameters was performed on the sand and fines fraction (less than 2 mm) of the original sample.

- = sample was not analyzed for this parameter
% = percent
KCL = potassium chloride
LS = loamy sand
meq/L = milli equivalent per liter
mg/kg = milligram per kilogram
mm = millimeter
mmhos/com = milli mhos per centimeter
N/A = not applicable
s.u. = standard unit
SCL = sandy clay loam
SL = sandy loam
C=clay

[1] Analyses performed by Energy Laboratories, Helena, Montana.
[2] Analysis performed by TestAmerica, Burlington, Vermont.

Table 4
QUESTA TAILING FACILITY BORROW AREA SOIL ANALYTICAL RESULTS
May 2010

Analyte [1]	Reporting Units	Reporting Limit	Sample Identification					
			Pit #1 0'-8'	Pit #1 8'-18'	Pit #2 0'-7'	Pit #2 7' - 18'	Pit #3 0'-9'	Pit #3 9' -18'
Sample Collection Date			5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010	5/20/2010
Aluminum	mg/kg	0.1	-	-	-	-	-	-
Calcium, sat. paste	meq/L	0.05	21.1	22.4	1.66	0.63	22.6	15
Conductivity, sat. paste	mmhos/cm	0.01	6.78	6.75	0.51	0.59	3.99	3.03
Copper	mg/kg	0.1	0.7	0.2	0.9	0.2	0.8	0.4
Iron	mg/kg	1	6	9	5	15	7	15
Magnesium, sat. paste	meq/L	0.08	16.8	15.9	0.95	0.42	14.6	5.79
Manganese	mg/kg	0.1	1.3	1.8	1.6	3.5	1.9	4.9
Moisture	%	1	58.5	21.6	60	21.2	59.8	25.7
Molybdenum	mg/kg	1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1
Molybdenum [2]	mg/kg	0.034-0.045	-	-	-	-	-	-
Nitrate as N, KCL Extract	mg/kg	1	1	1	1	1	1	<1
pH, sat. paste	s.u.	0.1	7.9	7.7	7.8	8	7.8	7.6
Phosphorus, Olsen	mg/kg	1	12	4.4	10	5	8.9	7.5
Potassium	mg/kg	10	166	68	148	82	186	95
Sodium Adsorption Ratio (SAR)	unitless	0.01	8.6	8.8	2.1	6.6	4.3	4.6
Sodium, sat. paste	meq/L	0.04	37.5	38.6	2.43	4.78	18.7	14.9
Zinc	mg/kg	0.1	0.6	0.1	1.2	0.3	0.2	0.3
Sand	%	1	20	78	18	80	18	66
Silt	%	1	34	10	34	8	32	18
Clay	%	1	46	12	48	12	50	16
Coarse Frags	%	1	5	25	5	24	6	16
Texture	N/A	N/A	C	SL	C	SL	C	SL

Notes:
Laboratory analysis for the above parameters was performed on the sand and fines fraction (less than 2 mm) of the original sample.

