



December 18, 2023

Eric Scott
Colorado Division of Reclamation, Mining, and Safety
1313 Sherman St, Rm. 215
Denver, CO 80203

Delivered Via Email

RE: Ewing Gravel Pit, DRMS File M2023-033
Adequacy Response 1

Mr. Scott

The attached letter addresses each adequacy item in your December 11, 2023 letter regarding the Ewing Gravel Pit. Items marked as adequate are omitted. Revised exhibits and maps are attached as well. Feel free to contact my office with any questions.

Regards,

Ben Langenfeld, P.E.
Lewicki & Associates, PLLC
(720) 842-5321, ex. 1
benl@lewicki.biz



General

- 1) (d) *The maps provided in the application show a “permit and affected area” of 157 acres, which corresponds to the property parcel boundary, and a “disturbed area” within that of approximately 116 acres.*

Section 3.1.12(2) of the Construction Materials Rule states: “The boundaries of the affected area will be marked by monuments or other markers that are clearly visible and adequate to delineate such boundaries”. Subsection 3.1.12(2)(b) further states “for Regular 112 Reclamation Operations the area proposed to be disturbed by mining operations for which a Financial Warranty and Performance Warranty have been posted shall be the affected area.”

The 157 acre “permit boundary/affected area” as shown on the provided maps is not able to be marked as required by rule as it crosses and lies within the South Platte River in several areas. The 116 acre “disturbed area” as shown on the provided maps correlates with the DRMS definition of “affected area” given above, and should therefore be marked as required by rule in the field, and identified as such on all provided maps for this application. Please revise all maps (and all application text) as needed for consistency to clearly identify the 157 acre permit boundary, as well as the 116 acre affected area.

Alternately, if the applicant desires, they may also remove all reference to the 157 acre parcel/permit boundary currently shown in the application, and revise the permit boundary to define the 116 acre affected area in the application and on all maps.

During the pre-operation inspection it was noted that the 116 acre affected area boundary was not marked in the field as required. This will need to be completed and verified by DRMS before the permit can be approved.

The affected area has been revised on all maps and within the permit text as well as being marked in the field. Please see the revised Exhibits and Maps. Please see the email dated December 7, 2023 from BURNCO showing the location of the affected area boundary markers as well as the mine sign posting.

Exhibit C – Pre-mining and Mining Maps

- 2) *The application states that significant amounts of overburden, sand, and topsoil will be maintained on-site for reclamation, and that all stockpiles will be placed in Pod 3 outside of the Flood Plain. Please show the locations and expected volumes of all topsoil and overburden/sand stockpiles on the Mining Plan map. Note that the Act/Rule requires that Topsoil and Overburden be segregated and maintained separately for reclamation.*

Map C-2 has been revised with labels for the topsoil and overburden stockpile locations.

- 3) *What is the anticipated volume of the “concealment berm” shown on the mining plan map, and the “barrier berm” shown on the north side of the processing area?*

The berms in question total roughly 80,600 CY of material. The topsoil stripped from Pod 1 area is greater than this amount; thus there is sufficient topsoil for these berms.

- 4) *Please include the affected acreages of the 3 “Pods” on the mining plan map.*

Map C-2 has been revised with labels of the area of the three mining pods.

- 5) *The permitted discharge point referred to in the application in section G-1 is not shown on the Mining Plan map – please correct.*

The permitted discharge point has been added to Map C-2.

Exhibit D – Mining Plan

- 6) *The operator will be required to salvage and stockpile/maintain all topsoil from the processing and stockpile areas for use in reclamation prior to installing these features – please acknowledge.*

The applicant will salvage topsoil from all processing and stockpile areas prior to installing these features.

- 7) *Please clarify if both slurry walls will be installed at the same time prior to commencing mining activity, or if the Pod 3 slurry wall will be installed at a later date.*

Pod 1 and 2 will see their slurry wall installed first. Pod 3 will see its slurry wall installed at a later date.

- 8) *Please correct the text in the first paragraph of page D-2 which states “Excavated material will be conveyed to the center of the site for processing”. The application as provided does not show or discuss any conveyor routes. Please clarify how mined material will be transported to the Processing Area at the north end of Pod 3 as shown on the Mine Plan map. If conveyors will be used, they will need to be shown on the Mine Plan Map.*

The text on page D-2 has been corrected and Map C-2 updated to show a typical conveyor route from the mining pods to the process area.

- 9) *Mining will begin in Pod 1 proceeding west to east as depicted on the Mining Plan Map. The application states that the active mining face will not exceed 500' in length, and that the flood control inlet/outlet structures will be installed when mining reaches within 300' of the river bank.*

Therefore, site specific designs, specifications, installation costs, as well as US Army Corps of Engineers approval for the construction of these flood control features, will need to be provided prior to commencing excavation activity in Pod 1 – please acknowledge/provide.

A typical design for the flood control structures are included on Map F-2. These structures are designed to avoid any construction within Waters of the United States and are therefore outside of the jurisdiction of the US Army Corps of Engineers (USACE). The applicant does acknowledge that if any fill activities take place onsite that are within the jurisdiction of the USACE, appropriate permit approvals will be secured before fill activities take place.

Exhibit E – Reclamation Plan

- 10) *What is the basis for the estimated amounts of available sand to be utilized as backfill (to supplement the deficit in available overburden needed to reclaim pit slopes) and where will the sand stockpiles be located?*

See added language in Exhibit E, Section 1.

- 11) *Approximately how many C.Y. of sand/overburden is projected to be required to backfill the freshwater and settling ponds in the process area?*

Backfill volumes for the process area ponds have been added to Map F-1.

- 12) *Please provide a site specific weed control plan for the site during mining and reclamation activities. The plan should include at a minimum what species are expected and how they will be controlled/eradicated.*

A list of weed species identified in Weld County for eradication and/or suppression has been added to Exhibit E, Section 8.

Exhibit F - Reclamation Plan Map

- 13) *How many acres will be reclaimed as rangeland surrounding Pods 1&2, and Pod 3?*

Rangeland reclamation areas around each pod are shown on the revised Map F-1.

- 14) *The Reclamation Plan Map shows the Pod 3 slurry wall extending around the NE corner of the processing area (this area is excluded on the Mining Plan Map) please correct for consistency.*

The slurry wall for Pod 3 has been corrected on Map F-1.

Exhibit G – Water Information

- 15) *The well locations identified in Table G-4 are very difficult to find/identify, or are not shown on Figure C-1. Please provide another map to clearly show the wells listed, as well as the XCEL wells in Table G-5, and the 4 piezometers listed in Table G-6.*

Please the Groundwater Monitoring Map in Appendix G-1 which has the location of the requested wells.

- 16) *DRMS acknowledges the applicants email to SEO providing them the groundwater modeling data, and a request to specifically identify any remaining concerns, as well as the SEO response stating that they had no specific concerns at this time. DRMS will therefore consider SEO issues addressed for the purposes of this review. However, if concerns with groundwater mounding, shadowing, or return flow timing impacts are identified in the future as a result of mining activity, DRMS will require design and implementation of corrective action(s) as needed within 30 days – please acknowledge.*

The applicant acknowledges that if concerns regarding groundwater mounding, shadowing, or return flow timing impacts are identified as a result of mining activity a corrective action plan will be designed and implemented as needed.

- 17) *Although, as a whole, Exhibit G contains much of the required material, the information presented in Exhibit G, Appendix G-2 Groundwater Monitoring Plan is incomplete with respect to the requirements of the DRMS Groundwater Monitoring: Sampling and Analysis Plan Guidance Construction Materials and Hard Rock Site document dated September 2023 (attached to this letter for reference).*

As stated in the introduction to the guidance document; “the remaining sections of this document are organized under the same headings that the Division would expect to see in a typical groundwater sampling and analysis plan.” Please resubmit the available information in accordance with the guidance document referenced above, and provide any required information missing at this time (such as well, construction diagrams for existing wells, surveyed well elevations, groundwater elevation measurements and contour data, etc.) If you feel that a specific requirement listed in the guidance document does not apply to the site, please provide suitable justification for the omission. Additional information, such as baseline water quality data and comparison of this data to the appropriate benchmarks, may also be presented for Division review if available.

DRMS also notes at this time that the groundwater flow direction provided (without any supporting data) appears suspect, and that the majority of the area to be mined lies outside of the area defined by the 3 existing baseline monitoring points shown. The proposed POC monitoring location(s) will also need to be identified, so special attention should be paid to these items.

Appendix G-2 has been reformatted and expanded to comply with the September 2023 CDRMS memo. The POC monitoring location has been identified in Appendix G-2.

Exhibit J - Vegetation

- 18) *The applicant must commit to completing a wetland delineation study for the area shown as “potential hydrophytic vegetation” within the proposed affected area as shown on page 7 of 9 in exhibit J-1 prior to installation of the slurry wall or topsoil/overburden stripping activity in that area.*

Wetland delineations will take place within the affected area as necessary prior to operations.

Exhibit L – Reclamation Costs

- 19) *DRMS will evaluate the reclamation bond calculation when the other adequacy issues have been resolved. However, DRMS has noted that no supporting information for the provided slurry wall costs has been provided, and several items are missing from the provided estimate including: backfill of freshwater and settling ponds to approximate original grade; re-sloping of interior pit walls to 3:1 or flatter; installation of flood control inlet/outlet structures; and revegetation of rangeland acres surrounding the final reservoirs and the processing area. A significantly more detailed reclamation estimate broken down by task will need to be provided.*

The reclamation bond estimate is based on the cost required to construct the slurry wall prior to mining Pod 1. Because the slurry wall is so large, its cost is substantially more than it would be to backfill the processing area ponds at the end of the mine life (\$1.4 million vs. \$285,000). Since reclamation will be concurrent with mining, there is no point where backfilling, grading, and topsoiling of the site will be more expensive than installation of the first slurry wall.

The reclamation cost estimate in Exhibit L lists each task to be conducted, the quantity of work to be conducted in the task, and the total cost for that task.

Additional Information

Proof of publication in a local paper is attached.

Other Agency Review

The applicant has reviewed the comment letters from Colo. Division of Water Resources and Colo. Parks and Wildlife. A copy of the groundwater model found in the application was provided to CDWR during the public comments period, and CDWR considers its concerns addressed. CPW comments are quoted and responded to below.

CPW Comments

1.1.

Construction Timing

If prairie dogs are present or become present within any of the project boundaries and initial construction occurs from March 15 to October 31, then please complete a Burrowing Owl survey per CPW recommendations.

CPW recommends conducting raptor surveys prior to construction. If initial construction is slated for the spring and summer, please incorporate active raptor nest buffers and avoidance periods. All migratory birds are protected under the Migratory Bird Treaty Act, and removal or disturbance of any migratory bird nest would require consultation with CPW and US Fish and Wildlife Service (USFWS) prior to disturbance.

Mule Deer Severe Winter Range, Mule Deer Winter Concentration Areas and Mule Deer Migration Corridor are all mapped HPHs within the project boundaries. Because of this, CPW recommends that construction not occur in winter and spring and that no human activities be authorized from December 1 to April 30 during the construction phase. CPW also recommends avoiding the riparian corridor to the maximum extent possible to keep the migration corridor along the river as open as possible.

The applicant will conduct raptor surveys prior to operations commencing. Operations will not take place within the riparian corridor.

Fencing

CPW is concerned for the safety of Mule deer and White-tailed deer in the area for the proposed project. CPW recommends that if fencing (project perimeter or internal) is erected, either during or after the project, it should be the type that would allow the free passage of wildlife. Fencing plans should avoid the use of woven wire-type fences that will trap or prevent the movement of wildlife. CPW recommends using three or four-strand smooth-wire fencing with a bottom strand height of 17 inches above ground level and a maximum top strand height of 42 inches above ground level, along with the installation of double stays between posts.

If additional fencing is installed at the Ewing Gravel Pit, wildlife friendly fencing will be used.

Noxious Weeds and Native Re-seeding

Also of importance to CPW is the revegetation of disturbed soils and the control of noxious weed species through the development of a noxious weed management plan prior to initiating construction activities. The revegetation of disturbed areas and control of invasive weed species

are important components of the project and it is critically important that the site be restored back to the native plant community that currently exists on site. CPW prefers that native vegetation be retained on-site during the operational lifespan of the project, both as potential habitat for wildlife and to ensure successful reclamation of the project area, as noxious weeds could spread to adjacent habitats outside the project area.

A weed control and revegetation plan are incorporated into this permit and will be followed by the applicant.

Tree Replacement

It does not appear there is any specific information within the application plans of direct impacts to trees and shrubs from construction activities. If tree and/or shrub removal will occur, CPW recommends trees and shrubs be replaced at a 3:1 ratio. If onsite mitigation of trees and shrubs cannot be achieved onsite, CPW would like to coordinate off-site mitigation for those losses.

Tree removal is not anticipated during operations as the mining plan footprint is within the open agricultural fields on the property.

Wildlife Escape Ramps

During open pit or open trench mining operations, CPW recommends backfilling escape ramps in areas where steep slopes occur. Escape ramps will allow wildlife to safely exit an open pit or trench if they become entrapped.

During mining operations, pit ramps will be in place.

Retention ponds

Ponds created by reclamation efforts could potentially have significant value to wildlife. To maximize this benefit, CPW recommends that ponds be designed to include irregular shorelines and one or more islands to provide cover, shelter, and nesting areas for migratory birds. Islands should be at least 15' x 25' in size for every two surface acres of water in the pond. Shoreline and island slopes should be graded to a ratio of 4 horizontal feet to every 1 vertical foot of distance, with some areas having slopes no steeper than 8 horizontal feet to every 1 vertical foot of distance. Such shallow areas will allow for the establishment of a variety of aquatic vegetation and invertebrate prey for waterfowl and shorebirds.

Shorelines should be re-vegetated with native aquatic vegetation.

The post-mine land use at Ewing will be water storage, and as such the shorelines and slopes will be installed in a manner that maximizes water storage. The current reclamation plan does not anticipate sufficient overburden to backfill islands, peninsulas, or varying slopes as CPW describes. If excess backfill material is available, the operator will use it to create shallower sections of shoreline during reclamation, but cannot commit to their installation at this time.

