Lease COC-62920
Modification Area

Lease COC-62920
Modification Area

OSMRE Indian Lands PAP CO-0106A
Federal Coal Lease COC-62920

Lease COC-62920
Modification Area

Dunn/Ute/Stephens
Coal Lease

HAY GULCH

King Coal Mine

Colorado Coal Lease COC-7188

BLM

Lease COC-62920
Modification Area

King II Mine
OSMRE Indian Lands
Permit Application Package
CO-0106A (Permit Revision 2)

La Plata County, Colorado
December, 2016
Township 34, 35 North,
Range 11, 12 West, N.M.P.M.

OSMRE Indian Lands PAP CO-0106A

Previous Mine Plan Approval Area
(King Coal Mine)

King II Mine CDRMS Permit C-81-035

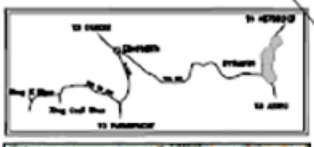
(Permit Boundary, OSMRE Permit #CO-0106A)

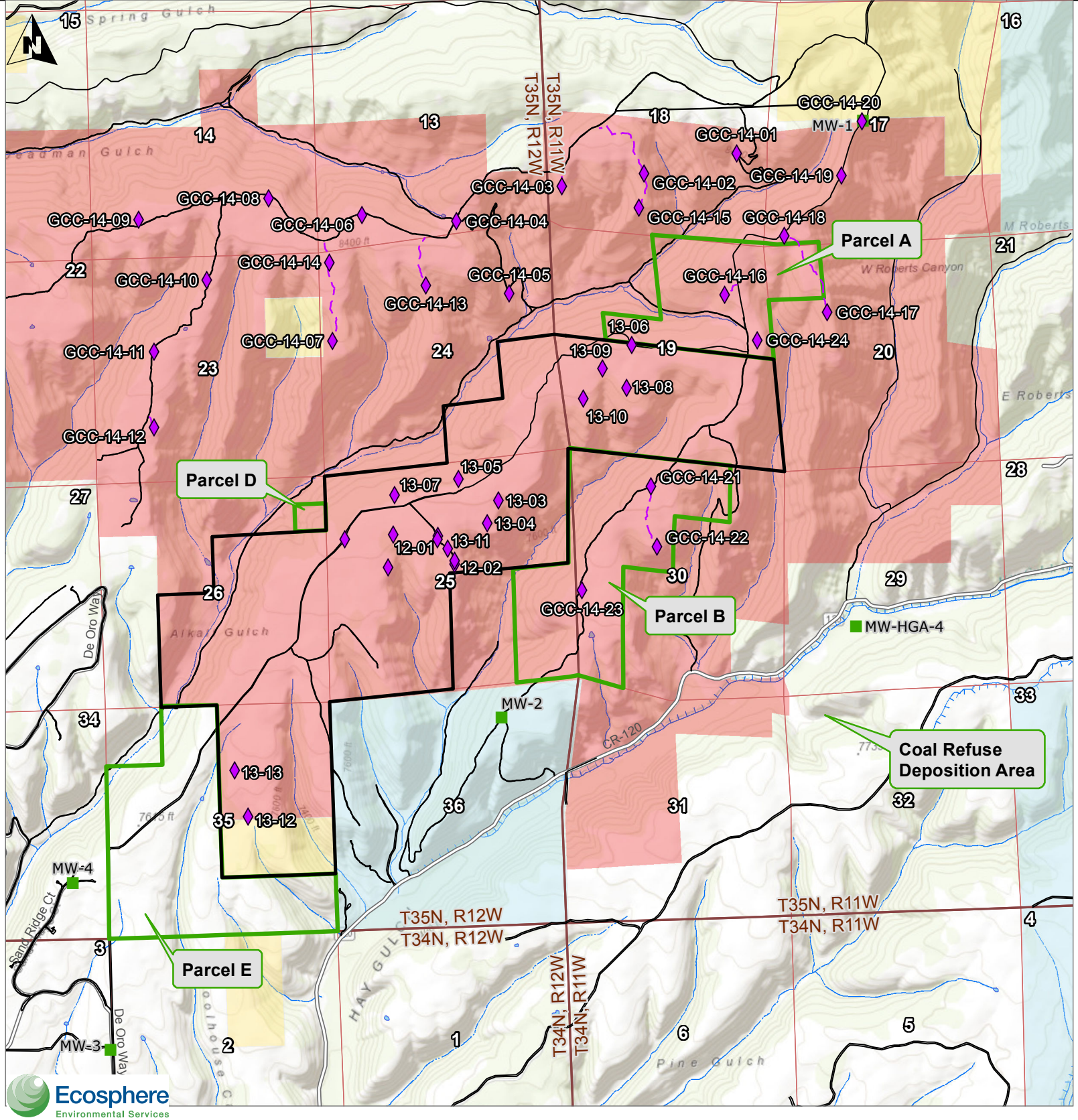
COC-62920 Lease Modification Areas

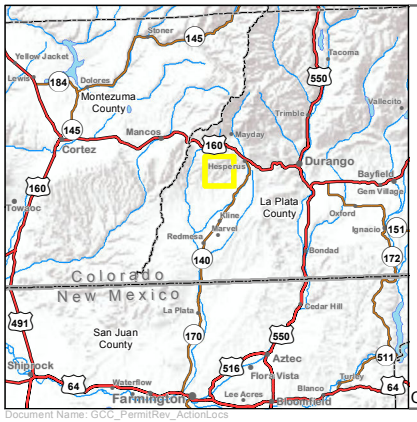
GCC Energy

KING II MINE
6473 County Road 120
Kewanee, CO. 81328
COLORADO MINING PERMIT C-81-035

King II-OSM-001
Locator Map







Exploration Drill Sites
Monitoring Well Locations
Proposed Exploration Drill Site Access
Local Road
Existing Lease Boundary COC-62920
Lease Modification Area