- = sample was not analyzed for this parameter
% = percent
KCL = potassium chloride
LS = loamy sand
meq/L = milli equivalent per liter
mg/kg = milligram per kilogram
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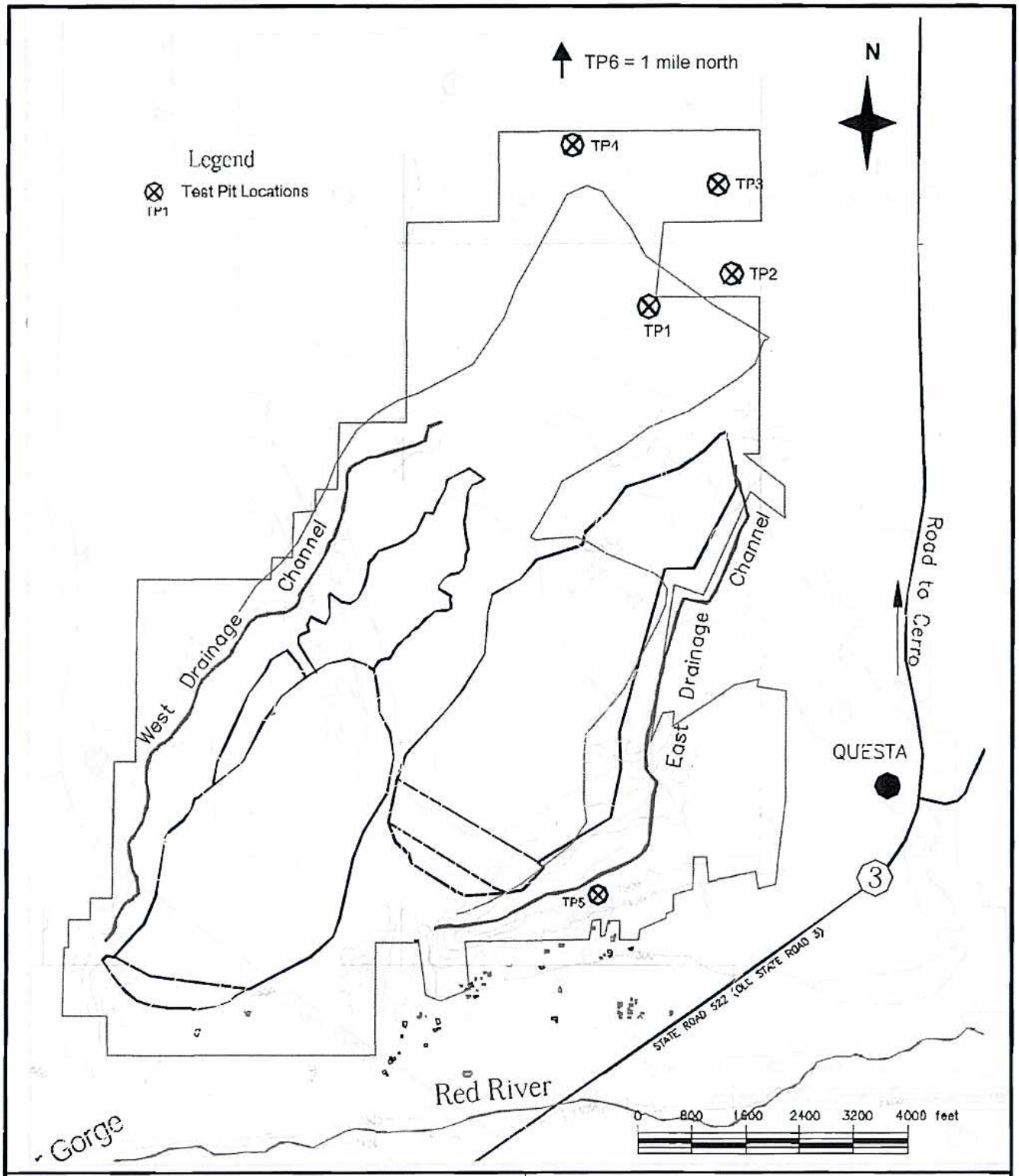
mmhos/com = milli mhos per centimeter
N/A = not applicable
s.u. = standard unit
SCL = sandy clay loam
SL = sandy loam
C=clay

[1] Analyses performed by Energy Laboratories, Helena, Montana.