Aquatic Species

There are sensitive aquatic native species (fish and amphibians) located within the South Platte River. CPW recommends no surface occupancy and no ground disturbance (year-round) within 500 feet of the ordinary high water mark of the South Platte River and to implement appropriate stormwater BMPs.

Stormwater BMPs will be implemented in accordance with the site's CDPHE discharge permit.

Mule Deer Severe Winter Range HPH

Mule Deer Severe Winter Ranges are defined as that part of the overall winter range where 90% of the individuals are located when the annual snowpack is at its maximum and/or temperatures are at a minimum in the two worst winters out of ten. Therefore, CPW recommends no initial ground disturbance in these polygons from December 1 to April 30. CPW also recommends avoiding the riparian corridor to the maximum extent possible to keep the migration corridor along the river as open as possible. Below is a mapped HPH layer for the Severe Winter Range, Winter Concentration and Migration Corridor for Mule Deer. These areas are depicted by the polygons with pink-striped areas.

The Ewing property has been fenced in agricultural site for decades. Fencing on the site separates the river riparian corridor from the agricultural fields. Mining operations will take place within the agricultural field, and away from the riparian corridor. Ground disturbance will occur at any time of the year as operations require.

Attachments

Map C-1 Baseline Map

Map C-2 Mining Map

Map C-3 Cross Sections

Map F-1 Reclamation Map

Map F-2 Flow Structures

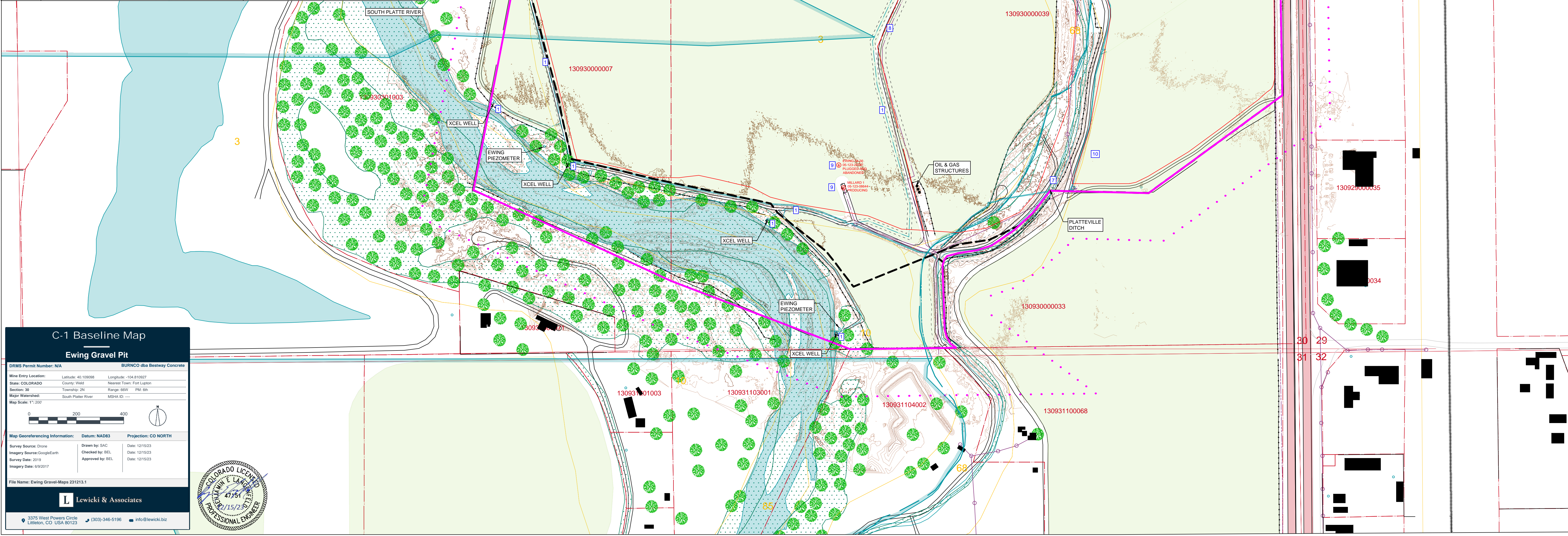
Map G-1 Drainage Map

Revised Exhibits

Proof of publication in local newspaper.

PROPERTY OWNERS						
PARCEL NUMBER	ACCOUNT NUMBER	NAME	ADDRESS	CITY	STATE	ZIP
13093000007	R5270086	TRICYCLE LANE TEXAS LLC	10100 DALLAS ST	HENDERSON	CO	80640
13093000039	R1021202	TRICYCLE LANE TEXAS LLC	10100 DALLAS ST	HENDERSON	CO	80640
130930200001	R6783788	CITY OF AURORA	15151 E ALAMEDA PKWY STE 3600	AURORA	CO	80012
130930301002	R6784349	LG EVERIST INC	350 S MAIN AVE STE 400	SIOUX FALLS	SD	57104
130930000068	R0025887	CITY OF AURORA	15151 E ALAMEDA PKWY STE 3600	AURORA	CO	80012
130930000038	R1021102	CITY OF AURORA	15151 E ALAMEDA PKWY STE 3600	AURORA	CO	80012
130930000048	R5270886	BACHOFER ROSS	7525 US HWY 85	FORT LUPTON	CO	80621
130930100036	R7435698	OTTESEN BETTY J & MARK C	PO BOX 461	SALIDA	CO	81201
130930100035	R7435498	OTTESEN BETTY J & MARK C	PO BOX 461	SALIDA	CO	81201
130930100037	R7435798	GAYTON ROCIO & MARTINEZ HUMBERTO CALDERON	7493 US HWY 85	FORT LUPTON	CO	80621
130923000067	R5269086	WELD-85	7504 US HWY 85	FORT LUPTON	CO	80550
130930000033	R5270686	SAKATA LAND CO	PO BOX 508	BRIGHTON	CO	80601
130929000035	R5267286	GEN III ENTERPRISES LLC	1195 TURQUOISE DR	LONGMONT	CO	80504
130929000034	R5267186	E & J ROCKY MOUNTAIN PROPERTIES LLC	12608 WATERSIDE LN	LONGMONT	CO	80504
130931100068	R0007287	SAKATA LAND CO	PO BOX 508	BRIGHTON	CO	80601
130931104002	M0186195	SOUTH PLATTE VALLEY HISTORICAL SOCIETY	PO BOX 633	FORT LUPTON	CO	80621
130931103001	R6784351	CITY OF FORT LUPTON	130 S MCKINLEY AVE	FORT LUPTON	CO	80621
130931201003	R6784339	STRANGE BRONN & RENEE	12335 COUNTY RD 14 1/2	FORT LUPTON	CO	80621
130930000071	R0015992	RANKIN PENNY J	12331 COUNTY RD 14 1/2	FORT LUPTON	CO	80621
130930301001	R6784348	CITY OF AURORA	15151 E ALAMEDA PKWY STE 3600	AURORA	CO	80012
130930301003	R6784350	CITY OF FORT LUPTON	130 S MCKINLEY AVE	FORT LUPTON	CO	80621

STRUCTURE OWNERS		
NUMBER	STRUCTURE	OWNER
1	WELLS, PUMP HOUSE, WATER PIPELINES, AND RELATED STRUCTURES	ROCKY MOUNTAIN ENERGY CENTER LLC (XCEL ENERGY)
2	RESIDENCE, DRIVEWAY, FENCES, SHEDS	BACHOFER ROSS
3	RESIDENCE, LIVESTOCK BUILDINGS, FENCES, DRIVEWAY, SHEDS, WATER WELL	MARTINEZ, HUMBERTO C & GAYTON, ROCIO
4	AGRICULTURE BUILDINGS, DRIVEWAY, FENCES	WELD-85
5	US HIGHWAY 85 AND RELATED STRUCTURES	COLORADO DEPARTMENT OF TRANSPORTATION
6	OVERHEAD POWER LINE	UNITED POWER
7	PLATTEVILLE DITCH	PLATTEVILLE IRRIGATING AND MILLING COMPANY
8	GAS PIPE LINES	PUBLIC SERVICE COMPANY OF COLORADO (XCEL ENERGY)
9	GAS PIPE LINES & WELLS	KP KAUFFMAN COMPANY INC
10	WATER WELLS & RELATED STRUCTURES	L.G. EVERIST INC (TRICYCLE LANE TEXAS, LLC)



C-1 Baseline Map

Ewing Gravel Pit

DRMS Permit Number: N/A

BURNCO dba Bestway Concrete

Mine Entry Location: Latitude: 40.109098 Longitude: -104.810207

State: COLORADO County: Weld Nearest Town: Fort Lupton

Section: 30 Township: 2N Range: 68W PM: 6th

Map Scale: 1" = 200'

Map Scale: 1" = 200'

Map Georeferencing Information: Datum: NAD83 Projection: CO NORTH

Survey Source: Drone

Drawn by: SAC

Date: 12/15/23

Imagery Source: GoogleEarth

Checked by: BEL

Date: 12/15/23

Survey Date: 2019

Approved by: BEL

Date: 12/15/23

Imagery Date: 6/9/2017

File Name: Ewing Gravel-Maps 231213.1

L Lewicki & Associates

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Littleton, CO USA 80123

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LEGEND

BUILDINGS AND RELATED STRUCTURES

Building

Well (other than water)

Tanks

Fence

Easements

LAND SURVEYS

Public Land Survey System

Range or Township line

Section line

Section numbers

Mining claim or property boundary

Mining claim or property monument

ROADS AND RELATED FEATURES

Highway

Light duty road, paved

Light duty road, gravel

Railroad

RIVERS, LAKES, SHORELINES, AND CANALS

Perennial stream/ditch

Perennial river

Perennial lake/pond

Waterwell

Floodplain & Floodway

Pipeline

VEGETATION

Agricultural Fields

NWI Wetlands

Existing Trees

Soils (NRCS)

TRANSMISSION LINES AND PIPELINES

Power transmission line, pole, tower

Power transmission line, buried

Telephone/data line, above ground

Telephone/data line, buried

Pipeline (non-water), buried

MINING FEATURES

DRMS Permit Boundary

200' Offset of DRMS Permit Boundary

Affected Area Boundary

BASELINE CONTOURS

Index

Approximate of Indefinite

Intermediate

Approximate of Indefinite

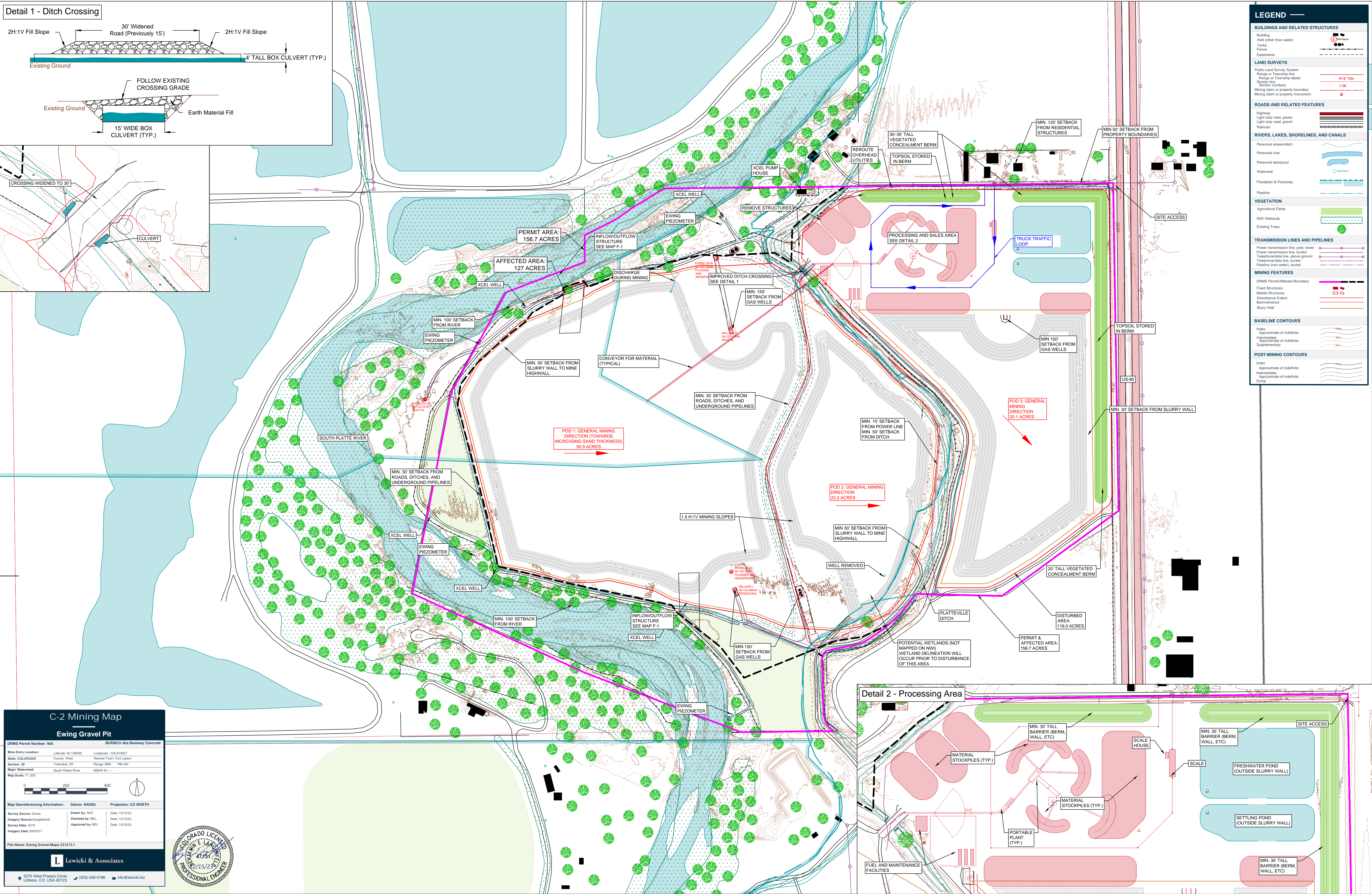
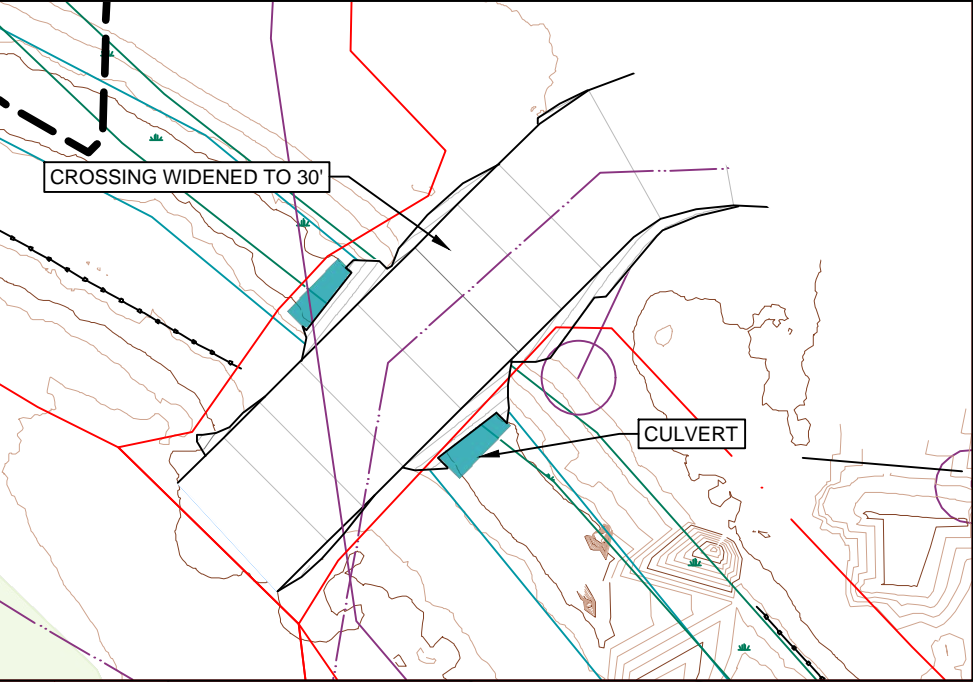
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
Detail 1 - Ditch Crossing