PLSS Townships
PLSS Sections

Surface Ownership

Bureau of Land Management
Private
State
Ute Mountain Ute

0 0.5 1 Miles

1:36,000

Coordinate System: NAD 1983 UTM Zone 12N

GCC Energy, LLC

King II Mine
COC-62920 - Lease Modification

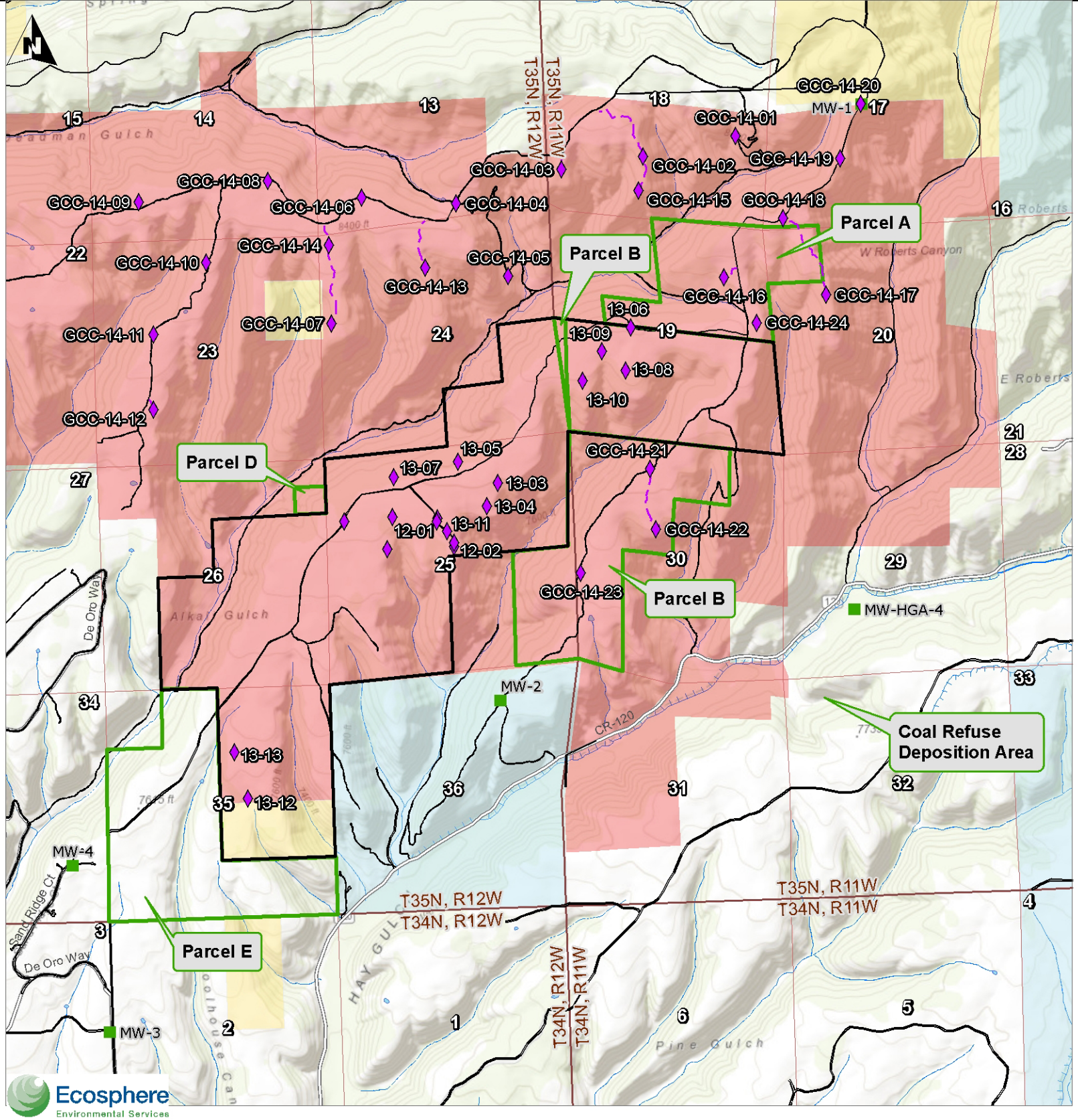
Permit Revision Action Locations

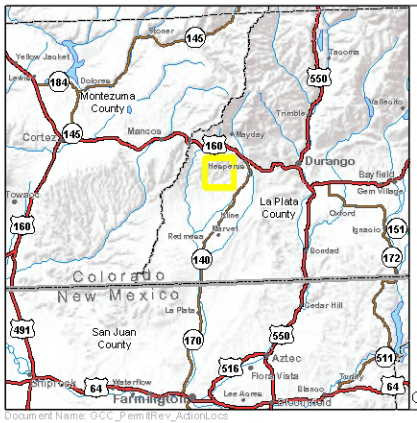
La Plata County, Colorado

Parts of Township 34N, Range 12W
Parts of Township 35N, Range 11 & 12W

7.5-min USGS Quadrangle:
Thompson Park & Hesperus

Date: 3/17/2017





Exploration Drill Sites

Monitoring Well Locations

Proposed Exploration Drill Site Access

Local Roads

Existing Lease Boundary COC-62920

Lease Modification Area

PLSS Townships

PLSS Sections

Surface Ownership

Bureau of Land Management

Private

State

Ute Mountain Ute

0 0.5 1 Miles

1:36,000

Coordinate System: NAD 1983 UTM Zone 12N

GCC Energy, LLC

King II Mine
COC-62920 - Lease Modification

Permit Revision Action Locations

La Plata County, Colorado

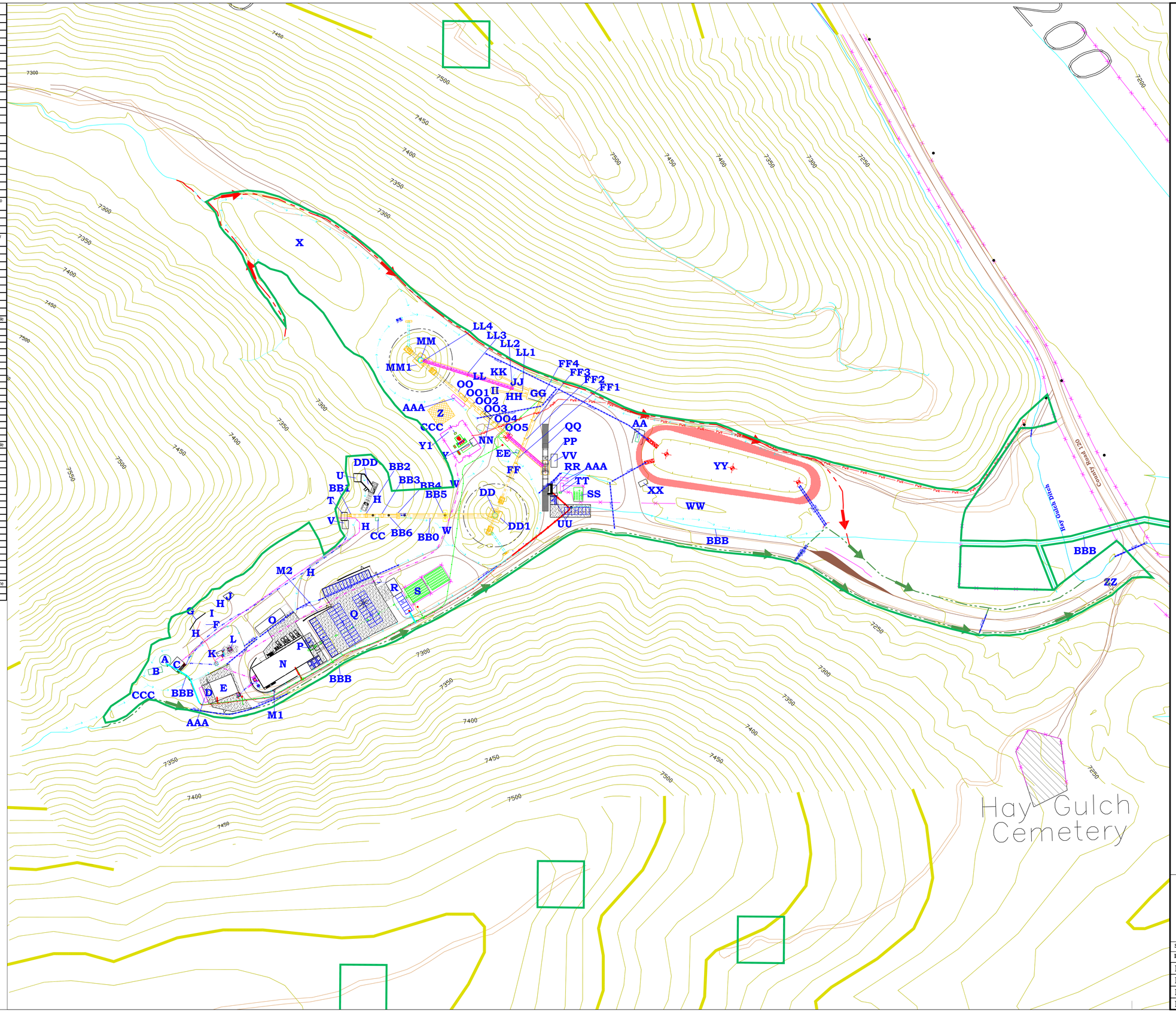
Parts of Township 34N, Range 12W
Parts of Township 35N, Range 11 & 12W

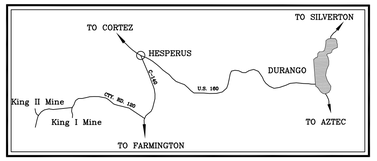
7.5-min USGS Quadrangle:
Thompson Park & Hesperus

Date: 3/9/2017

Document Name: GCC_PermitRev_ActionLocs

Map Symbol	Structure Description
A	Water Storage Tank, 100,000 Gallon
B	Water Storage Tank, 37,000 Gallon
C	Main Pump House
D	Shop Equipment Wash Pad
E	Shop Building
F	Mine Fan, Intake Portal
G	Retaining Wall Adjacent to Main Fan
H	Total Portal Reclaim Fill Volume
I	Fan Portal Structure
J	Travelway Portal Structure
K	Portal Motor Control Center (Portal MCC)
L	Rock Dust Storage Silo
M1	Concrete Retaining Wall #1
M2	Concrete Retaining Wall #2
N	Executive Offices/Parts Warehouse/Bath House Building
O	Covered Storage Building (Open, Three Sided)
P	Main Septic System Tank
Q	Main Parking Area
R	Fuel Storage Building
S	Main Septic System Drain Field
T	Belt Portal Structure
U	Return Portal Structure
V	Belt Portal Pump House
W	Waste Rock Storage Area (Waste Rock Trucked to King I)
X	Bermed Topsoil Storage #2
Y	Electrical Substation, Building
Y1	Electrical Substation, Slabs
Z	Electrical Substation Ground Field (Buried Copper Wire)
AA	Main Dumpster Pad
BB0	Slope Conveyor (Box Truss Section)
BB1	Slope Conveyor: Bent 1
BB2	Slope Conveyor: Bent 2
BB3	Slope Conveyor: Bent 3
BB4	Slope Conveyor: Bent 4
BB5	Slope Conveyor: Bent 5
BB6	Slope Conveyor (Non-Box Truss Section)
CC	Magnet Dumpster Pad #1
DD	Coal Stock Tube #1, 20,000 Ton Coal Storage Pile
DD1	Coal Stock Tube #1 Head House
EE	Magnet Dumpster Pad #2
FF	Raw Coal Conveyor
FF1	Raw Coal Conveyor: Bent 1
FF2	Raw Coal Conveyor: Bent 2
FF3	Raw Coal Conveyor: Bent 3
FF4	Raw Coal Conveyor: Bent 4
GG	Crushing/Screening Structure
GG1	Crushing/Screening Structure Pile Caps
HH	Lump Conveyor
II	Lump Coal Storage Area
JJ	Stoker Conveyor
KK	Stoker Coal Storage Area
LL	Crushed Coal Storage Conveyor
LL1	Crushed Coal Storage Conveyor: Bent 1
LL2	Crushed Coal Storage Conveyor: Bent 2
LL3	Crushed Coal Storage Conveyor: Bent 3
LL4	Crushed Coal Storage Conveyor: Bent 4
MM	Coal Stock Tube #2, 20,000 Ton Coal Storage Pile
MM1	Coal Stock Tube #2 Head House
NN	Cross-Belt Coal Sampler
OO	Truck Loadout Conveyor
OO1	Truck Loadout Conveyor: Bent 1
OO2	Truck Loadout Conveyor: Bent 2
OO3	Truck Loadout Conveyor: Bent 3
OO4	Truck Loadout Conveyor: Bent 4
OO5	Truck Loadout Conveyor: Bent 5
PP	Truck Loadout Structure & Bins
QQ	Truck Scale
RR	Coal Sales Building
SS	Coal Sales Building Septic System Drain Field
TT	Coal Sales Building Septic System Tank
UU	Coal Sales Building Parking Area
VV	Main Motor Control Center (Main MCC)
WW	Bermed Topsoil Storage #1
XX	Concrete Truck Wash-Out
YY	Sediment Pond
ZZ	Cattle Guard
AAA	Portable Office or Storage Container
BBB	Waterline to Connect to Huntington Ranch Waterline
CCC	Non-Coal Equipment Storage Area
DDD	Fan, Return Portal





LEGEND

CDRMS PERMIT C-81-035 BOUNDARY

AREAL EXTENT OF SURFACE DISTURBANCE

TOTAL AREAL EXTENT OF DISTURBANCE DISTURBANCE = 22.89 ACRES

SMALL AREA EXEMPTION #1

SITE DRAINAGE

HUNTINGTON BURIED PIPELINE

CLEARWATER WEST

CLEARWATER EAST

REVISIONS	
DATE	DESCRIPTION
03/12/17	OSMRE Permit Revision 2 (PR-02)

0' 100' 200' 300'