Figures

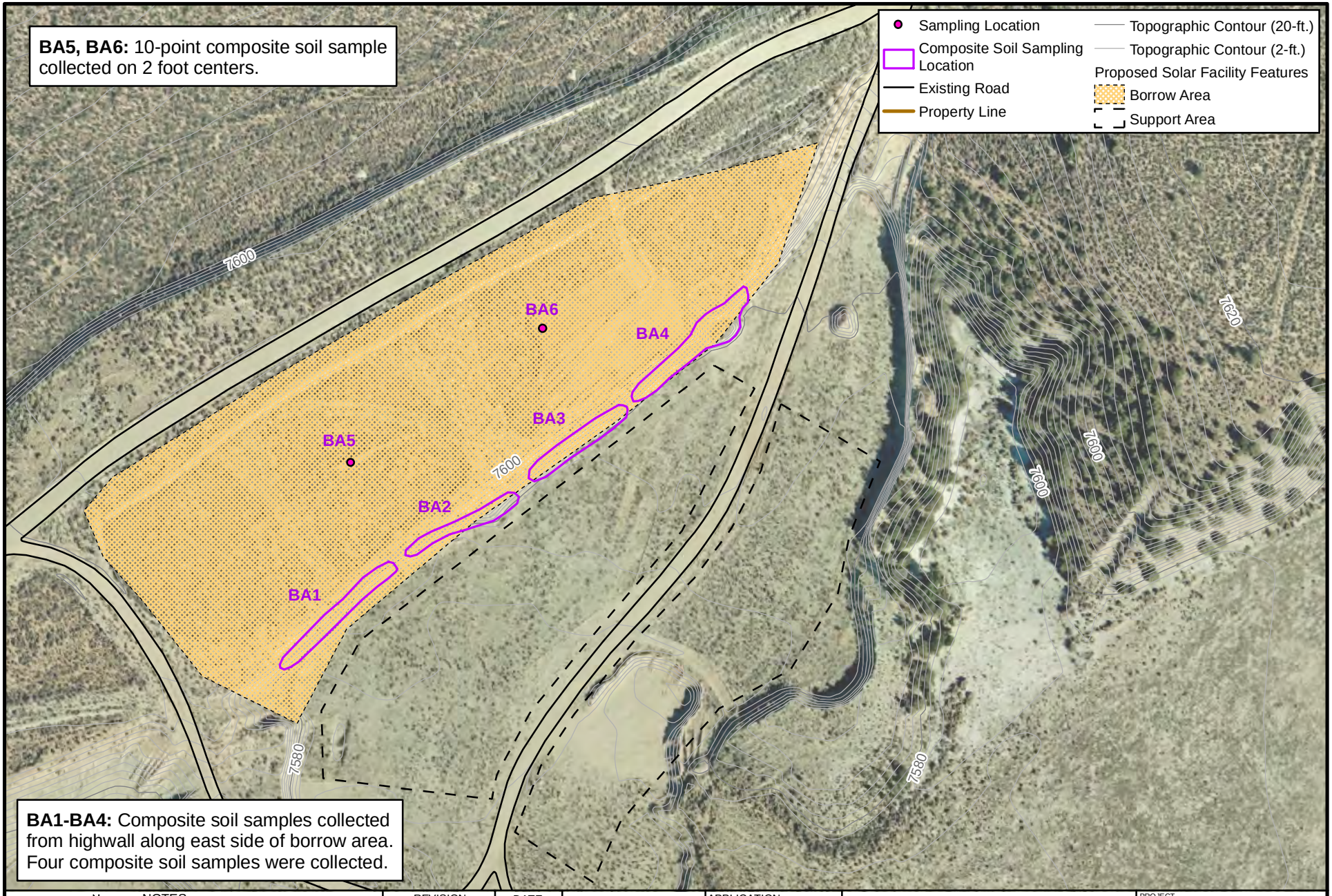


CLIENT:	MOLYCORP, INC
PROJECT No	052010
PROJECT:	BORROW MATERIALS INVESTIGATION
LOCATION:	QUESTA TAILINGS FACILITY NEW MEXICO, USA

ROBERTSON GEOCONSULTANTS INC.
Consulting Geotechnical and Environmental Engineers

Test Pit Locations

DATE:	DRAWN BY:	FIGURE:
July 2000	JG	1



N

NOTES:
1. Tailing Facility topography (2007) and cover site plan (2010) provided by Chevron Mining Inc. - Quest Mine.