The drawing illustrates the construction of a ditch crossing over a 15' wide box culvert. The plan view (top) shows a 30' wide road (previously 15') with 2H:1V fill slopes on both sides. The existing ground is shown as a blue line, and the culvert is a grey rectangle. The cross-section view (bottom) shows the culvert with a 15' wide opening. The existing ground is shown as a blue line, and the culvert is a grey rectangle. The fill material is labeled 'Earth Material Fill'.

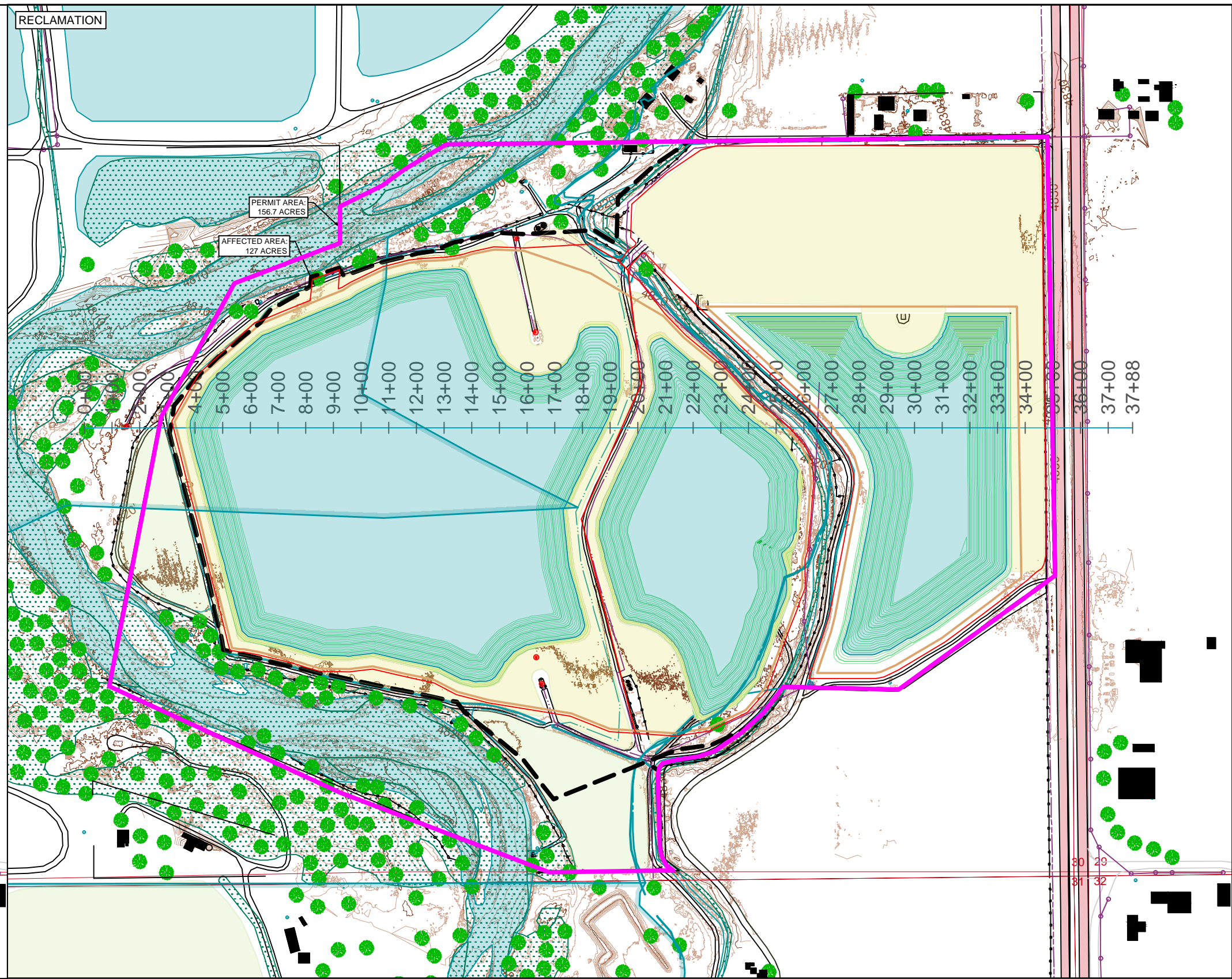
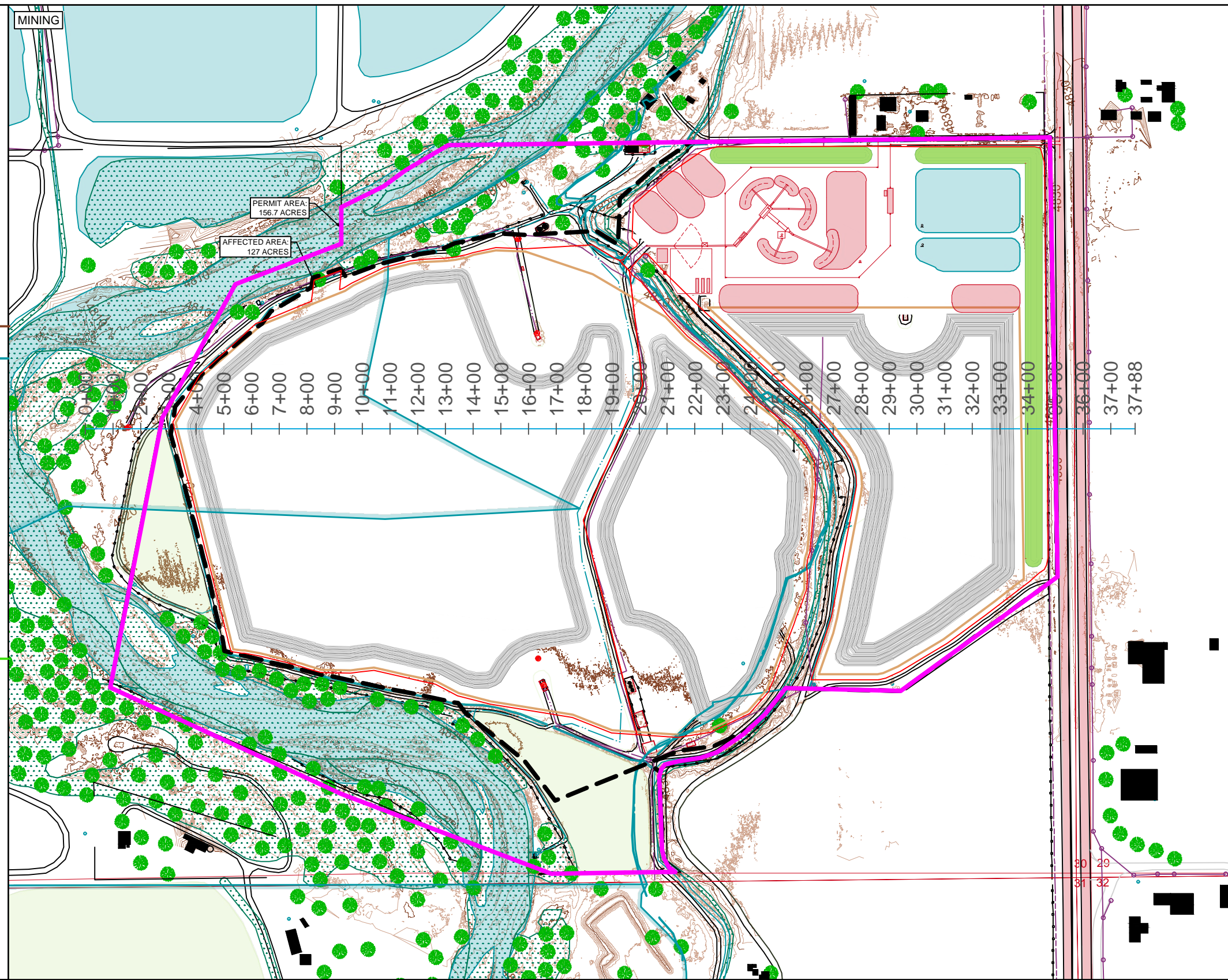
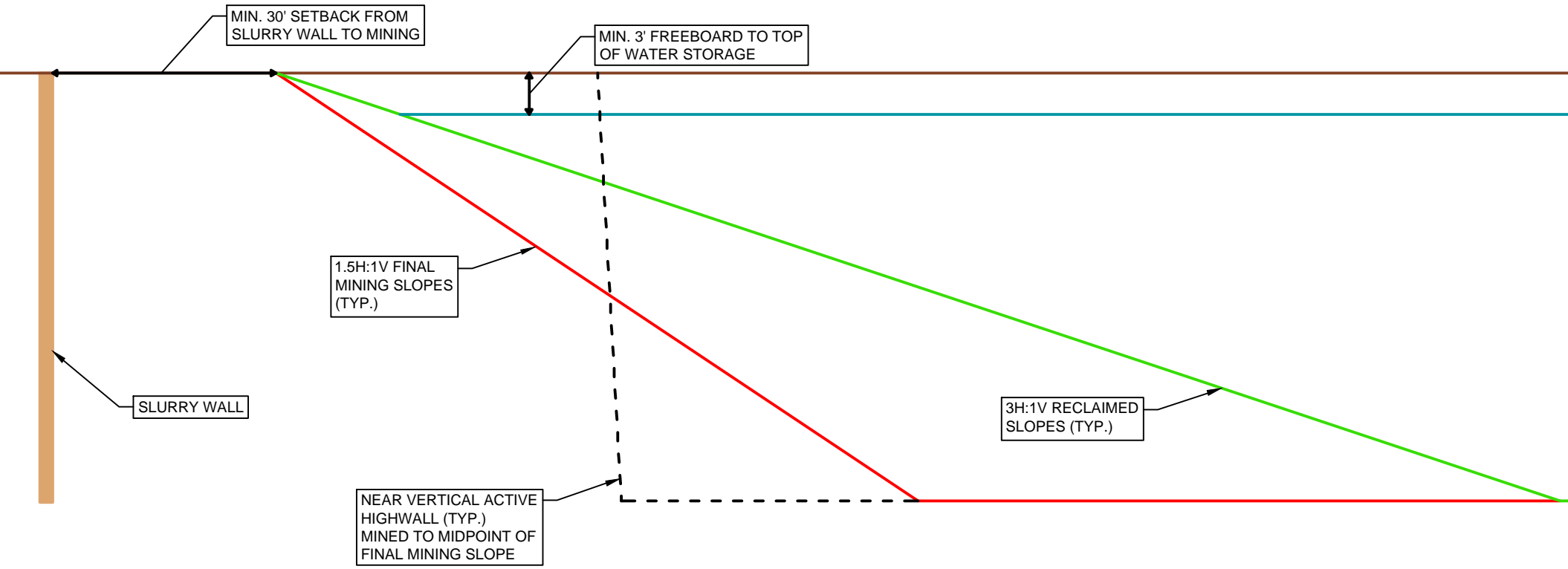
Labels in the plan view include: 2H:1V Fill Slope, 30' Widened Road (Previously 15'), 2H:1V Fill Slope, Existing Ground, and 4' TALL BOX CULVERT (TYP.).

Labels in the cross-section view include: Existing Ground, FOLLOW EXISTING CROSSING GRADE, Earth Material Fill, and 15' WIDE BOX CULVERT (TYP.).