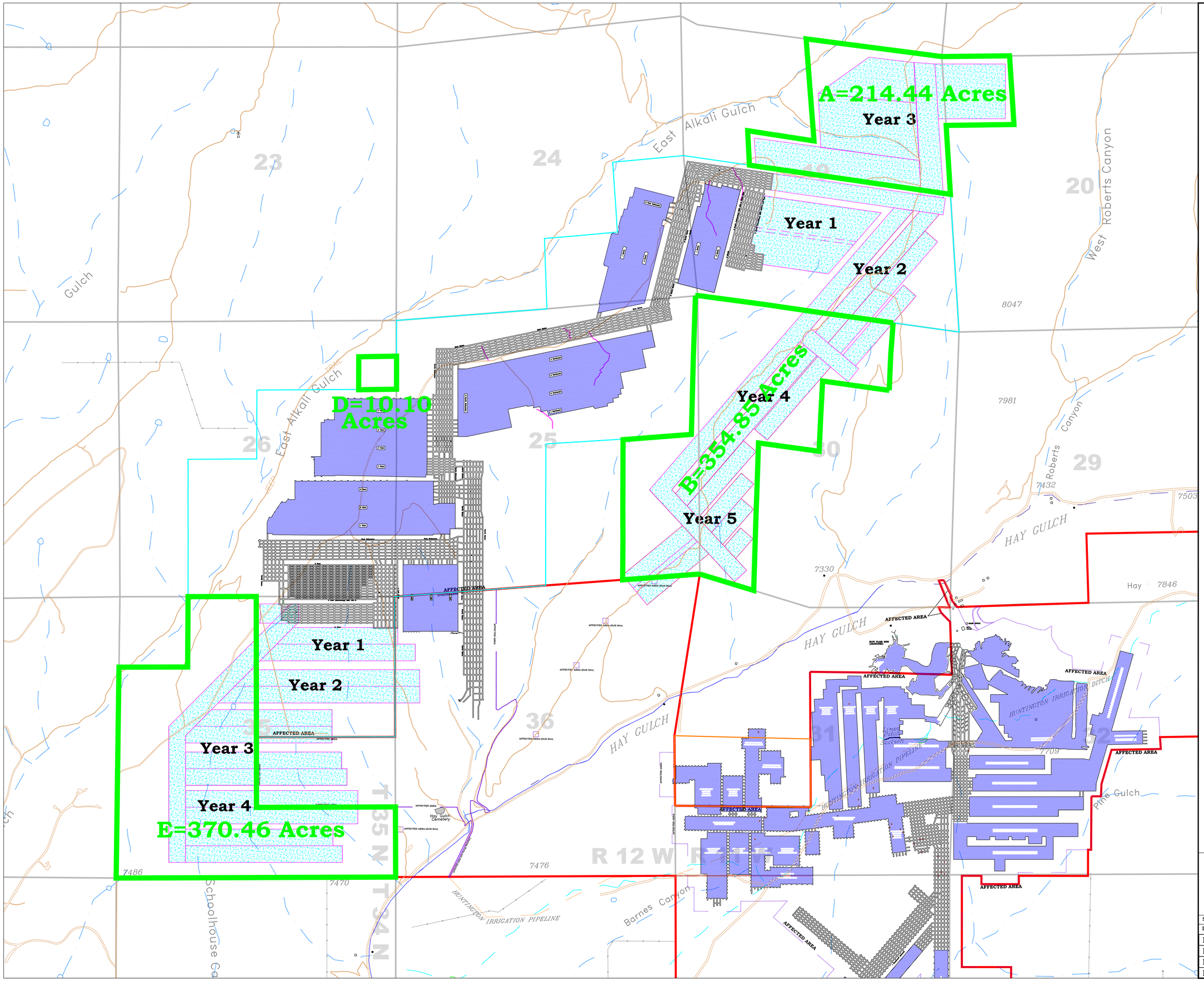
Scale: 1" = 100'

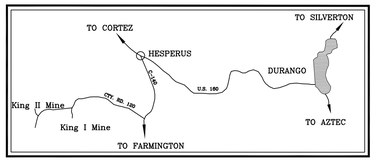
GCC Energy

GCC Energy, LLC
6473 County Road 120
Hesperus, CO 81326
Colorado Mining Permit C-1981-035

King II-OSMRE-007
Operation Plan &
Surface Features Map

Scale: 1" = 100'	Designed By: Tom Bird
Date: 03/12/17	Drawn By: Tom Bird
File Path:	Environmental\King II\Permit Maps
File Name:	King II-007 Operation Plan
Plot Date:	03/12/17
Plot Time:	9:55 am





LEGEND

- PERMIT BOUNDARY OSMRE CO-0106A
- PERMIT BOUNDARY CDRMS C-81-035
- COC-62920 LEASE MODIFICATION AREAS
- PROPOSED MINING PROJECTIONS

Note: Projections subject to change with geologic and mining conditions.

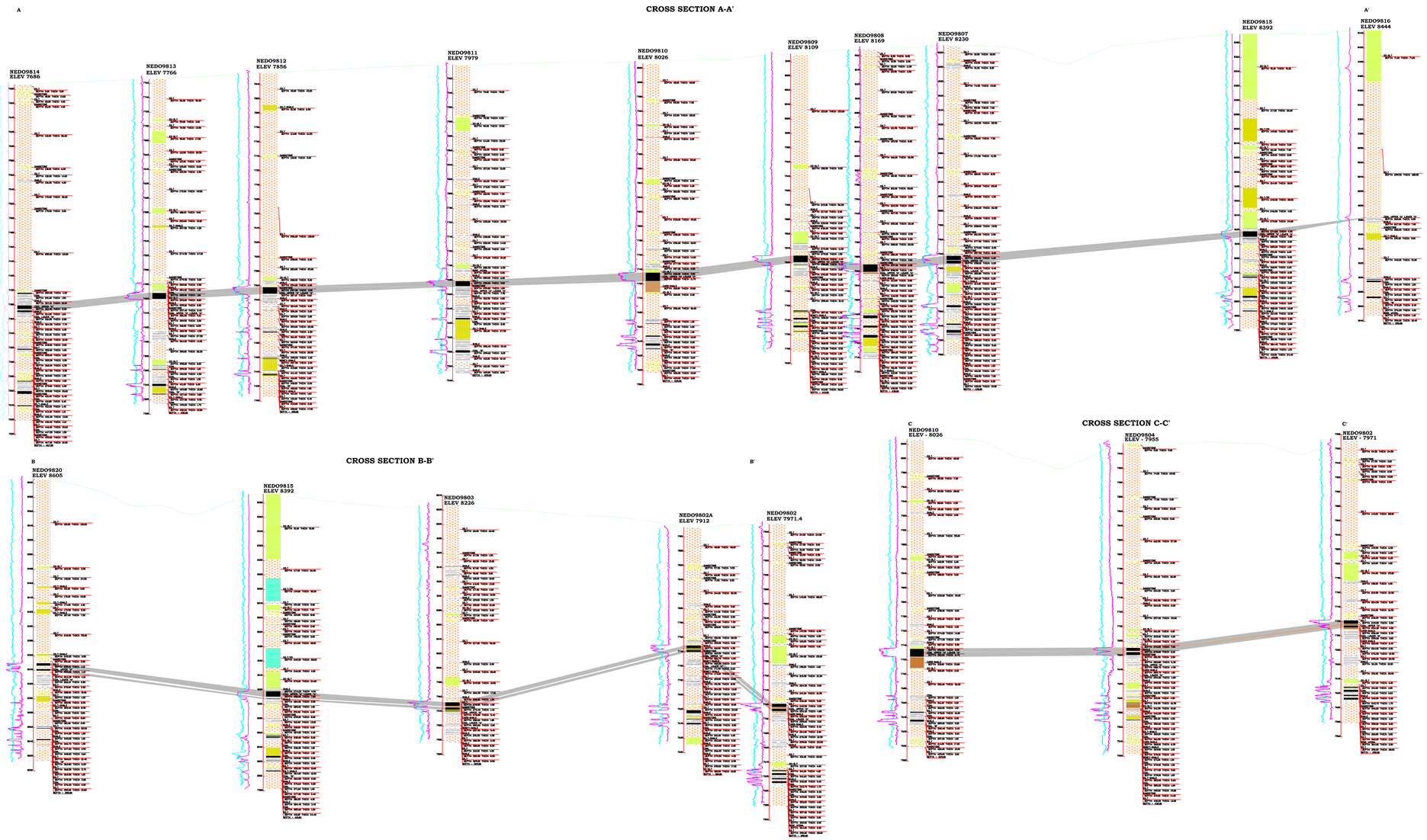
0' 700' 1400' 2100'

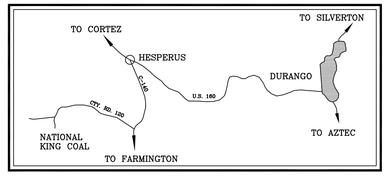
GCC Energy

KING II MINE
6473 County Road 120
Hesperus, CO 81326
COLORADO MINING PERMIT C-81-035
OSMRE MINING PERMIT CO-0106A

King II-OSMRE-005
MINE PLAN

Scale: 1" = 700'		Designed By:	Tom Bird
Date: 03/11/2017		Drawn By:	Tom Bird
File Path:	Tom\Environmental\King II\Permit Maps\OSM		
File Name:	King II-R2P2-003 Mine Plan		
Plot Date:	03/11/2017		
Plot Time:	9:10 am		





LEGEND

Gamma
Density

Coal Seam

210'
140'
70'
0'
0'
700'
1,400'
2,100'