0 150 Feet

REVISION	DATE

URS
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APPLICATION	ArcGIS 9.3
FILE NAME	fig4_BorrowLocs.mxd
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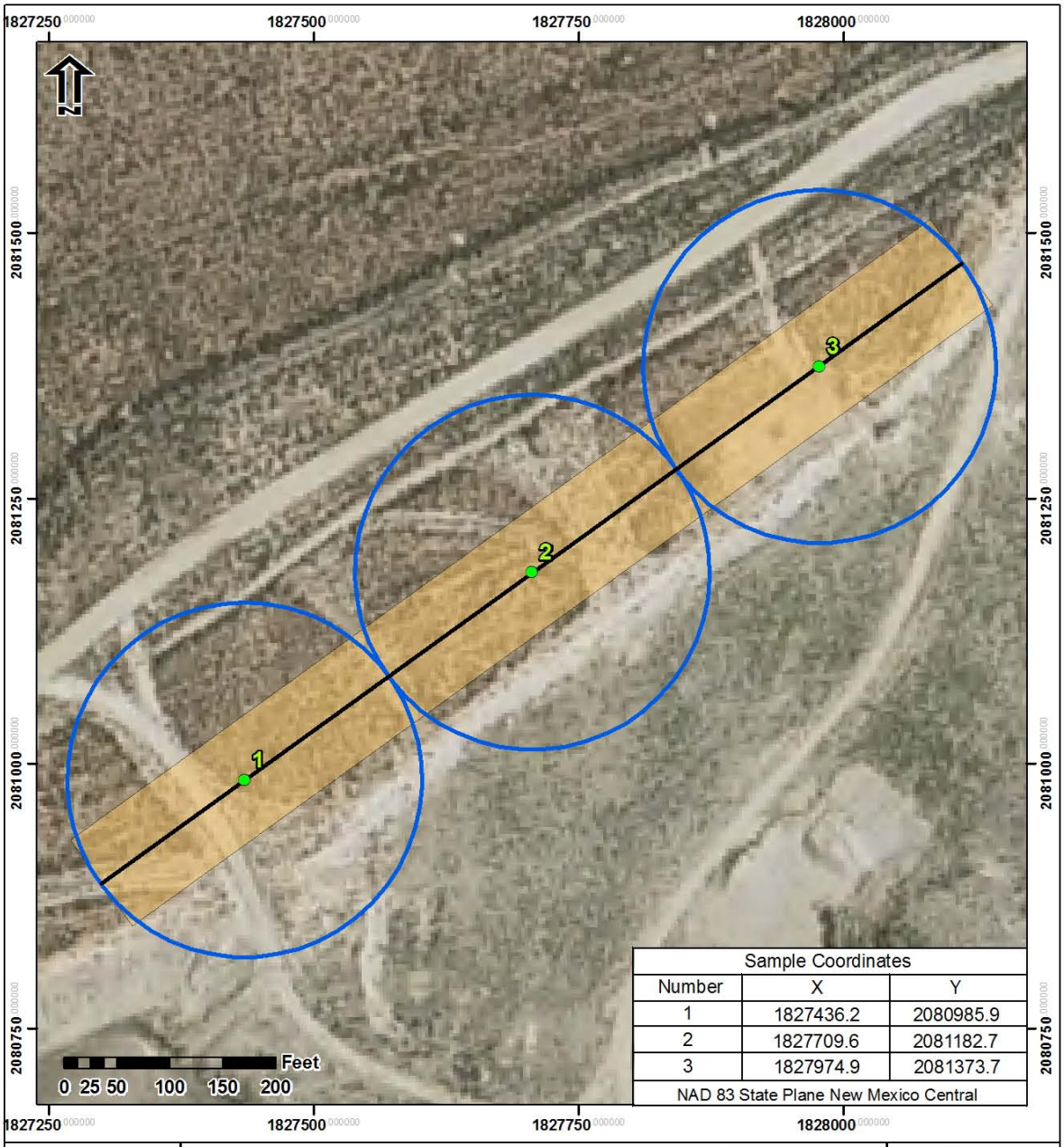
CHEVRON MINING INC. - QUESTA MINE

BORROW AREA
SAMPLE LOCATIONS

PROJECT 22241609

Figure 2

Soil & Vegetation Sampling Cover Depth Project



BUCHANAN Consultants, Ltd.

Topsoil Borrow Area Sample Points

Sample Points
1000' Line
333' Diameter Circles
1000' x 100' Borrow Area

1:1,500

May 21, 2010

Chevron Mining Inc.

Figure 3

Photographs

Photo 1: Looking north-northwest – borrow area sampling location (April sampling event).

Photo 2. Test Pit #1 (southern most pit) on May 2010 sampling event.

Photo 3. Test Pit #2 (center pit) on May 2010 sampling event.

Photo 4. Test Pit #3 (northern most pit) on May 2010 sampling event.