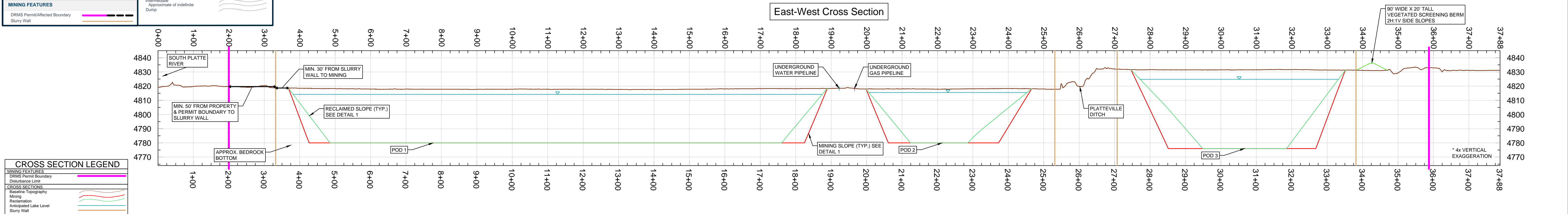


<h1 style="margin: 0;">C-2 Mining Map</h1> <h2 style="margin: 0;">Ewing Gravel Pit</h2>			
DRMS Permit Number: N/A		BURNO dba Bestway Concrete	
Mine Entry Location:		Latitude: 40.810098 Longitude: -104.810927	
State: COLORADO		County: Weld Nearest Town: Fort Lupton	
Section: 30 Township: 2N		Range: 66W PM: 6th	
Major Watershed: South Platte River		MSHA ID: —	
Map Scale: 1" = 200'			
			
Map Georeferencing Information: Datum: NAD83 Projection: CO NORTH			
Survey Source: Done		Drawn by: SAC	
Imagery Source: GoogleEarth		Checked by: BEL	
Survey Date: 2019		Date: 12/15/23	
Imagery Date: 6/9/2017		Approved by: BEL	
Date: 12/15/23		Date: 12/15/23	
File Name: Ewing-Gravel-Maps 231213.1			
<div style="display: inline-block; border: 2px solid black; padding: 10px; margin: 0 10px; font-size: 2em; font-weight: bold; letter-spacing: -2px;">L</div> <div style="display: inline-block;"> Lewicki & Associates <small>Professional Surveyors</small> </div>			
3375 West Powers Circle Littleton, CO USA 80123		(303)-346-5196 info@lewicki.biz	

DETAIL 1 - TYPICAL SLOPES



LEGEND	
BUILDINGS AND RELATED STRUCTURES	VEGETATION
Building	Agricultural Field
Well (other than water)	NWI Wetlands
Tanks	
Fence	
ROADS AND RELATED FEATURES	TRANSMISSION LINES AND PIPELINES
Highway	Power transmission line, pole, tower
Light duty road, gravel	Power transmission line, buried
	Telephone/data line, above ground
	Telephone/data line, buried
	Pipeline (non-water), buried
RIVERS, LAKES, SHORELINES, AND CANALS	BASELINE CONTOURS
Perennial stream/ditch	Index
Perennial river	Approximate of indefinite
Perennial lake/pond	Intermediate
Waterwell	Approximate of indefinite
Drainage Basin	Supplementary
Floodplain & Floodway	
Pipeline	POST-MINING CONTOURS
MINING FEATURES	Index
DRMS Permit/Affected Boundary	Approximate of indefinite
Slurry Wall	Intermediate
	Approximate of indefinite
	Dump



CROSS SECTION LEGEND

MINING FEATURES
DRMS Permit Boundary
Disturbance Limit
CROSS SECTIONS
Baseline Topography
Mining
Reclamation
Anticipated Lake Level
Slurry Wall

C-3 Cross Sections

Ewing Gravel Pit

DRMS Permit Number: N/A BURSCO dba Bestway Concrete

Mine Entry Location: Latitude: 40.109088 Longitude: -104.810927

State: COLORADO County: Weld Nearest Town: Fort Lupton

Section: 30 Township: 2N Range: 66W PM: 6th

Major Watershed: South Platte River MSHA ID: ---

Map Scale: 1" = 400'

Map Georeferencing Information: Datum: NAD83 Projection: CO NORTH

Survey Source: Drone Drawn by: SAC Date: 12/15/23

Imagery Source: GoogleEarth Checked by: BEL Date: 12/15/23

Survey Date: 2019 Approved by: BEL Date: 12/15/23

Imagery Date: 6/9/2017

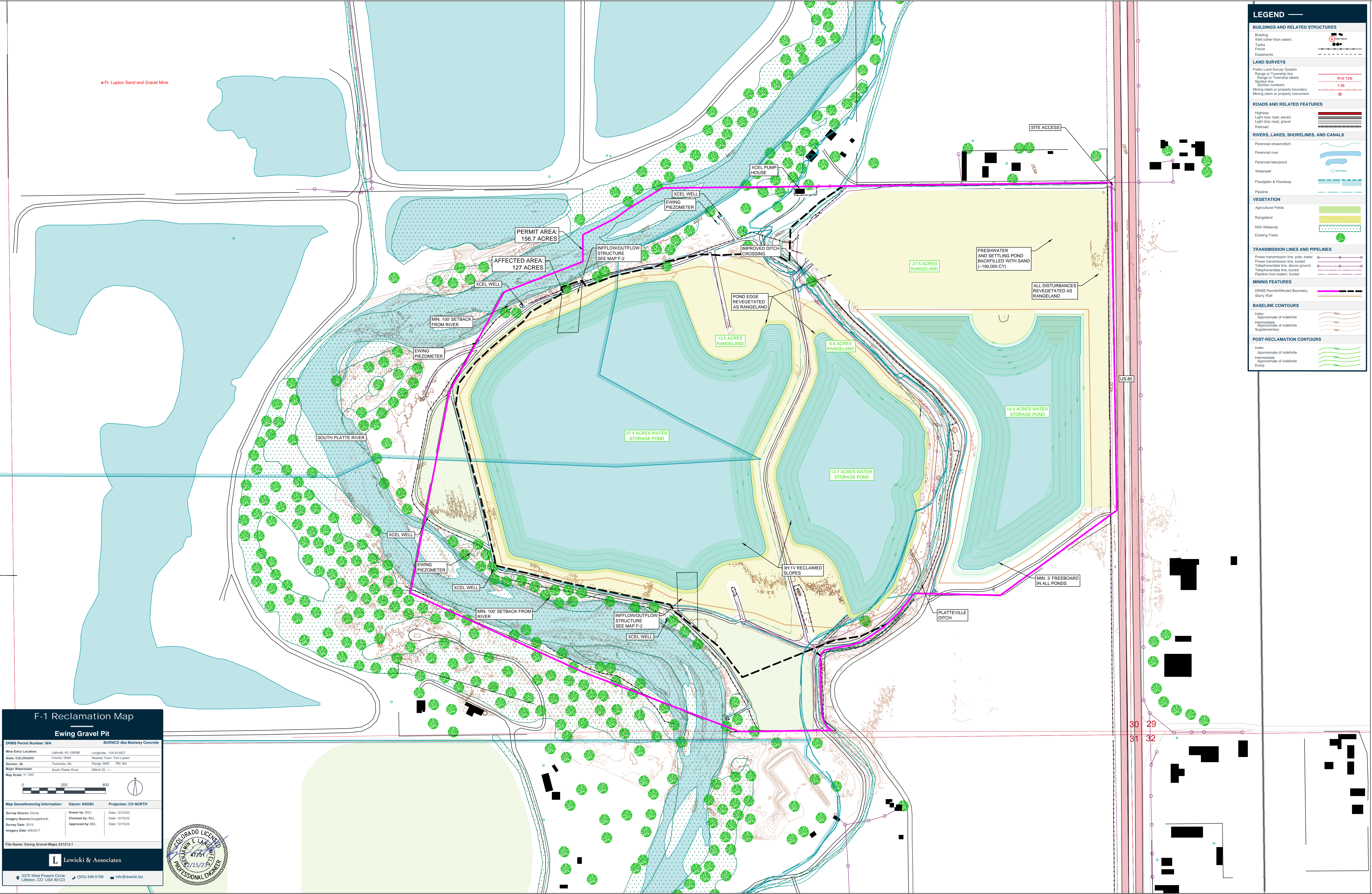
File Name: Ewing Gravel-Maps 231213.1

Lewicki & Associates

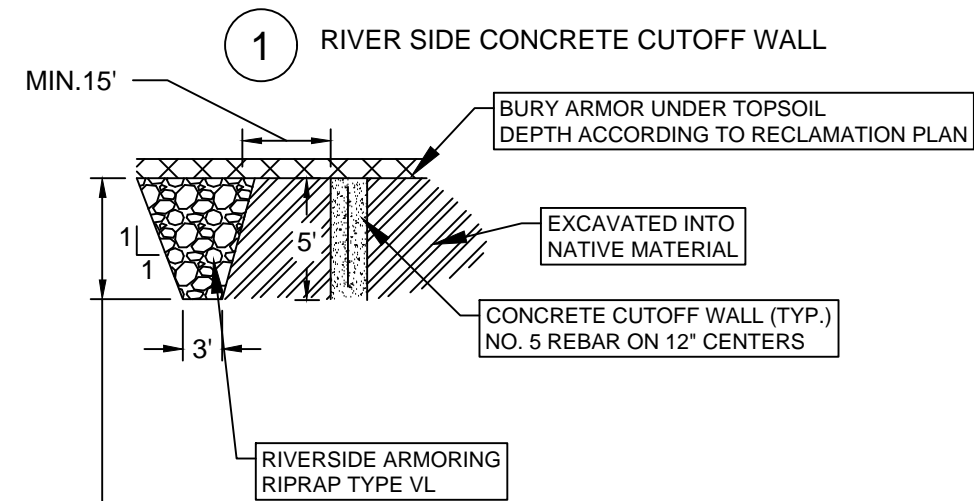
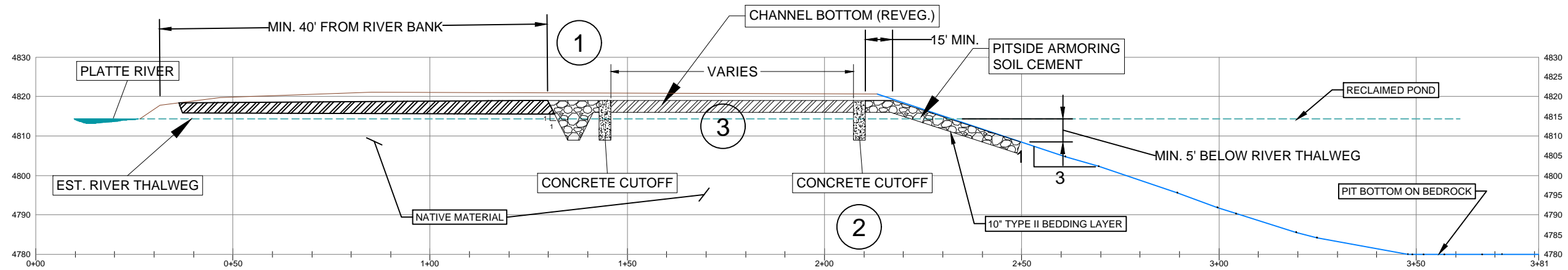
3375 West Powers Circle
Littleton, CO USA 80123 (303)-346-5196 info@lewicki.biz

COLORADO LICENSED
47551
12/15/23
PROFESSIONAL ENGINEER

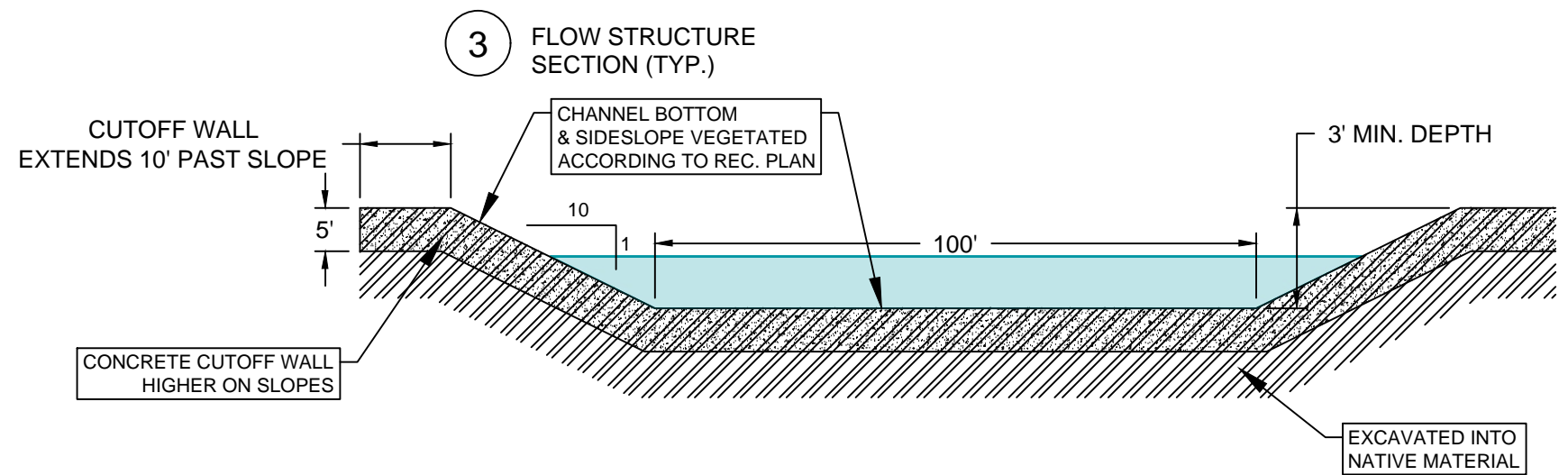
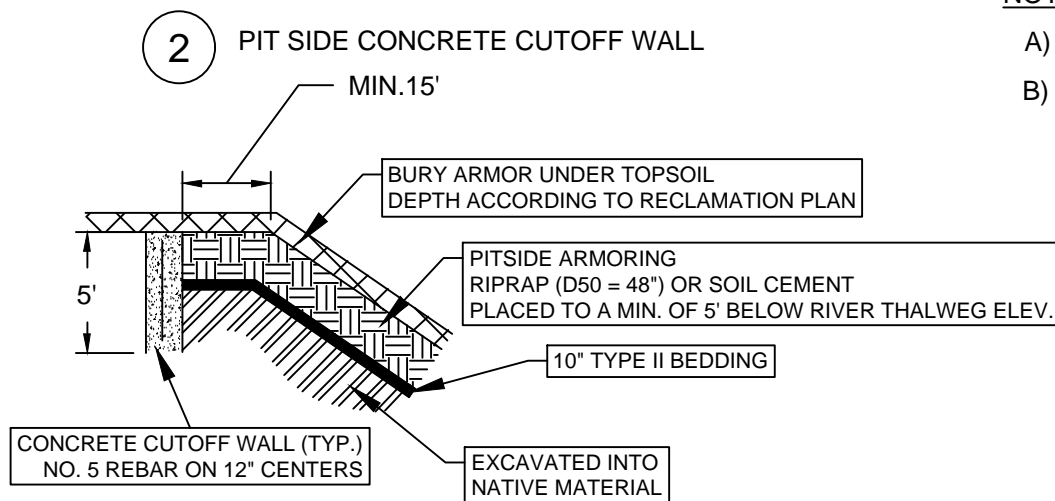




FLOW STRUCTURE TYPICAL PROFILE



MIN. 5' DEEPER
THAN RIVER THALWEG



NOTES:

- CONCRETE CUTOFF WALL TO BE INSTALLED IN AN EXCAVATED TRENCH.
- EXTEND RIPRAP ARMORING AND CUTOFF WALLS A MINIMUM OF 10' BEYOND THE TOP OF SPILLWAY SLOPES ON BOTH ENDS.