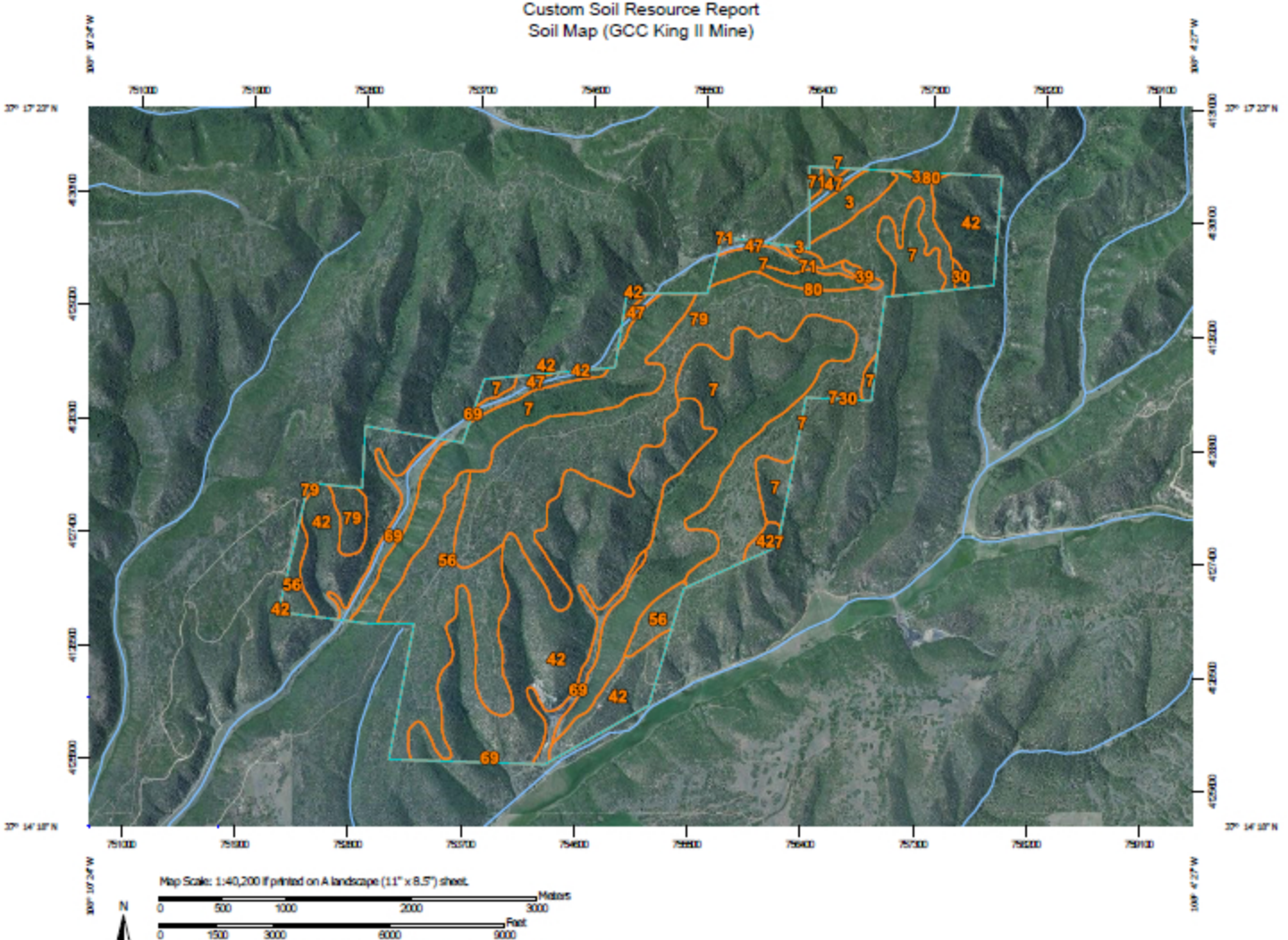
GCC Energy

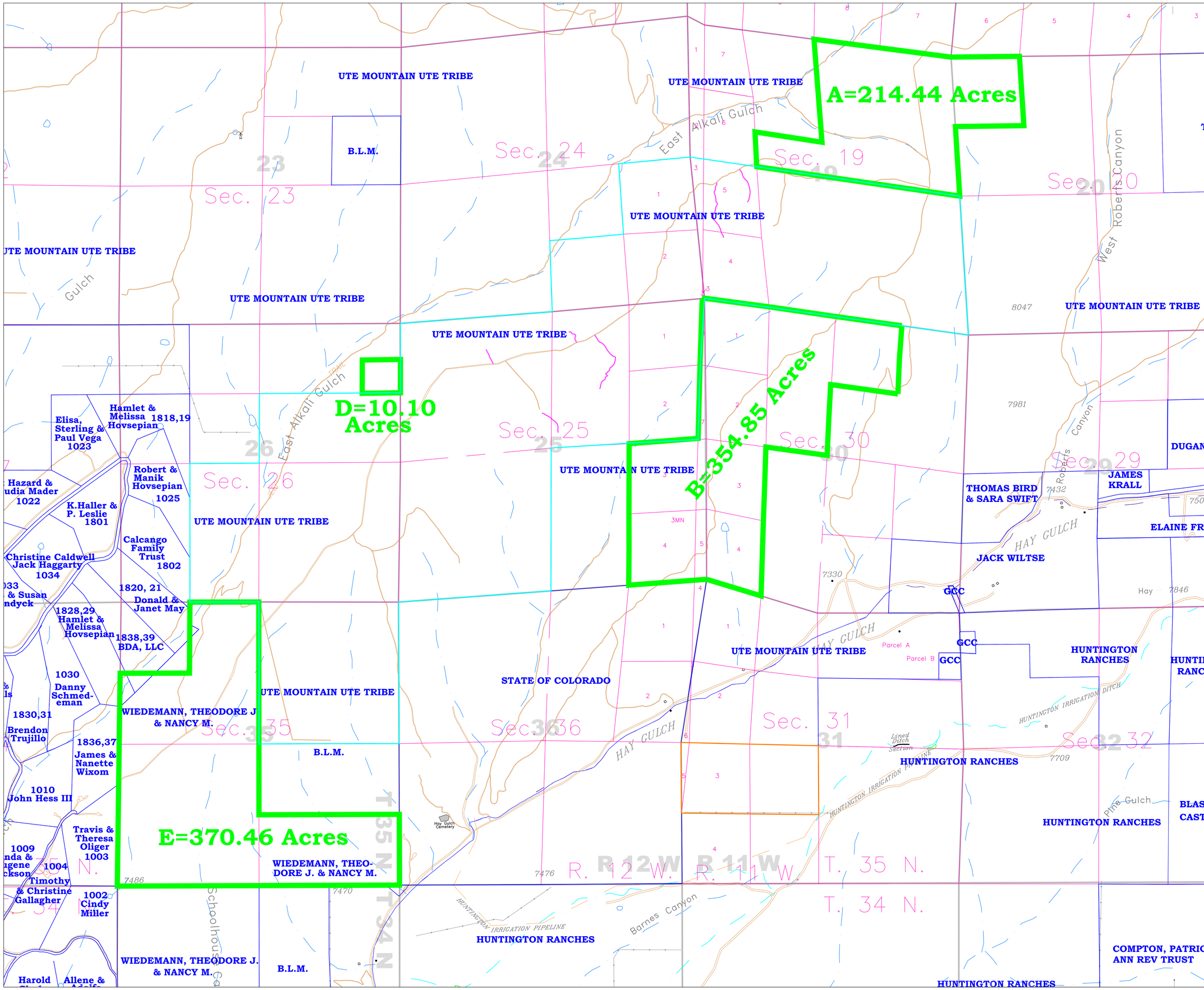
GCC Energy, LLC
6473 County Road 120
Hesperus, CO 81326
OSMRE Mining Permit C-0106A
Colorado Mining Permit C-1981-035

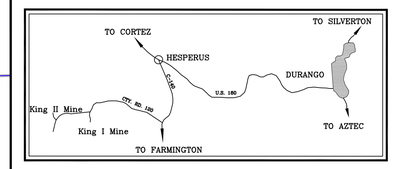
King II-OSMRE-008
Geologic Cross Sections

Scale:	1" = 70':700'	Designed By:	Tom Bird
Date:	03/12/17	Drawn By:	Tom Bird
File Path:	Environmental\King II\Permit Maps		
File Name:	King II-OSMRE-008		
Plot Date:	03/12/17		
Plot Time:	9:55 am		

Custom Soil Resource Report
Soil Map (GCC King II Mine)







LEGEND

- SURFACE PROPERTY BOUNDARY
- PERMIT BOUNDARY CO-0106A
- COC-62920 LEASE MODIFICATION AREAS

PERMIT AREA SURFACE OWNERSHIP

Ute Mountain Tribe
PO Box 128
Towaoc, CO 81334

CONTIGUOUS SURFACE OWNERSHIP

Bureau of Land Management
2850 Youngfield Street
Lakewood, CO 80215-7093

State of Colorado
State Board of Land Commissioners
1313 Sherman Street, Room 620
Denver, CO 80203

Wiedmann, Theodore J. & Nancy M.
5960 East Territory Ave.
Tuscon, AZ 85750

(1818, 1839, 1839) Hovsepian, Hamlet & Melissa
3206 Ashfield Drive
Houston, TX 77082

(1025) Hovsepian, Robert & Manik
1677 S. Riverbend Ln.
Superior, CO 80027

(1802) Calcango Family Trust
28093 Cannon Dr.
Sun City, CA 92585

(1820) May, Donald E. & Janet O.
9036 Old Tom Morris Circle
Highlands Ranch, CO 80129-2247

(1838, 1839) BDA, LLC
1314 Durango Ridge Rd.
Durango, CO 81301

(1836, 1837) James & Nanette Wixom
650 Sand Ridge Ct.
Hesperus, CO 81326

(1003) Travis & Theresa Oliger
620 Sand Ridge Ct.
Hesperus, CO 81326

(1002) Cindy Miller
3900 Highlander Ave.
Lake Havasu City, AZ 86406

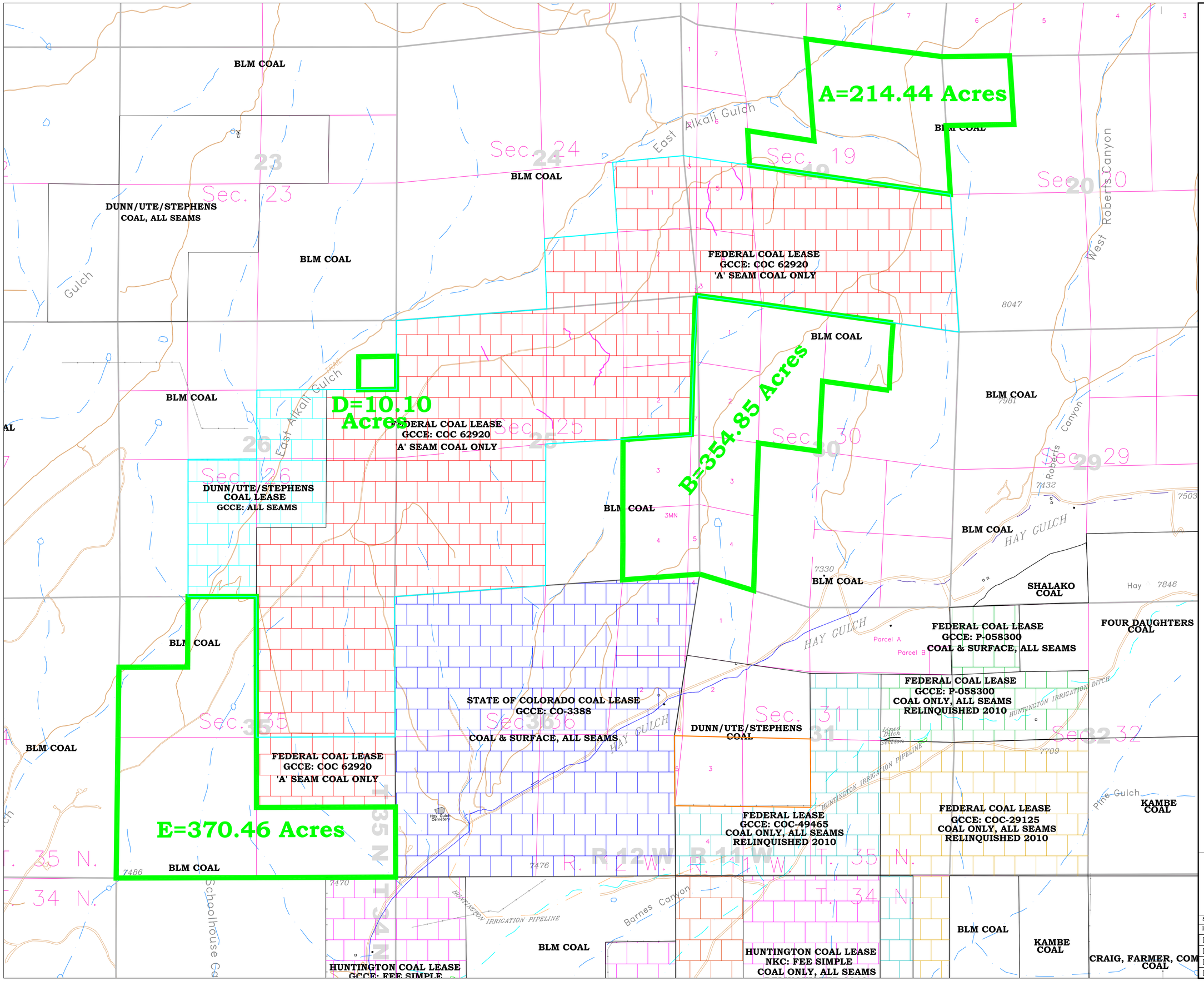
0' 700' 1400' 2100'

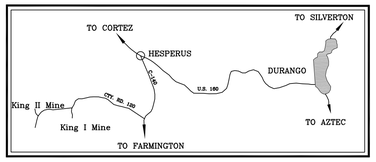
GCC Energy

KING II MINE
6473 County Road 120
Hesperus, CO 81326
COLORADO MINING PERMIT C-81-035
OSMRE MINING PERMIT CO-0106A

King II-OSMRE-002
SURFACE OWNERSHIP

Scale: 1" = 700'		Designed By:	Tom Bird
Date: 03/11/2017		Drawn By:	Tom Bird
File Path:	Tom\Environmental\King II\Permit Maps\OSM		
File Name:	King II-OSM-002 Surface Ownership		
Plot Date:	03/11/2017		
Plot Time:	9:10 am		





LEGEND

- SURFACE PROPERTY BOUNDARY
- PERMIT BOUNDARY CO-0106A
- COC-62920 LEASE MODIFICATION AREAS

GCC Energy, LLC Leases Current & Relinquished

COAL OWNERSHIP

Bureau of Land Management (BLM)
2850 Youngfield Street
Lakewood, CO 80215-7093

Ute Mountain Tribe
PO Box 128
Towaoc, CO 81334

The Estate of Joan Dunn
c/o Bill Scott Dunn, Personal Representative
3207 N. El Dorado
Chandler, AZ 85224

Karen Stephens
27037 Oakmont Drive
Valley Center, CA 92082

Gary L. Stephens
3660 N. Lakeshore Drive #3705
Chicago, IL 60613-5300

State of Colorado
State Board of Land Commissioners
1127 Sherman Street, Suite 300
Denver, CO 80203

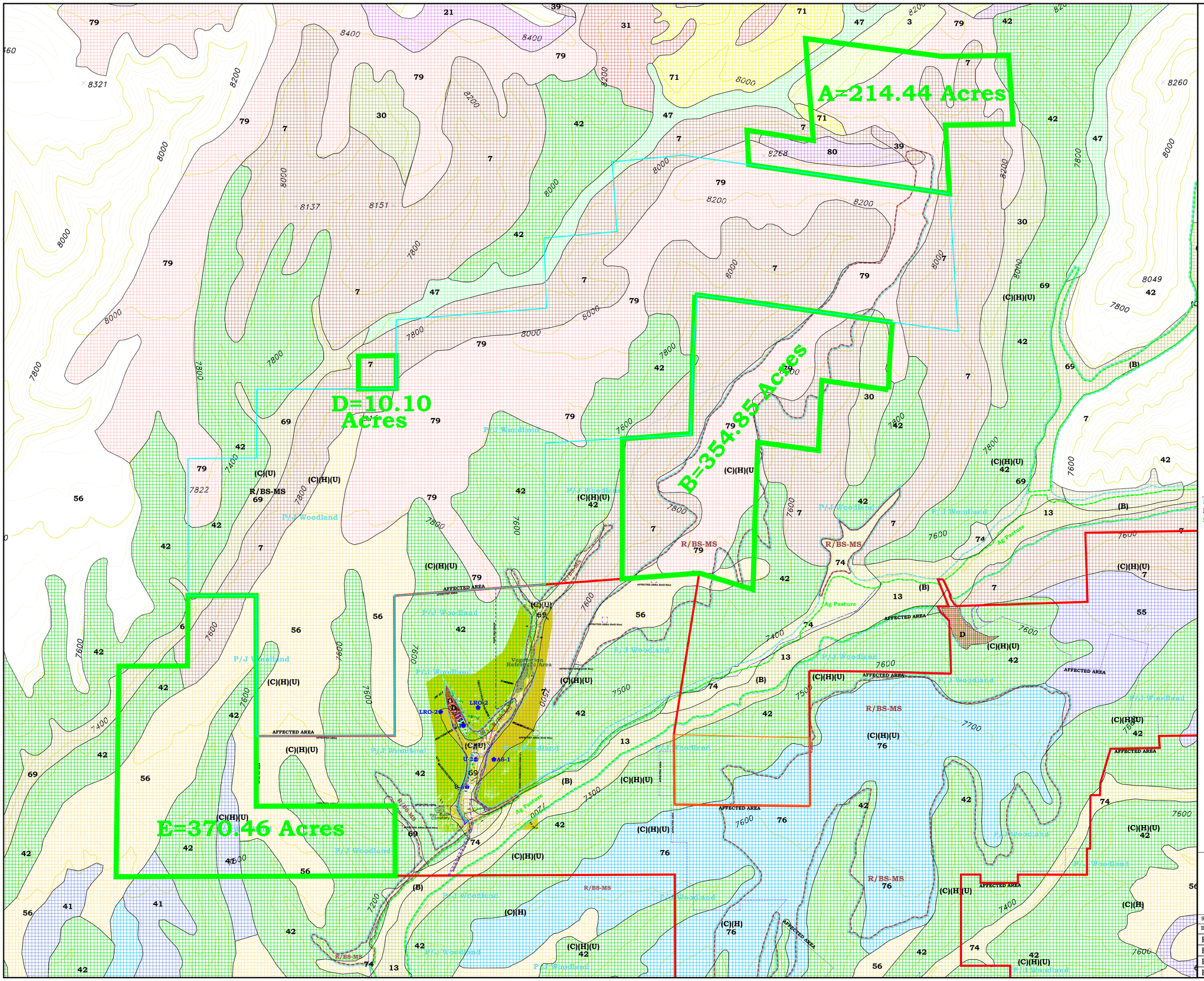
0' 700' 1400' 2100'

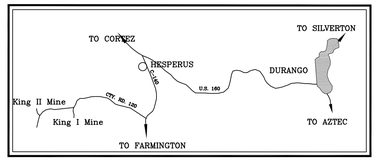
GCC Energy

KING II MINE
6473 County Road 120
Hesperus, CO 81326
COLORADO MINING PERMIT C-81-035
OSMRE MINING PERMIT CO-0106A

King II-OSMRE-003
COAL OWNERSHIP

Scale:	1" = 700'	Designed By:	Tom Bird
Date:	03/11/2017	Drawn By:	Tom Bird
File Path:	Tom\Environmental\King II\Permit Maps\OSM		
File Name:	King II-OSM-003 Coal Ownership		
Plot Date:	03/11/2017		
Plot Time:	9:10 am		





LEGEND

- OSMRE PERMIT C-0106A BOUNDARY
- CDRMS PERMIT C-81-035 BOUNDARY
- AFFECTED AREA BOUNDARY
- ROADS

Soils

- 3 – Anvik Loam, 12–45% Slopes
- 7 – Archuleta–Sanchez, Stony, Complex, 12–65% slopes MLRA 36
- 13 – Big Blue Clay Loam
- 21 – Coni Loam, 4–25% Slopes
- 30 – Fortwingate–Rock Outcrop Complex, 6–25% Slopes
- 31 – Goldvale Very Stony Fine Sandy Loam, 15–65% Slopes
- 39 – Hesperus Loam, 3–12% Slopes
- 41 – Lazear Stony Loam. 6–25% Slopes
- 42 – Lazear–Rock Outcrop Complex, 12–65% Slopes
- 47 – Nutrioso Loam
- 56 – Pulpit Loam, 3–12% Slopes
- 64 – Simpatico Loam
- 69 – Umbarg Loam
- 71 – Valto–Rock Outcrop Complex, 12–65% Slopes
- 74 – Vosburg Fine Sandy Loam, 3–8% Slopes
- 76 – Witt Loam, 3–8% Slopes
- 79 – Zau Stony Loam, 3–9% Slopes
- 80 – Zau Stony Loam, 9–25% Slopes
- D – Disturbed
- Soil Sample Point

Vegetation

P/J Woodland = Pinyon–Juniper Woodland

R/BS–MS = Rabbitbrush/Big Sage Mixed Shrubland

Ag Pasture = Agricultural Pastureland

Land Use

(C) – Rangeland
(H) – Fish & Wildlife Habitat
(U) – Undeveloped
(B) – Pastureland

REVISIONS

DATE	DESCRIPTION
03/12/17	OSMRE Permit Revision 2 (PR-02)

0' 300' 600' 900'