Mile High Flood Control District
Riprap Sizing - River

Assuming channel is running full up to 1-ft of freeboard.

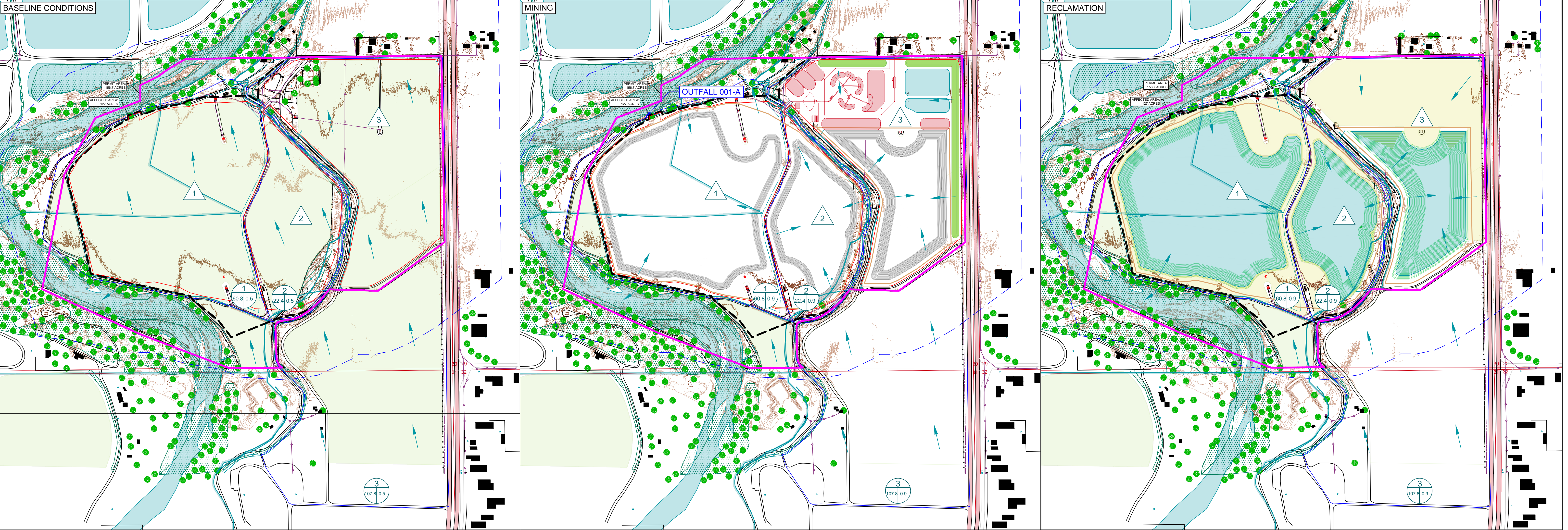
$$\text{Mean Channel Velocity: } V = 7.09 \frac{\text{ft}}{\text{s}}$$

$$\text{Channel Slope: } S = 0.02$$

$$\text{Mean Rock Size: } d_{50} = \left(\frac{V \cdot S^{0.17}}{4.5 \frac{\text{ft}}{\text{s}} + (2.5 - 1)^{0.66}} \right)^2 \text{ ft} = 4.613 \text{ in}$$

Riprap Type VL (d50 = 6 inches)





LEGEND

BUILDINGS AND RELATED STRUCTURES
Building
Well (other than water)
Tanks
Fence

ROADS AND RELATED FEATURES
Highway
Light duty road, gravel

RIVERS, LAKES, SHORELINES, AND CANALS
Perennial stream/ditch
Perennial river
Perennial lakel pond
Waterwell
Drainage Basin
Floodplain & Floodway
Drainage Direction
Pipeline

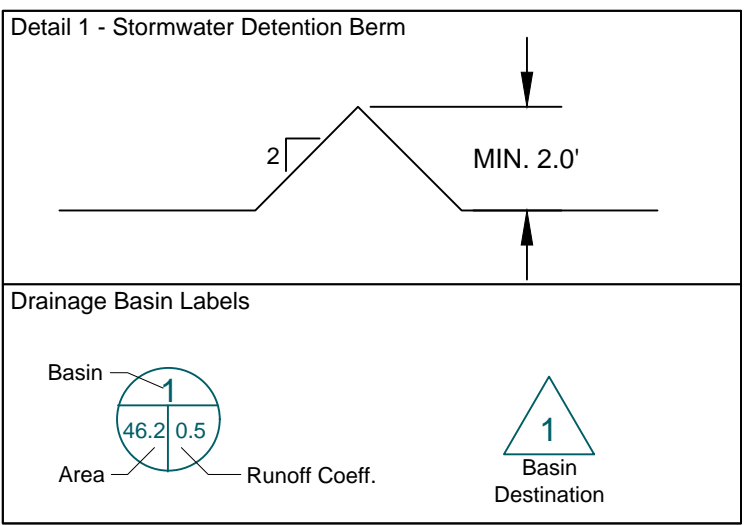
MINING FEATURES
DRMS Permit Boundary
Slurry Wall

VEGETATION
Woodland
NWVI Wetlands

TRANSMISSION LINES AND PIPELINES
Power transmission line, pole; tower
Power transmission line, buried
Telephone/data line, above ground
Telephone/data line, buried
Pipeline (non-water), buried

BASELINE CONTOURS
Index
Approximate of indefinite
Intermediate
Approximate of indefinite
Supplementary

POST-MINING CONTOURS
Index
Approximate of indefinite
Intermediate
Approximate of indefinite
Dump



Drainage Basin Runoff and Detention						
Basin	Area (ac)	WQCV (ac-ft)	Baseline 100-YR (ac-ft)	Mining/Rec 100-YR (ac-ft)	Detention System	Detention Capacity
1	60.8	0.0	6.1	11.0	Pod 1	191.5
2	22.4	0.0	2.3	4.2	Pod 2	71.6
3	107.8	0.0	10.8	19.4	Pod 3	101.5

**Detention capacity is the total storage volume within active pits, above reclaimed lakes, and/or within stormwater berms for a given site condition.

G-1 Drainage Map
Ewing Gravel Pit

DRMS Permit Number: N/A

BURNCO dba Bestway Concrete

Mine Entry Location: Latitude: 40.109098 Longitude: -104.810027

State: COLORADO County: Weld Nearest Town: Fort Lupton

Section: 30 Township: 2N Range: 66W PM: 6th

Major Watershed: South Platte River MSHA ID: ---

Map Scale: 1"=400'

0 400 800

Map Georeferencing Information: Datum: NAD83 Projection: CO NORTH

Survey Source: Drone

Drawn by: SAC

Date: 12/15/23

Imagery Source: GoogleEarth

Checked by: BEL

Date: 12/15/23

Survey Date: 2019

Approved by: BEL

Date: 12/15/23

Imagery Date: 6/5/2017

File Name: Ewing Gravel-Maps 231213.1

Lewicki & Associates

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EXHIBIT C

PREMINE AND MINE PLAN MAPS

Map C-1 Current Conditions

Map C-2 Mining Plan

Map C-3 Cross Sections

1. General Mining Plan

The property boundary has been surveyed on site and the permit area will be surveyed prior to any additional acreage to the site disturbance. Map C-2 shows the mining plan. The mine will affect an area of 127 acres. The primary commodity to be mined will be sand and gravel for use in construction materials. These construction materials may include crushed rock, sand, washed rock, concrete, and asphalt. Fill dirt may incidentally be produced as well. The mine will be accessed from the existing connection to US-85. This access road will require improvements to be able to support mine traffic. These road improvements will be completed prior to shipment of any construction materials from the site. Slurry walls will be installed surrounding Pod 1 and 2, and another surrounding Pod 3. These walls will stop groundwater from infiltrating into the pits, and facilitate water storage in the reclaimed pits. Slurry wall construction will be completed prior to mining in any given pod.

The sand and gravel deposit is an average 25 to 45-foot thickness within the alluvial deposit surrounding the South Platte. The deposit is overlain by an average of two feet of topsoil and two feet of overburden. It is split into two terraces: a lower terrace adjacent to the Platte River and an upper terrace along US-85. The lower terrace is made up of the primary sand and gravel layer overlain with topsoil and overburden. An additional sand layer overlies the gravel deposit, starting midway through the lower terrace and increasing in depth to the southeast. It reaches an average thickness of 28 feet in the easternmost mining area, Pod 3, on the upper terrace. The bedrock is an olive-gray claystone and siltstone that exists approximately 30 to 40 feet below the surface.

Mining will occur in three separate pods, starting on the lower terrace and proceeding east: Pod 1, Pod 2, then Pod 3. The processing area in the northern part of Pod 3 will be mined last. Mining and reclamation will occur concurrently as mining progresses in order to minimize the total disturbance. There is sufficient topsoil and overburden on site to successfully reclaim the site to its final condition as water storage ponds surrounded by rangeland. Reclamation will include backfilling and regrading of the site, topsoiling, and revegetation. The slurry walls installed prior to mining will be retained.

All mining will continue to the bottom of the gravel deposit with 1.5H:1V final mining slopes along the perimeter. The active highwall will be at a near vertical slope, and will progress to the halfway point of the final mining slope. This allows for the remaining highwall to be knocked down via dozer to create the completed mining slope. Slopes will then be backfilled with sand or overburden to the reclaimed 3H:1V slopes. Refer to the cross sections on Map C-3 for the various slope details throughout mining.

Dozers and scrapers will be used to strip topsoil and overburden from the areas to be mined to be stored in the designated stockpiles. Any stockpile to be in place longer than 90 days will be

seeded to prevent erosion. While pre-mine stripping is occurring, all existing buildings, except for the oil wells and their related structures, will be demolished. All debris will be removed from the site. Sand and gravel will be extracted using loaders, excavators, dozers, and trucks. Excavated material will be conveyed to processing area from the active mining area. Processing of material will include screening, washing, crushing, and the production of concrete and asphalt.

No blasting will take place at the Ewing Gravel Pit. No refuse, acid, or toxic producing material are expected to be encountered in this operation. If these materials are encountered, at least two feet of inert material will be placed over the area and mining will move to a different area.

2. Mining Timetable

Mining operations at the Ewing Gravel Pit are expected to take approximately 10.5 years to complete, based on an annual average production of 700,000 tons. Actual production rates will fluctuate based on market conditions. An approximate mining timetable based on this production and the phased mining plan is shown in Table D-1.

Table D-1 Mining Timetable

Description	Time Required
Construction of access road and slurry wall.	2 months
Initial stripping of processing area and Pod 1 (west portion on lower terrace)	1 month
Mine and reclaim Pod 1 according to approved plans. Reclamation occurs as mining has reached its maximum extents in an area.	4 years
Initial stripping of new mining area for Pod 2 (center portion on lower terrace)	1 month
Mine and reclaim Pod 2 according to approved plans. Reclamation occurs as mining has reached its maximum extents in an area.	2 years
Initial stripping of new mining area for Pod 3 (east portion on upper terrace)	1 month
Mine and reclaim Pod 3 according to approved plans. Reclamation occurs as mining has reached its maximum extents in an area.	4 years
Total	10.5 years

3. Mine Facilities and Operation

The site will contain the following facilities and equipment:

Facilities:

- Portable hot mix asphalt (HMA) plant
- Concrete batch plant
- Portable wash plant

- Portable crushing & screening unit
- Gradation screen/conveyor (portable)
- Portable toilet
- Mine office (portable)
- Scale
- Portable fuel storage

Equipment:

- Front-end loaders
- Bulldozers
- Scrapers
- Haul trucks (off highway)
- Water trucks
- Graders
- Excavators
- Conveyors

Only a loader and scale will be located on the site full time, as most of the year the mine will not need to be running at full production. No permanent structures will be built within the mining area. All production facilities and equipment will be portable. BURNCO will provide portable toilets and bottled water to employees on site during operations. These will be located in the processing area. Any fuel stored on site will have full secondary containment that can carry 110% of the fuel tank volume. All facilities will be removed during reclamation. Explosives will not be used at the site.

4. Topsoil and Overburden Handling

Topsoil averages two feet overlying two feet of overburden. Topsoil and overburden will be stripped with appropriate earthmoving equipment as deemed suitable for the operation such as front-end loaders, dozers, excavators, and water trucks. Topsoil and overburden will be stockpiled separately onsite in either designated stockpiles, berms, or directly placed to create final reclamation slopes. These materials will be directly placed in the designated stockpile areas or berms which can be seen on Map C-2. Stockpiles to be in place longer than 90 days will be seeded with the permanent seed mix to prevent erosion (see Exhibit E for seed mix). Screening berms will be constructed immediately with overburden, topsoil, and/or sand extracted from Pod 1. These berms will be vegetated to prevent erosion and provide noise and visual screening. An average of two feet of topsoil and two feet of overburden were assumed to determine the overall material balance shown in Table D-2.

Table D-2 Topsoil and Overburden Material Generated During Mining

Material Generated (CY)	
Topsoil	271,360
Overburden	271,360

Due to the reclaimed land use as water storage ponds, there will be an excess of topsoil than what is needed for reclamation. This is because the lakes make up the majority of the reclaimed

land and do not need to be topsoiled entirely. There is not enough overburden to meet reclamation needs by itself. Excess topsoil and sand will be used to augment the overburden in achieving the final grading shown in the reclamation map in Exhibit F. Overburden, topsoil, and sand will be used to backfill mining slopes to their final reclaimed state. Topsoil will be replaced on all disturbances outside of the ponds and on the pond slopes. It will not be replaced on the pond floor. Topsoil will be replaced in an average two-foot layer to restore the existing soil conditions. Details pertaining to reclamation can be found in Exhibit E and the maps in Exhibit F.