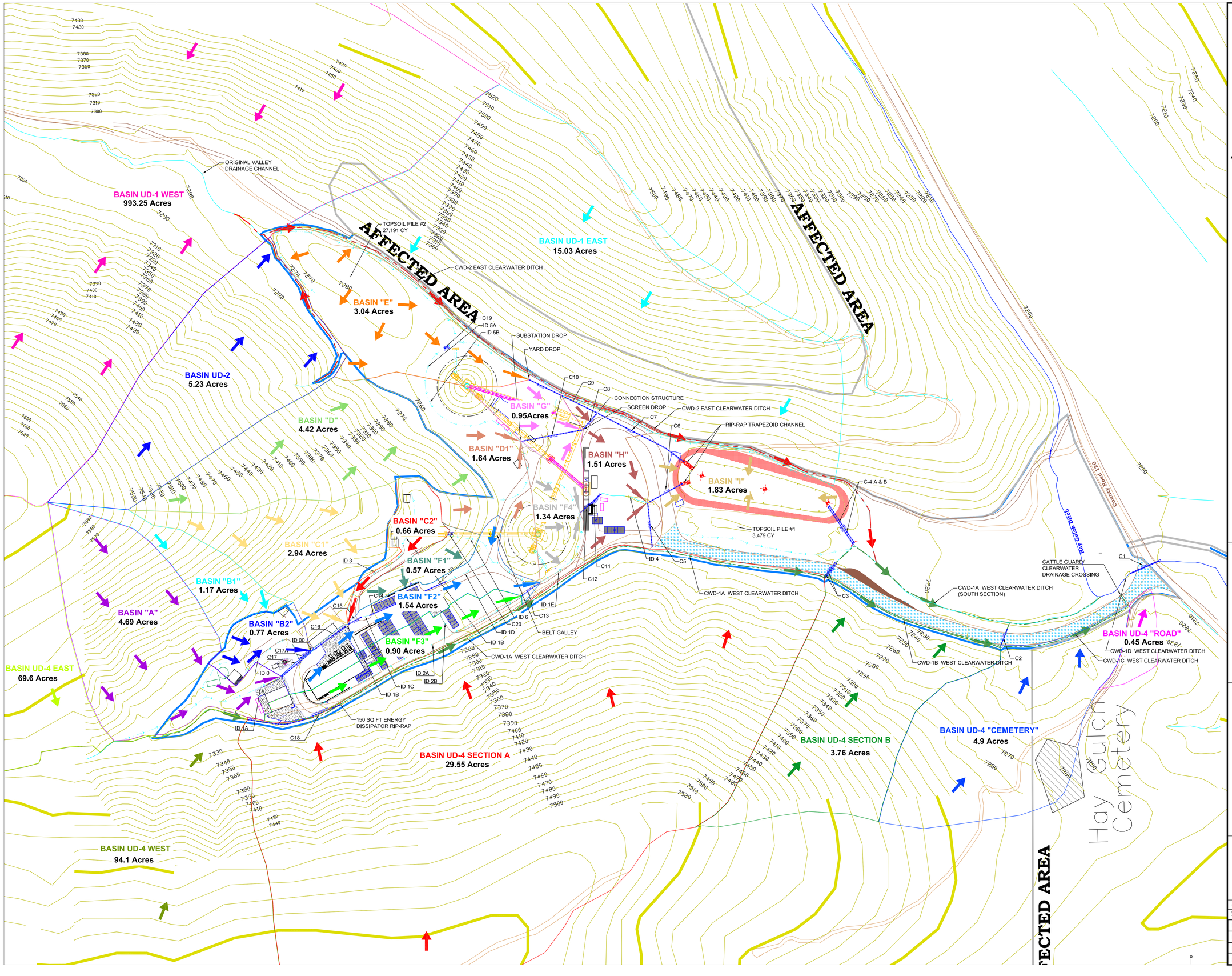
Scale: 1" = 300'

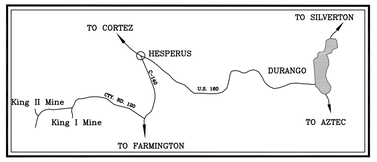
GCC Energy

GCC Energy, LLC
6473 County Road 120
Hesperus, CO 81326
Colorado Mining Permit C-1981-035

King II-OSMRE-006
Soils, Vegetation & Land Use

Scale:	1" = 300'	Designed By:	Tom Bird
Date:	03/12/17	Drawn By:	Tom Bird
File Path:	Environmental\King II\Permit Maps		
File Name:	King II–006 Soils		
Plot Date:	03/12/17		
Plot Time:	9:55 am		





LEGEND

AREAL EXTENT OF SURFACE DISTURBANCE

TOTAL AREA OF DISTURBANCE = 25.50 ACRES

- SMALL AREA EXEMPTION #1
- SITE DRAINAGE
- CLEARWATER WEST
- CLEARWATER EAST
- CULVERT
- C-16 — CULVERT ID
- ID-2B — INTERNAL DITCH ID
- BASIN FLOWS
- NATURAL STREAM (EPHEMERAL)

REVISIONS

DATE	DESCRIPTION
06/30/15	Technical Revision No. 25 - Surface Hydrology As-Built Update
10/21/15	Technical Revision No. 25 - Adequacy Review #1 Response

0' 100' 200' 300'

Scale: 1" = 100'
Contour Interval = 2'

PRELIMINARY

I, _____, a professional engineer, certify that the information on this map is correct to the best of my knowledge and belief.

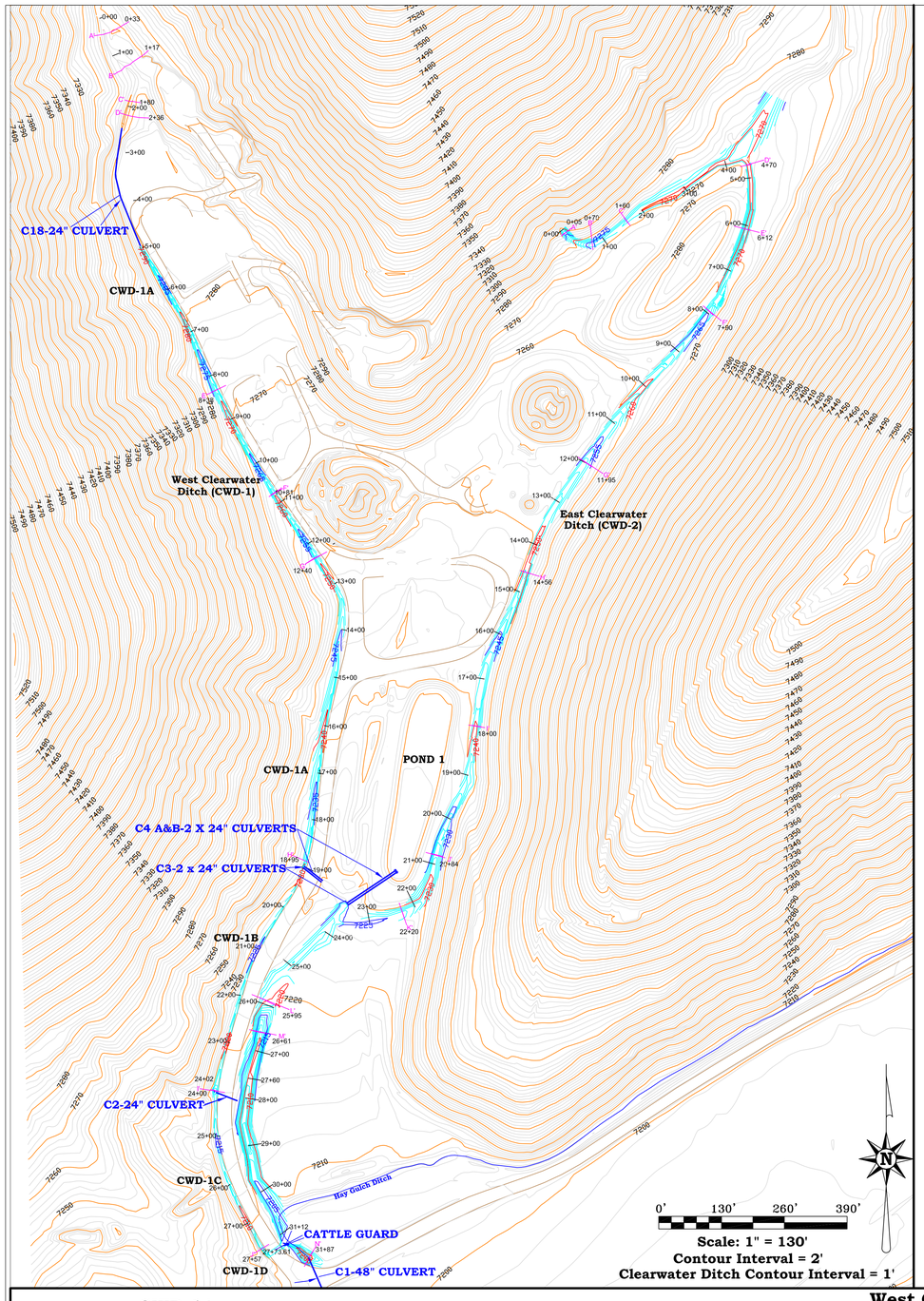
GCC Energy

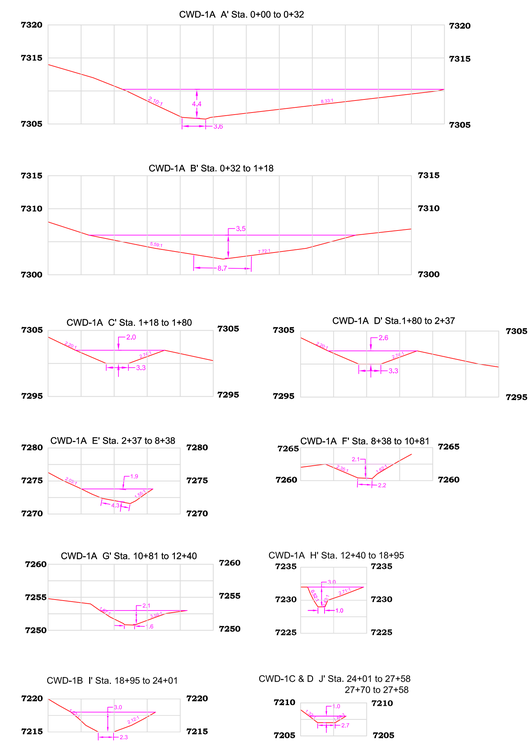
GCC Energy, LLC
6473 County Road 120
Hesperus, CO 81326
Colorado Mining Permit C-1981-035