5. Site Access and Internal Road Improvements

The Ewing Gravel Pit will be accessed via the existing northeast access connecting to U.S. Highway 85. All improvements will be covered by appropriate CDOT permits. Improvements to this road will be completed prior to shipment of any construction materials from the site.

The remainder of the site will be accessed internally. The ditch separating the upper and lower terraces has an existing crossing which is currently 15 feet wide. BURNCO plans to widen this crossing to facilitate access from the lower mining areas to the processing area. The crossing will be widened to 30 feet, and a box culvert will be inserted below to maintain flow through the ditch. Details of the crossing improvements are shown on Map C-2. This will be completed prior to the start of mining.

The location and details of these items are all shown on Map C-2 in Exhibit C.

6. Water Information, Rights, and Augmentation

All water rights issues such as availability of water for this operation, consumption rates, dust control, etc. is presented in Exhibit G – Water Information.

7. Schedule of Operations

Mining operations will occur as dictated by demand with an average annual production of 700,000 tons. Mining, screening, and processing will be conducted on site with portable equipment throughout the year. Asphalt and concrete production will occur onsite at various times of the year. Product will be sold from these activities throughout the year. The operator will not have night gravel mining operations, although minor truck activity and repairs may occur after hours.

8. Fort Lupton Impacts and Environmental Impacts

All potential county impacts and concerns are addressed in the Fort Lupton Special Use Permit and Fort Lupton Annexation Application.

EXHIBIT E

RECLAMATION PLAN

1. General Reclamation Plan

The total affected area to be reclaimed under this permit is 127 acres out of the 156.7-acre permit area. Reclamation of the Ewing Gravel Pit will convert the site to a final land use of water storage ponds and rangeland.. Reclamation will occur concurrently with mining. Final reclamation will be completed after mining has finished. The pre-mine land use is predominantly agriculture with some oil production areas and one residence. Rangeland exists along the South Platte River corridor. Surroundings land uses include agriculture, open space, and mining. Pursuant to Rule 6.4.5.2(b), the applicant evaluated the post-mine land use in regard to adopted state and local land use plans for this area and adjacent land uses. The proposed post-mine land use of water storage ponds and rangeland is compatible with the general agricultural character of the area and the current zoning with is Agriculture

The permit and affected area of the site are 156.7 acres and 127 acres respectively, not all of which will be disturbed and require reclamation. Approximately 116.0 acres will be disturbed. There will be 78.1 acres of water storage while the remaining area will be rangeland (37.9 acres). Table E-1 below summarize the final land uses within the affected area upon completion of reclamation.

Table E-1 Reclamation Areas

Description	Area (Acres)
Rangeland	50.4
Water Storage Ponds	65.6
Disturbed Area Total	116.0
Undisturbed Area	11.0
Total Affected Area	127

Reclamation will occur concurrently as mining progresses through each pod. No more than 500 feet of highwall will be unreclaimed at a time. Mining slopes will be backfilled and graded to a maximum 3H:1V slope. The slopes will then be compacted for stabilization and to prevent erosion. All portable facilities and equipment will be removed from the area. All berms will be flattened. The slurry wall will remain during and after reclamation. The pond slopes and any other surrounding disturbances will be topsoiled and seeded for revegetation. Topsoil will be replaced in a two-foot layer to restore the current soil profile. Revegetation will be completed using a native seed mix recommended by the Natural Resource Conservation Service. Revegetation efforts will be monitored following reclamation. The pits will be used for freshwater storage after they have been fully reclaimed and revegetated. The ponds must have a minimum of three feet of freeboard at all times. Wildlife fencing may need to be installed surrounding the reservoirs for reclamation. These will be installed by BURNCO at the request of Colorado Parks and Wildlife (CPW) or the City of Fort Lupton.

There will be more than enough material stockpiled from on-site materials to fulfill reclamation needs as the groundwater lakes take up the majority of the reclamation area. Table E-2 shows the volumes of topsoil and overburden required for reclamation and the material volumes that will be stripped and stockpiled. As shown, there is an excess of topsoil that is stripped versus what is required for reclamation. The stripped overburden does not meet the amount required for backfilling the pits. However, there will be an excess of topsoil and sand that will be more than enough to meet these requirements. These calculations were made assuming that the site has a uniform two feet of topsoil and two feet of overburden across all areas. Topsoil will be replaced in an average two foot layer across all non-pond disturbances, while overburden will be used to backfill the pit slopes from 1.5H:1V to 3H:1V.

Table E-2 Reclamation Volumes

Requirements for Reclamation				
Pod	Topsoil Stripped (CY)	Overburden Stripped (CY)	Topsoil Required (CY)	Overburden Backfill Required (CY)
1	126,340	126,340	22,510	253,330
2	48,050	48,050	13,870	141,330
3	96,930	96,930	10,030	301,730
Screening Berm Area	10,030	--	10,030	--
Totals	271,360	271,360	87,870	696,400*

* Overburden reclamation requirements not met by the stripped overburden. There is an excess of topsoil (183,490 CY) and sand (>2M CY) present at the site that can be used to augment the backfill requirements.

Overburden reclamation requirements will not met by the stripped overburden alone. Approximately 425,000 CY of excess topsoil and/or sand will be used to augment this shortage. There is an excess of topsoil and sand present at the site that can be used to augment the backfill requirements. The excess volume of topsoil and sand required for backfill are shown in Table E-3. While most of the sand that is excavated will likely be sold, BURNCO will keep at least the minimum required amount per pod for reclamation backfilling stockpiled on site. Sand volumes have been determined from pre-mine drilling conducted on the site.

Table E-3 Additional Backfill Material Requirements

Minimum Requirements for Augmented Backfill Material				
	Pod 1 Volume (CY)	Pod 2 Volume (CY)	Pod 3 Volume (CY)	Total Volume (CY)
Existing Overburden (from Table E-2)	126,340	48,050	96,930	271,320
Excess Topsoil (calculated from Table E-2)	103,830	34,180	86,900	224,910
Min. Sand Requirement	23,160	59,100	117,900	200,160

Total (CY)	253,330	141,330	301,730	696,390
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2. Topsoil Replacement

An average of two feet of topsoil will be stripped and stockpiled prior to mining. After backfilling and grading has been completed during reclamation, topsoil will be replaced at an average depth of feet in a manner that is similar to the pre-mine soil profile. Topsoil will only be placed on the pond slopes and other surrounding disturbances. Topsoil will not be replaced on the pond floors. Replaced topsoil will be directly placed by loaders and haul trucks. All topsoiled areas will be disced to aid in root penetration.

3. Haul Roads and Access

All internal haul roads will remain following reclamation to sustain access to the various water and oil wells throughout the site. The main access will be via US-85. The ditch crossing and secondary property access will also remain in place.

4. Reclamation Timetable and Sequence

The sequence and timing of reclamation can be seen in Table E-4 below. The reclamation schedule is dependent on the rate of mining and fluctuating market demands. The operator will reclaim the site concurrently with the progression of mining to limit the total disturbance.

Table E-4 Reclamation Timetable

Description	Time Required
Develop and mine pod 1	4 years
Develop and mine pod 2 while reclaiming previous phases	2 years
Develop and mine pod 3 while reclaiming previous phases	4 years
Backfill, topsoil, and revegetate remaining disturbances	1 year
Vegetation monitoring	2 years
Total	13 years

5. Revegetation Plans

Seed will be placed in all areas to be vegetated following grading, topsoiling, and disking of the soil. All disturbances that are retopsoiled will be seeded with a Rangeland Seed Mix. The Weld County recommended mix to be used is as follows:

Rangeland Seed Mix

<u>Species</u>	<u>Pounds of pure live seed per acre (drilled)</u>
Sand Bluestem	1.0
<u>5.1.</u> Sand Lovegrass	2.5
Indian Ricegrass	3.0
Prairie Sandreed	0.75
Green Needlegrass	1.5
Little Bluestem	0.75
Yellow Indiangrass	0.5
Switchgrass	1.5
Sand Dropseed	0.5
Total	12.0

Broadcast seeding will be done at double the drill rate. Mulch will be placed at roughly 4000 pounds per acre.

6. Post Reclamation Site Drainage

The site will drain internally following reclamation. All water that enters the site will drain to the water storage ponds across the site. Refer to map F-1 for the post reclamation drainage of the site.

7. Revegetation Success Criteria

Revegetation will be deemed adequate when erosion is controlled, the vegetation cover matches neighboring wildlife habitat areas, and when it is considered satisfactory according to Division standards. This will be monitored in the two years following the completion of reclamation.

8. Monitoring Reclamation Success

Measures will be employed for the control of any noxious weed species. The objective of this weed management plan is to control undesirable plants on the Ewing property. Plants identified through the Colorado Noxious Weed Act (C.R.S 35-5.5) and the Weld County Noxious Weed List as undesirable and designated for management within the county will be removed. Any weeds identified as List A species will be eradicated. Other lower listed plants identified as noxious weeds will be managed by control measures. A Weed Control Plan will be utilized as follows:

- 1) Each April, a weed survey will be taken of the permit area.

- 2) If any patches or plants have been identified, they will be sprayed by backpack sprayer or 4-wheeler using chemicals approved for use by the weed control staff of Weld County.
- 3) After reclamation, weed surveys and spraying will continue until the perennial cover and production of the site have met DRMS requirements and bond release has been obtained.

The Division and Weld County staff will be consulted regarding any weed infestation areas and any control measures prior to their initiation. The plan does not contemplate total weed removal on the property. Rather, the goal is to prevent the spread of weeds into uninfected areas as is the primary goal of the Weld County Weed Management Plan.

Each year during the mining operation, the permit area will be monitored closely, through which the operator may determine if any additional weeds have grown. If any new species of weeds are found, Weld County and the Division will be consulted in order to formulate the best plan for the new infestation.

Weed List

8.1. Weeds listed in Table E-1 will be eradicated or suppressed according to Weld County requirements.

Table E-1. Weld County Weed List

Eradication	Suppression
List A (in Weld County)	
Cypress Spurge	
Haire Willow-Herb	
Japanese	
Myrtle Spurge	
Purple Loosestrife	
Yellow Flag Iris	
List B (in Weld County)	
Absinth Wormwood	Canada Thistle
Black Henbane	Common & Cutleaf Thistle
Bull Thistle	Eurasian Watermilfoil
Chamomile species	Jointed Goatgrass
Chinese Clematis	Musk Thistle
Houndstongue	Russian knapweed
Moth Mullein	Scotch Thistle
Oxeye Daisy	Yellow Nutsedge
Plumeless thistle	Bouncingbet
Spotted knapweed	Common Tansy
Sulfur Cinquefoil	Dalmation Toadflax
Tamarisk	Dames Rocket
Wild Caraway	Diffuse Knapweed
Yellow Toadflax	Hoary Cress
	Leafy Spurge
	Perennial Pepperweed
	Russian Olive

Eradication	Suppression
List C (in Weld County)	
	Common Mullein
	Cheatgrass/Downy Brome
	Field Bindweed
	Puncturevine/Goatheads

EXHIBIT F

RECLAMATION MAPS

Map F-1 Reclamation Plan

EXHIBIT G

WATER INFORMATION

1. General

The Ewing Gravel Pit is within the floodplain and floodway of the South Platte River. The Platteville Ditch traverses the site from south to north roughly halfway across it. Mining pods 1 and 2 are located on the lower, western terrace which is within the floodplain. Mining pod 3 is located on the upper, eastern terrace along US-85, outside of the floodplain. Mining within the floodway/floodplain will be conducted with no filling or stockpiling above the natural ground grade. Groundwater is located roughly five feet below the natural grade in mining pods 1 and 2; 25-feet below grade in mining pod 3. All groundwater onsite is part of the South Platte River alluvial aquifer. Prior to mining any pod, a slurry wall will be installed around the perimeter of each terrace of gravel, as shown on Map C-2. These slurry walls will be for the development of water storage reservoirs following reclamation.

Xcel Energy maintains a system of groundwater wells on the property for the purpose of supplying water to their power plant to the east, in Keensburg. These wells will be protected from groundwater impacts by their proximity to the South Platte River. Analysis conducted by BURNCO and shown in Appendix G-3 demonstrates this protection.

BURNCO is committed to protecting the hydrological balance and water quality at the site.

2. Water Quality Protection

The primary concerns surrounding water quality protection at the Ewing Gravel Pit site are the potential impacts to the surface and groundwater from sediment, hydraulic fluids, and diesel fuel. Sediment will be controlled through the use of stormwater retention within the disturbance area through the life of the mine. The site will be graded in a manner that maintains all surficial flows within the disturbed area, in turn containing all sediment and unwanted discharges from leaving the site. Hydraulic fluids and diesel fuels will be contained within vehicles or with adequate storage methods that follow best practices of maintenance; these practices including regular inspections of vehicles, hydraulic lines, and any other potential spill sources. Diesel fuel will be stored on-site in double walled tanks with secondary containment. Fuel storage will be stored away from exposed groundwater and other waterways. Spill kits will be located near all fueling areas to clean up inadvertent spills as soon as possible. An SPCC plan will be in place to prevent oil discharges and establish a response procedure in the event of spills.

Any surface water discharges from the site will be sampled in accordance with the NPDES discharge permit. All discharge will be via the approved Outfall, the proposed location of which is shown on Map C-2.

Table G-1. Surface Water Discharge Monitoring Requirements in NPDES Discharge Permit

Parameter	Monitoring Frequency	Sample Type
Flow	Instantaneous, Monthly	In-situ
pH	2x/month	Grab
Total Suspended Solids	2x/month	Grab
Oil and Grease Visual	2x/month	Visual
Oil and Grease	Contingent on visibility of oil and grease	Grab
Total Flow	Instantaneous, Monthly	Calculated
Selenium, Potentially Dissolved	2x/month	Grab
Total Dissolved Solids	Quarterly	Grab

Note: these are the anticipated analytes based on operator experience at similar sites. CDPHE may issue different sampling requirements with the permit.

3. Floodplain

The majority of the site is within the 100-year floodplain and floodway as reported by the Federal Emergency Management Agency. These boundaries are shown in the Exhibit C and F maps. The minimum distance maintained from the South Platte River to excavation activities is 100 feet. Additionally, no stockpiling or filling above the natural grade will occur in the floodway or floodplain. All topsoil and overburden stockpiles will be placed on the upper terrace. Overall, the downstream flood impacts should remain the same or be reduced from activity at the site as the removal of material results in more storage space for flood water below the existing grade. A no-rise certification has been provided to the City of Fort Lupton as part of its floodplain development permit.

In accordance with the Mile High Flood Control District technical guidelines, inflow/outflow structures will be installed near the river bank where mining Pod 1 reaches its closest point to the South Platte River. Details of these designs can be seen on the Map F-2..

In the event of flooding at the site, equipment from the active mining floor will be removed and the pit will be allowed to fill with water. The flooded pit will be pumped only after the flood has subsided. All fuel will be stored at least one foot above the base flood elevation and in sufficient secondary containment with 110% carrying capacity.

4. Wetlands

The National Wetlands Inventory aerial-based mapping indicates the presence of wetlands within the permit area. These wetlands are mostly associated with the vegetated banks along with South Platte River. BURNCO commits to conducting a wetlands survey prior to disturbing any potential wetlands. Exhibit C and F maps show the NWI mapped wetlands.

5. Aquifers

The only identified aquifer located at the site is the shallow alluvial aquifer of the South Platte River. The depth to this aquifer varies throughout the year but is typically five feet below surface for the lower terrace (Pods 1 and 2) and 25 feet below the upper terrace (Pod 3). According to the U.S. Geological Survey's Ground Water Atlas of the United States¹, the underlying bedrock aquifer is the Laramie Fox Hills Aquifer of the Denver Basin system. The entirety of the Ewing Gravel Pit mining operation will take place in the overlaying alluvium above a shale/siltstone layer; the Laramie Fox Hills Aquifer will not be mined.

6. Surface Water

The mining operation will impact surface water in the area through the stormwater runoff that enters the site. Map G-1 – Drainage Map show the drainage patterns and how they are affected throughout the life of the mine. The maps include information on the drainage basins currently, during mining, and post reclamation as well as the drainage directions throughout these stages. The primary concern for surface water protection at the site is preventing the discharge of sediment, oil, and/or hydraulic fluids from the operation areas. Oils and hydraulic fluids are stored on site following the standard best management practices. These practices include the use of secondary containment at fluid storage and transfer points, spill kits, and employee training regarding safe handling practices. Sediment is trapped onsite using controls and best management practices by directing and controlling surface water runoff that enters the disturbed areas. More information on sediment and surface water control is provided below.

Surface Water Handling

There are three drainage basins that collect all stormwater runoff on and around the Ewing site. These are shown on the Drainage Map. The first two consist of the lower terrace and cover Pods 1 and 2 respectively, as well as undisturbed portions to the south. Runoff from this drainage basin will be collected in the mining pods during mining and in the water reservoirs following reclamation.

The second drainage basin exists on the upper terrace and consists of mining pod 3 and undisturbed upland to the south. Runoff from this drainage basin will be collected to the mining pod and processing area during mining and the water storage reservoir following reclamation.

¹ https://pubs.usgs.gov/ha/ha730/ch_c/

All drainage basins are shown on the Drainage Map.

Mining

- During all phases of mining, and for each drainage basin, surface water runoff will drain to the active mining pod, reclaimed reservoir, or the processing area. Water collected in the active mining pod will be allowed to evaporate or will be discharge via the approved CDPHE outfall once sediment has settled out. Water collected within the processing area will be allowed to evaporate or discharged via the approved CDPHE outfall once sediment has settled out.

Post Reclamation

- The drainage patterns during mining will be retained following reclamation of the site. Any surface water runoff will collect in the reclaimed reservoirs. There is enough storage capacity above the anticipated reservoir levels and the top of the shore to store the 100-year storm events. More on those calculations is provided below.

Flood Protection

- Mining Pod 1 will extend to within 150 feet from the South Platte River in two locations as shown on the Drainage Map. Due to this proximity to the river, measures will be taken to protect the riverbank from erosion during a flood event. An inflow and outflow structure will be constructed between the River and the mining pod once mining is within 300 feet of the river. These structures will allow for the safe exchange of flood waters between the pit and river which prevents erosion of the riverbank and pitside slope during flood events. These structures are of a design approved for use by the Mile High Flood District. Details of the inflow/outflow structure are shown on the Map F-2.

6.2.

Disturbed Area Runoff

During all stages of mining, there is enough water storage capacity to contain the 5-year and 100-year 24-hour storm events and prevent erosion from surface water discharge. The expected rainfall from these events at the Ewing Site is provided in Table G-2 below.

Table G-2. Area Storm Events (from NOAA²)

Event Probability	Event Rainfall (inches)
5-YR 24-HR	2.28
100-YR 24-HR	4.64

The peak runoff was generated from these values for the three drainage basins during all stages of mining. Pre-mine, mining, and reclamation conditions are delineated on the Drainage Map. The discharge volumes from these storm events are calculated in Appendix G-1 at the end of this exhibit. Table G-3 summarizes the runoff volumes and storage volumes for each

² National Oceanic and Atmospheric Administration

drainage. All drainage calculations were made using the Rational Method identified in the Mile High Flood Control District.

Table G-3. Drainage Calculations

Drainage Basin 1					
Site Condition	Area (ac)	Runoff Coefficient	100-Yr 24-Hr Runoff (ac-ft)	Discharge Flow Rate (gpm)*	Detention Capacity (ac-ft)***
Base	60.8	0.5	10.8	15,450	N/A
Mine	60.8	0.9	11.0	1000-3000**	191.5
Reclamation	60.8	0.9	11.0	0	191.5
Drainage Basin 2					
Site Condition	Area (ac)	Runoff Coefficient	100-Yr 24-Hr Runoff (ac-ft)	Discharge Flow Rate (gpm)*	Lake Storage Capacity (ac-ft)***
Base	22.4	0.5	2.3	5,300	N/A
Mine	22.4	0.9	4.2	1000-3000**	71.6
Reclamation	22.4	0.9	4.2	0	71.6
Drainage Basin 3					
Site Condition	Area (ac)	Runoff Coefficient	100-Yr 24-Hr Runoff (ac-ft)	Discharge Flow Rate (gpm)*	Lake Storage Capacity (ac-ft)***
Base	107.8	0.5	6.1	27,400	N/A
Mine	107.8	0.9	19.4	1000-3000**	146.8
Reclamation	107.8	0.9	19.4	0	146.8

* The discharge flow rate is calculated from the peak discharge of the 100-Yr 24-Hr storm event.

**Discharge flow rate is variable and controlled during mining as all discharges are pumped from the settling pond.

***Detention Capacity calculated in CAD.

7. Groundwater

Groundwater is located approximately five feet below the surface of the lower terrace and approximately 25 feet below the upper terrace at the Ewing site. This was determined from wells installed onsite. 12 wells are located onsite for different uses. Table G-4 outlines all wells within 600' of the permit area. These well locations are shown in Map C-1.

Table G-4. Wells Within 600' of Permit Area

Applicant/Well ID	Permit ID	Total Depth (feet)	Purpose	Distance from nearest mining area (ft)
L G EVERIST INC	53518-MH	39	Monitoring/Sampling	29
MARTINEZ, HUMBERTO C.	215110--A	53	Domestic	106
DITIRRO JOHN JR	11082-F-R	45	Irrigation	606
TRICYCLE LANE TEXASS LLC (HAHNE, CLIFFORD)	151399--A	55	Domestic	31
EWING, DALE	151398-		Domestic	0
ROCKY MOUNTAIN ENERGY CENTER LLC	58545-F	50	Industrial	375
BACHOFER, ROSS	310554-		Stock	365
ROCKY MOUNTAIN ENERGY CENTER LLC	58543-F	52	Industrial	88
TRICYCLE LANE TEXASS LLC (HAHNE, CLIFFORD)	146-R	55	Irrigation	0
ROCKY MOUNTAIN ENERGY CENTER LLC	58540-F	50	Industrial	472
L G EVERIST INC	53509-MH	55	Monitoring/Sampling	0
L G EVERIST INC	297890-	51	Monitoring/Sampling	0
ROCKY MOUNTAIN ENERGY CENTER LLC	58541-F	54	Industrial	319
L G EVERIST INC	53510-MH	60	Monitoring/Sampling	84
L G EVERIST INC	57957-F	45	Industrial	590
L G EVERIST INC	57958-F	0	Other	528
FORMBY, ERNEST	98266-VE	53	Domestic	159
TRICYCLE LANE TEXASS LLC (HAHNE, CLIFFORD)	6912-F	54	Irrigation	47
L G EVERIST INC	297892-	27	Monitoring/Sampling	10
GAYTAN, ROCIO	215110--A	53	Domestic	159
ROCKY MOUNTAIN ENERGY CENTER LLC	58544-F	46	Industrial	65
EWING, DALE	151399-	40	Domestic	27
TRICYCLE LANE TEXASS LLC (HAHNE, CLIFFORD)	151398--A	55	Domestic	30
L G EVERIST INC	297891-	58	Monitoring/Sampling	84
L G EVERIST INC	77371-F		Industrial	590
OTTESENS INC	22612-F-R	52	Irrigation	270
FORMBY, EMMETT	215110-		Domestic	156
ROCKY MOUNTAIN ENERGY CENTER LLC	58542-F	58	Industrial	52
DITIRRO JOHN JR	11082-F	45	Irrigation	600

*Ewing, Tricycle Lane, and LG Everist listed wells on the property are under the applicant's control.

The Rocky Mountain Energy Center listed wells are the Xcel wells for powerplant water. They are listed separately in Table G-5. The landowner has recently installed piezometers onsite for groundwater level monitoring. These are listed in Table G-6. The piezometers will be used to track groundwater changes before and during mining. They will remain following reclamation for the benefit of the landowner.

Table G-5. Xcel Supply Wells Within 600' of Permit Area

Applicant/Well ID	Permit ID	Total Depth (feet)	Purpose	Distance from nearest mining area (ft)
ROCKY MOUNTAIN ENERGY CENTER LLC	58545-F	50	Industrial	375
ROCKY MOUNTAIN ENERGY CENTER LLC	58543-F	52	Industrial	88
ROCKY MOUNTAIN ENERGY CENTER LLC	58540-F	50	Industrial	472
ROCKY MOUNTAIN ENERGY CENTER LLC	58541-F	54	Industrial	319
ROCKY MOUNTAIN ENERGY CENTER LLC	58544-F	46	Industrial	65
ROCKY MOUNTAIN ENERGY CENTER LLC	58542-F	58	Industrial	52

Table G-6. Piezometers

Applicant/Well ID	Total Depth (feet)	Purpose	Distance from nearest mining area (ft)
Piez-1	50	Industrial	208
Piez-2	50	Industrial	50
Piez-3	50	Industrial	97
Piez-4	50	Industrial	450

7.1. Groundwater quality data was gathered in advance of mining. This data and discussion of it can be seen in the Groundwater Monitoring Plan in Appendix G-2.

Groundwater – Mining

Prior to mining of a pod a slurry wall will be installed around the perimeter of the pod to prevent groundwater flow into the mining area. Following slurry wall installation, the operator will mine out the pod by dewatering it via the approved CDPHE discharge point. Pumping to conduct this dewatering will take place during the initial mining of each pod and then pumping will cease. Stormwater runoff that is collected in an active pod may be pumped out to protect local water rights, once sediment has settled. For this reason, the CDPHE discharge point will be maintained over the life of the mine. The pump will be located at least two feet below the active mining floor at the lowest point of the pit. It will be surrounded by a gravel filter. This configuration minimizes the risk sediment being pumped out of the pit.

The typical pit pump location can be seen on Map C-2.

Groundwater – Reclamation

Permanent water storage reservoirs will be left behind within each pod, as can be seen on Map F-1. There will be no groundwater consumptive use in reclamation.

Groundwater – Slurry Wall Impact

7.2.

The installation of several slurry walls within the alluvial aquifer of the South Platte River creates two main potential impacts to the aquifer: the creation of local groundwater shadows or

7.3.

mounding that damage neighboring structures or property and the potential exacerbation of regional groundwater impacts. For these reasons, the applicant has had a groundwater model developed by GSI. The groundwater model looks at the potential impacts of the slurry wall installation on neighboring property and structures, particularly the Xcel supply wells.

Xcel Supply Wells

7.3. A set of five groundwater wells run along the west side of the mining pod 1 (Map C-1). Xcel energy pumps from these wells to supply their operations near Keenesburg, CO. The wells feed a pump house on the northwest corner of the property, from there the water is pumped east to Keenesburg. The wells are located both upstream and downstream of a proposed slurry wall. GSI analyzed the impact of the slurry wall on the Xcel wells to determine if the wall would prevent the wells from producing as Xcel required. The GSI report is in Appendix G-3.

Monitoring of the groundwater level along the South Platte River and the slurry wall will take place as outlined in the groundwater monitoring plan in Appendix G-2.

8. Water Related Permits

The operator is applying for all necessary permits that have not already been acquired for water handling at the Ewing Gravel Pit. This includes a discharge permit with the Colorado Department of Public Health and Environment and a gravel well permit for initial dewatering of each pod with the Colorado Division of Water Resources.

9. Water Consumption and Source

Water for dust control will be the primary consumptive use at the Ewing Gravel Pit site. Water will also be used for aggregate washing, dust control, and concrete/asphalt production. Water will be purchased from the local water conservancy district during operations. No ongoing water consumptive use exists in reclamation, since the water storage pods are lined. This water will be sourced from a freshwater pond in the processing area. This pond will be covered by a gravel well permit. Table G-7 summarizes the estimated water consumption for the operation throughout the year.