King II-007A

Site Watershed Basins
Site Culvert Locations
Site Drainage Ditch Locations

Scale:	1" = 100'	Designed By:	Tom Bird
Date:	12/01/15	Drawn By:	Tom Bird
File Path:	Environmental\King II\Permit Maps		
File Name:	King II-007A Basins-Culverts-Ditches		
Plot Date:	12/01/15		
Plot Time:	3:55 pm		

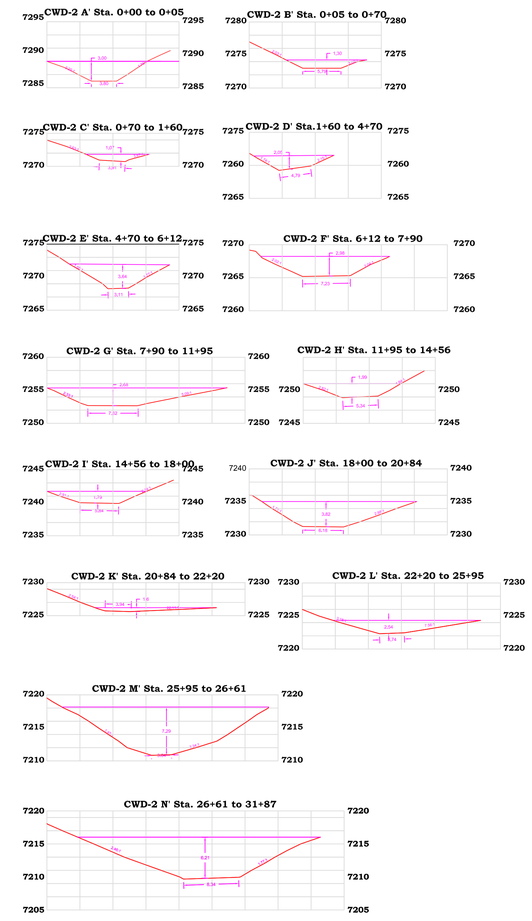




West Clearwater Ditch (CWD-1)

0' 10' 20' 30'

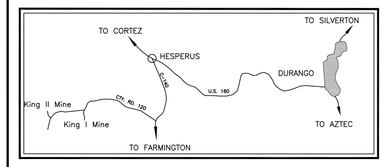
Scale: 1" = 10'



East Clearwater Ditch (CWD-2)

0' 10' 20' 30'

Scale: 1" = 10'



LEGEND

- 18" CMP — CULVERT
- CLEARWATER DITCH TOPO 1'
- CLEARWATER DITCH TOPO 5'
- CLEARWATER DITCH TOPO 10'

REVISIONS	
DATE	DESCRIPTION
06/30/15	Technical Revision No. 25 - Surface Hydrology As-Built Update
10/21/15	Technical Revision No. 25 - Adequacy Review #1 Response

PRELIMINARY

I, _____, a professional engineer, certify that the information on this map is correct to the best of my knowledge and belief.

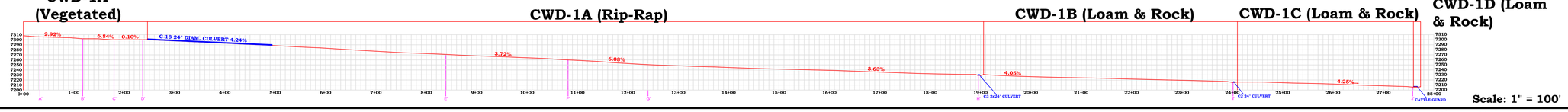
GCC Energy, LLC
6473 County Road 120
Hesperus, CO 81326
Colorado Mining Permit C-1981-035

King II-007B

Clearwater Ditch Details (As-Built)

Scale:	As Shown	Designed By:	J. McCourt
Date:	12/03/15	Drawn By:	J. McCourt
File Path:	Environmental\King II\Permit Maps		
File Name:	King II-007B Clearwater Ditches		
Plot Date:	12/03/15		
Plot Time:	3:55 pm		

West Clearwater Ditch (CWD-1 A-D)

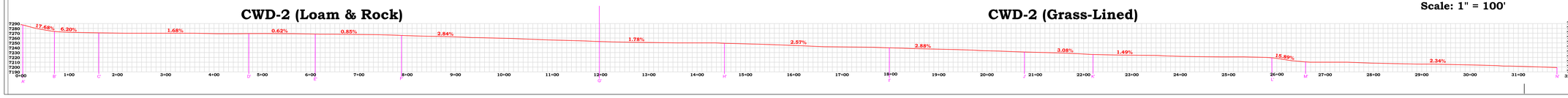


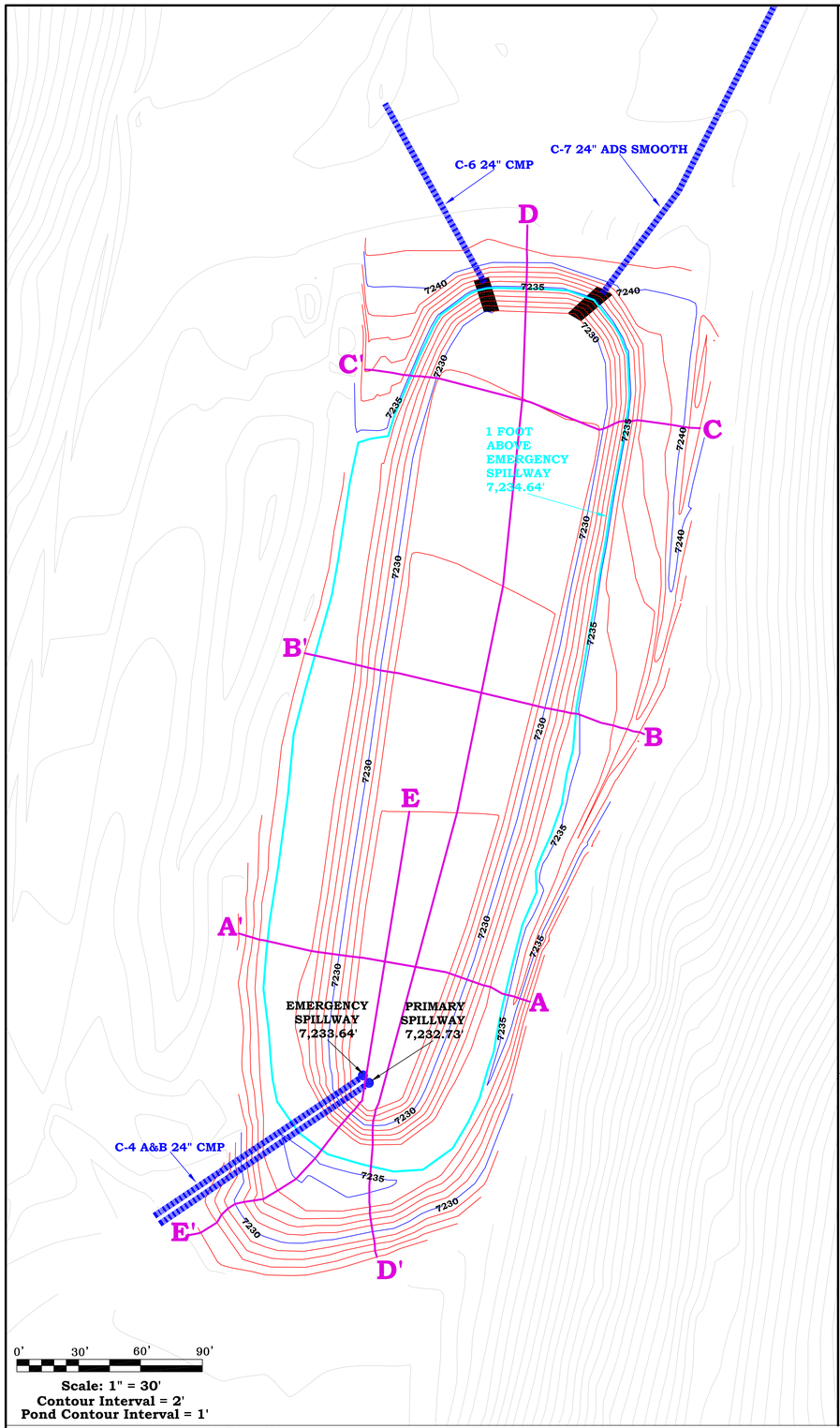
Scale: 1" = 100'

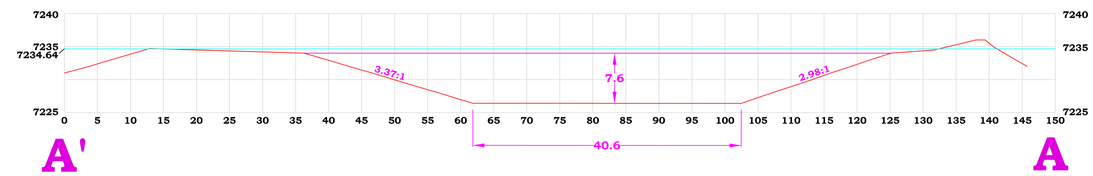
East Clearwater Ditch (CWD-2)

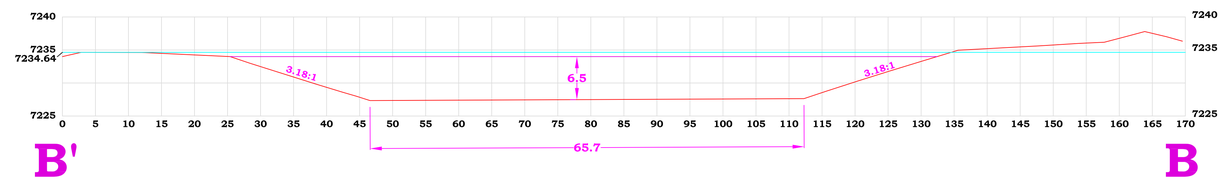
0' 100' 200' 300'

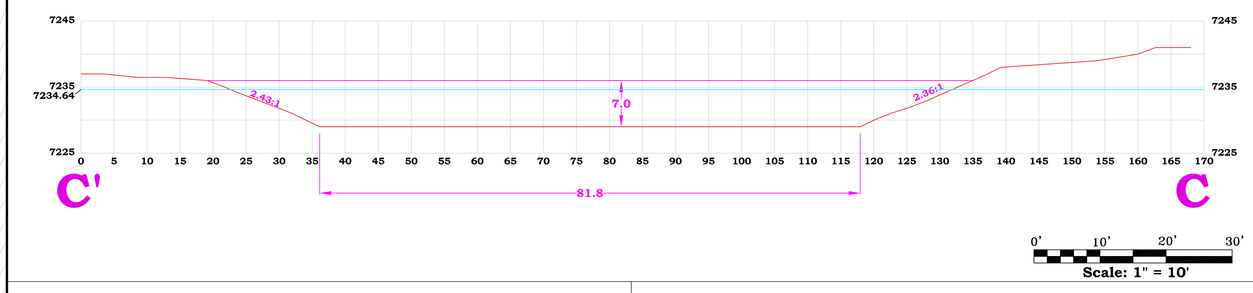
Scale: 1" = 100'

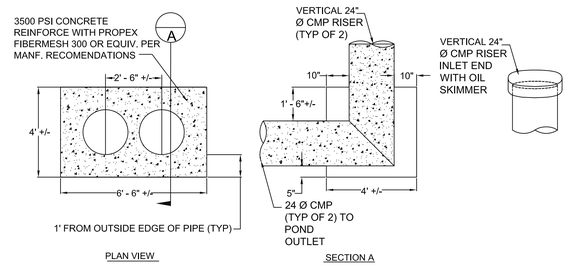


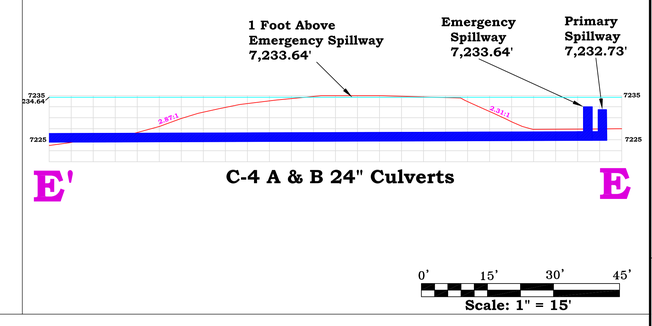


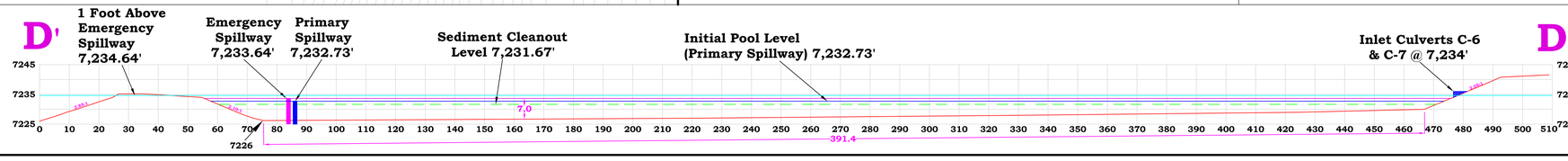


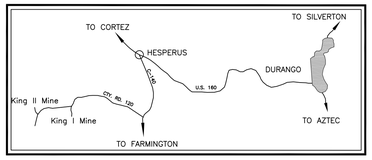






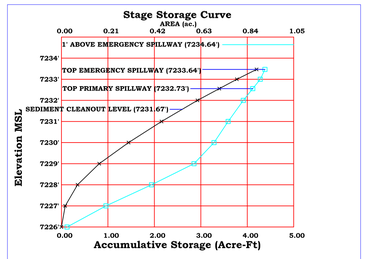






REVISIONS

DATE	DESCRIPTION
06/30/15	Technical Revision No. 25 - Surface Hydrology As-Built Update
12/07/15	Technical Revision No. 25 - Adequacy Review #1 Response



STORAGE VALUE COMPUTATIONS
Sediment Control Structure No. 1

ELEV. (ft)	Width (ft)	LENGTH (ft)	AREA (ac)	AVG. AREA (ac)	INTERVAL (ft)	STORAGE (ac-ft)	ACC. STORAGE (ac-ft)	STAGE INTERVAL (ft)
7226.17	N/A	N/A	0.0253					
7227.17	N/A	N/A	0.2010	0.1131	1.00	0.0800	0.0800	1.00
7228.17	N/A	N/A	0.4073	0.3042	1.00	0.2656	0.3457	2.00
7229.17	N/A	N/A	0.5992	0.5032	1.00	0.4670	0.8127	3.00
7230.17	N/A	N/A	0.6897	0.6444	1.00	0.6321	1.4448	4.00
7231.17	N/A	N/A	0.7535	0.7216	1.00	0.7097	2.1545	5.00
7232.17	N/A	N/A	0.8221	0.7878	1.00	0.7741	2.9286	6.00
7232.73	N/A	N/A	0.8648	0.8435	0.56	0.4697	3.3983	6.56
7233.17	N/A	N/A	0.8988	0.8605	0.44	0.3773	3.7756	7.00
7233.64	N/A	N/A	0.9200	0.9094	0.47	0.4246	4.2002	7.47
7233.80	N/A	N/A	0.9272	0.9130	0.16	0.1419	4.3421	7.63

Primary Spillway: 10.477 cfs @ 7232.73
Secondary Spillway: 16.891 cfs @ 7233.64

PRELIMINARY

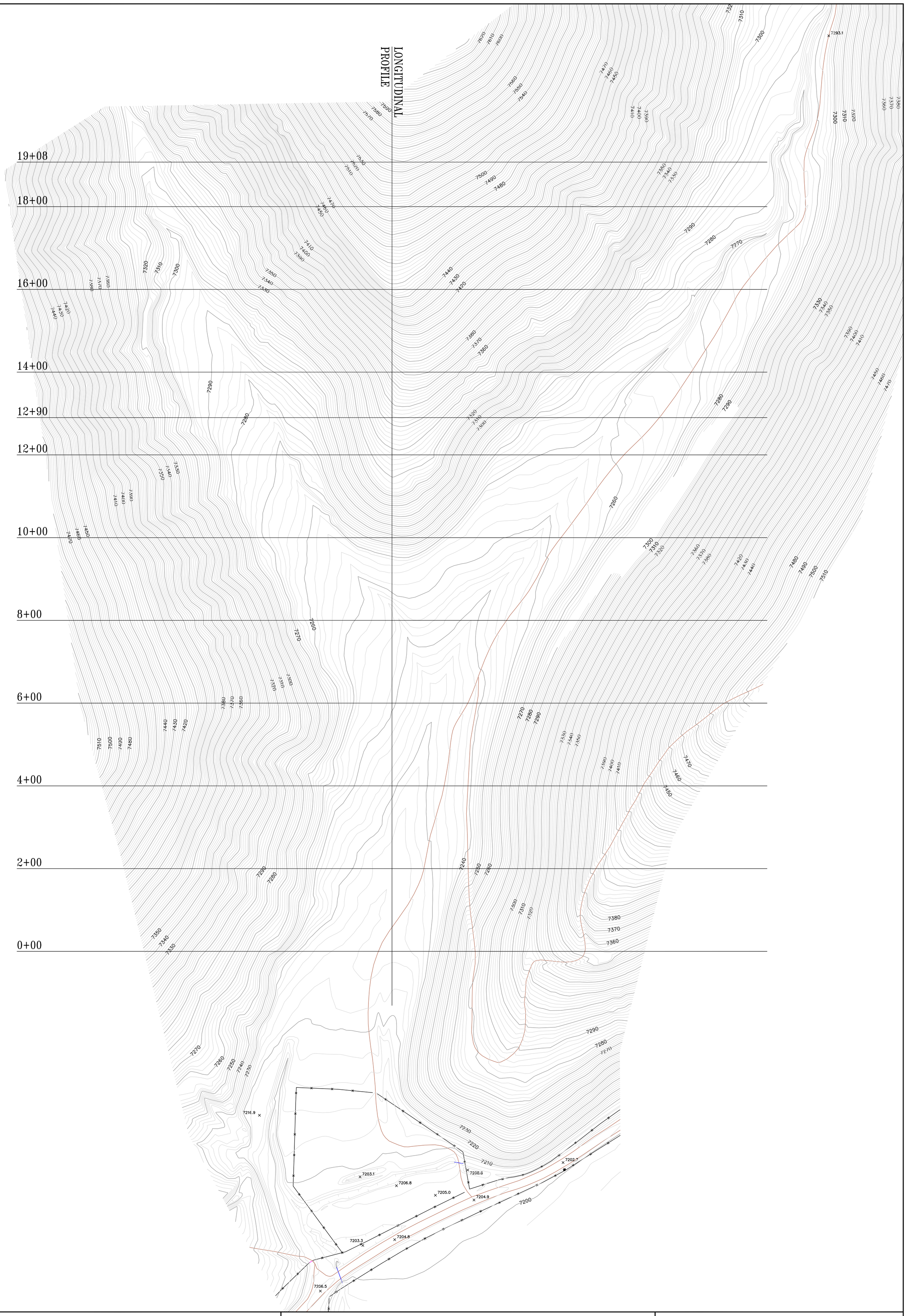
I, _____, a professional engineer, certify that the information on this map is correct to the best of my knowledge and belief.

GCC Energy, LLC
6473 County Road 120
Hesperus, CO 81326
Colorado Mining Permit C-1981-035

King II-007C

Pond Details (As-Built)

Scale:	As Shown	Designed By:	J. McCourt
Date:	12/07/15	Drawn By:	J. McCourt
File Path:	Environmental\King II\Permit Maps		
File Name:	King II-007C Pond Details As-Built		
Plot Date:	12/07/15		
Plot Time:	3:55 pm		



Legend

Post–Mining Profile

Revisions

Date	By	Date	By

GCC Energy

GCC Energy, LLC
6473 County Road 120
Hesperus, CO 81326

King II Mine
OSMRE Mining Permit C-0106A
Colorado Mining Permit C-1981-035

Map King II-OSMRE-011 A

Post-Mining X-Section Plan

Date: 03/12/2017	Drawn By: Tom Bird
Scale: 1" = 100'	Plate #: 1 of 3