Table G-7. Water Consumption

Month	Aggregate Washing (ac-ft)	Concrete/Asphalt Production (ac-ft)	Dust Control (ac-ft)	Evaporative Depletions (ac-ft)	Water Removed from Mining (ac-ft)	Total (ac-ft)
Jan	0	0	0.11	0.00	0.00	0.1
Feb	0	0	0.12	0.00	0.00	0.1
Mar	0	0	0.19	0.00	0.00	0.2
Apr	2.88	3.00	0.32	1.62	0.00	7.8
May	2.99	3.12	0.42	1.68	0.00	8.2
Jun	2.88	3.00	0.51	1.62	0.00	8.0
Jul	2.99	3.12	0.53	1.68	0.00	8.3
Aug	2.99	3.12	0.47	1.68	0.00	8.3
Sep	2.88	3.00	0.35	1.62	0.00	7.9
Oct	2.99	3.12	0.25	1.68	0.00	8.0
Nov	0	0	0.14	0.00	0.00	0.1
Dec	0	0	0.11	0.00	0.00	0.1
Total	20.62	21.48	3.50	11.56	0	57.2

The Ewing Gravel Pit sources water for operations via water contract. Any groundwater exposure will be covered by a gravel well permit with the Colorado Division of Water Resources.

Appendix G-2 Groundwater Quality Monitoring Plan

Table of Contents

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Introduction

This groundwater quality monitoring plan will be implemented at the Ewing Gravel Pit located in Weld County, just north of Fort Lupton, Colorado. This plan outlines the methods that the mine operator will follow to protect and monitor the integrity of the local groundwater quality and quantity. This plan is intended to meet the requirements of the Division of Reclamation, Mining, and Safety (DRMS) Mineral Rules and Regulations Rule 3.1.7(7)(b) and the Colorado Department of Public Health & Environment (CDPHE) Regulation No. 41. The Ewing site is not located on any classified areas regarding groundwater; therefore, the statewide regulations (CDPHE Regulation 41) will be followed.

This monitoring plan requires the collection of pre-operational groundwater data that will be used as the baseline data to compare to the results of continued long-term groundwater monitoring. At least five quarters of monitoring data will be collected prior to operations commencing onsite. Continued monitoring will take place during operations. Results of this monitoring will be used to evaluate if any adverse impacts on groundwater have taken place as a result of the Ewing gravel mining operations.

The Ewing Gravel Pit will create three slurry wall encased water storage reservoirs. Initial dewatering of the mining pods following slurry wall installation will be via CDPHE approved discharge outfalls. There will be no ongoing interaction between mining operations and the local groundwater. The presence of slurry walls may impact local groundwater levels through mounding or shadow effects during mining and following reclamation. Based on these conditions, sampling of water chemistry at the Ewing Gravel Pit will be conducted on a quarterly basis. Sampling of water levels in the piezometers onsite will take place weekly.

1. Background Information

1.1. Site Description

The Ewing Gravel Pit Site is located directly north of Fort Lupton in Weld County, Colorado. An address associated with the site is 7501 US-85, Fort Lupton, 80621. The site is a total of 156.7 acres.

It is bounded by the South Platte River to the west and US-85. The site is currently multiple active agricultural fields on two terraces, the lower one being closer to the river, while the upper terrace is adjacent to the highway. Each terrace is mostly flat with the Platteville irrigation ditch dividing them. There are various abandoned residences and agricultural buildings on the upper terrace. Active oil wells and facilities are scattered across the site on both terraces. Additionally, Excel energy makes use of the site through multiple groundwater wells along the river to supply water to their power plant in the east. The site location is shown in the vicinity map in Figure 1 below.



Figure 1 – Vicinity Map

The geology of the site is composed of a sand and gravel alluvial deposit created by the South Platte River. The deposit is overlain by approximately two feet of overburden and two feet of topsoil. The deposit itself is composed of a layer of sand at the top, with an average thickness of 28 feet. An interbedded sand and clay deposit exists on the lower terrace with a thickness of 12 feet that dips shallowly to the east. Below this is the gravel deposit with an average 16-foot thickness. The bedrock below the alluvial deposit is claystone and siltstone with an approximate depth of 30-40 feet below the surface.

The groundwater aquifer present in the general vicinity is the South Platte alluvial aquifer. This aquifer is approximately 5 feet below the surface of the lower terrace, and 25 feet below the upper terrace. Characterization data of this aquifer was sourced from the *South Platte Decision Support System Alluvial Groundwater Model Update Documentation* published by the Colorado Water Conservation Board and Division of Water Resources¹. The alluvial aquifer is unconfined and spreads along the South Platte River across much of northeastern Colorado, extending up towards Nebraska. Groundwater flows are generally in the direction of the South Platte River moving towards the northeast. The aquifer ranges from 20 feet in thickness in the upper tributaries of the river, to more than 300 feet further downstream along the mainstem South Platte River extending towards Nebraska. The hydraulic conductivity generally ranges from 200-600 feet/day, but can reach up to 2,000 feet/day in the more productive sand and gravel deposits. The aquifer is recharged in various ponds and canals throughout the basin.

Underlying the South Platte aquifer is the Laramie Fox Hills bedrock aquifer which will not be interacted with as it is over 1,000 feet below the surface.

An estimated potentiometric contour model for the groundwater aquifer was developed based on groundwater data measured at the site. This data was measured through the wells identified to be used in this monitoring plan, over the course of five quarters. This mapped data, averaged throughout the seasonal fluctuations, is attached in Appendix 1. Also included in this map are all existing wells at and around the site, as well as other physical features of the site.

¹ Brown and Caldwell, *South Platte Decision Support System Alluvial Groundwater Model Update Documentation*. The Colorado Water Conservation Board and Division of Water Resources. June 2017

1.2. Baseline Groundwater Characterization

Water quality sampling will take place at seven locations for five quarters prior to mining operations in order to establish the baseline groundwater characterization. This sampling will take place at the three groundwater monitoring wells (GW-1, GW-2, and GW-3) to define the baseline water quality for the entire site as the aquifer content is uniform across terraces and proposed mining pods. Compliance monitoring will be taken downstream during mining. The downstream piezometer (Piez-1) will be used for this monitoring during mining in Pod 1 and 2. The downstream groundwater well (GW-1) will be used during mining in Pod 3.

Each sample point can be seen on the map in Appendix 1 and on Figure 3. Details on the sampling locations are provided in Table 1.

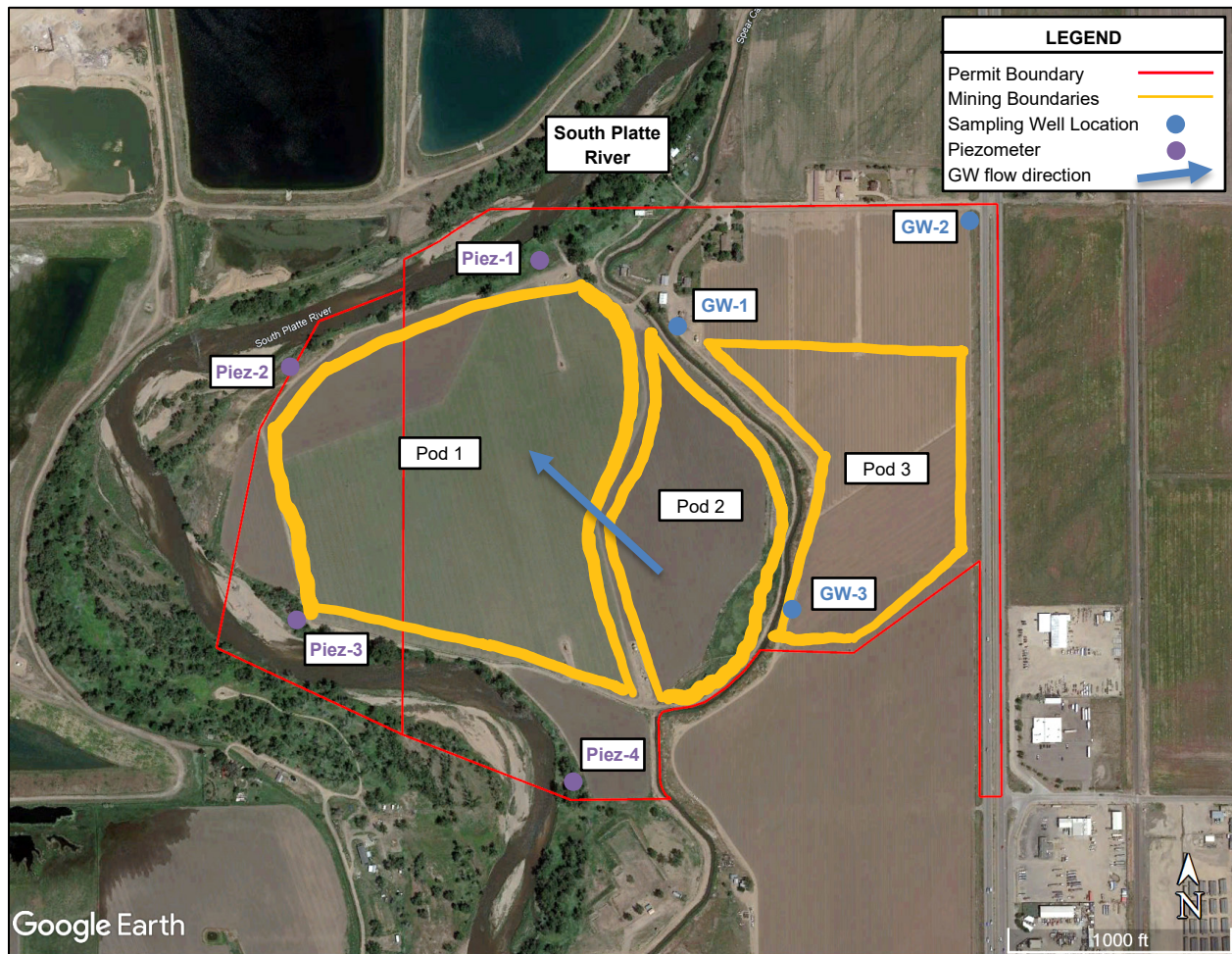


Figure 2 – Groundwater Sampling Locations

Table 1 – Groundwater Sampling Location Data

ID	Location Description	Lat	Long	Surface Elev.	Top of Casing Elev.	Total depth (ft)	Completion Date
GW-1	NE upper terrace near US-85	40.10834	-104.81558	4830'	4831'	55.0	1/30/2014
GW-2	NW upper terrace near residences	40.10897	-104.81108	4830'	4834'	58.0	4/6/2015
GW-3	W upper terrace in field	40.10537	-104.81356	4830'	4833'	51.0	4/6/2015
Piez-1	N lower terrace by river	40.10848	-104.81794	4815'	4819'	43.0	2/1/2023
Piez-2	W lower terrace by river	40.10705	-104.82193	4820'	4824'	45.0	2/1/2023
Piez-3	SW lower terrace by river	40.10405	-104.82176	4820'	4824'	50.0	2/1/2023
Piez-4	S lower terrace by river	40.10207	-104.81735	4825'	4829'	46.0	2/1/2023

1.2.1. Monitoring Well Installation

All wells being used for monitoring have already been constructed and permitted with the Colorado Division of Water Resources (CDWR). They have been constructed by a licensed contractor following the State Engineer's Office (SEO) guidelines. Construction information can be found under the following permits with the CDWR.

ID	CDWR Permit No.
GW-1	151398-A
GW-2	297891-
GW-3	297890-
Piez-1	329516-

Piez-2	329532-
Piez-3	329517-
Piez-4	329518-

1.2.2. Baseline Groundwater Quantity

The baseline water level will be quantified with at least five quarters of static water level measurements at all seven sampling locations. It will be taken quarterly prior to quality sampling at groundwater wells GW-1, GW-2, and GW-3 prior to the collection of the samples. It will also be taken quarterly, at a minimum, from piezometers Piez-1, Piez-2, Piez-3, Piez-4. The water level will be measured using depth measuring equipment such as a sounder from the top of the well casing, using the sampling methods outlined later in this plan. Data will be recorded in a table and reported in Appendix 1.

This data will be analyzed to show the water level against time in graph format, as well as to create a potentiometric head model. This model will be developed by averaging the five quarters of water level measurements at three or more points. A spatial model will be developed using the average water level and well location in a geospatial mapping software. A contour map will be created to show the results of this model and will be provided in Appendix 1.

1.2.3. Baseline Groundwater Quality

The baseline water quality will be quantified with at least five quarters of water quality sampling at three of the seven sampling locations. Field and laboratory samples will be taken quarterly at groundwater wells GW-1, GW-2, and GW-3. While these wells do not represent the upstream and downstream locations of all the mining areas, they will work to quantify the ambient baseline quality of the groundwater aquifer as it should be homogenous across the site. Quality sampling will meet Regulation 41 standards and parameters using the sampling methods described in this plan. Data will be recorded in a table and reported in Appendix 1.

2. Predicted Impacts to Hydrologic Balance

Predicted impacts to the hydrologic balance due to operations at the Ewing Gravel Pit will primarily include impacts from the slurry wall. Mounding of the groundwater in the aquifer will likely occur surrounding the slurry wall. Water quality is not anticipated to be impacted as the slurry wall separates mining operations from the groundwater aquifer. The mounding of groundwater has been quantified through a groundwater model to determine the cumulative effects of the slurry wall with the surrounding conditions. This report is attached in Appendix G-3 of the CDRMS permit.

The sampling and monitoring methods in this plan will work to identify any impacts to hydrologic balance once mining starts. Also outlined in this plan are actions to take in the case that adverse impacts to the groundwater are encountered.

3. Groundwater Monitoring Plan

This groundwater monitoring plan will be enacted at the Ewing Gravel Pit to identify and quantify and potential impacts of mining to the local groundwater aquifer.

3.1. Groundwater Points of Compliance

The points of compliance (POC) at the Ewing Gravel Pit will be used to monitor quality and quantity of groundwater during mining operations to ensure compliance with Regulation 41. These points of compliance are downstream of mining. Piez-1 will be the POC during mining in Pods 1 and 2, while GW-1 will be the POC during mining in Pod 3. Monitoring will begin quarterly at the POC after the beginning of mining of each pod. If monitoring shows no adverse effects of mining at these POC's, monitoring frequency may be decreased. If adverse effects are identified, the DRMS will be notified and BURNCO will start a water quality mitigation plan.

4. Sampling Methods

This section identifies the sampling methods that will be used to quantify the groundwater conditions at the Ewing Gravel Pit.

4.1. Sampling Location

The sampling locations, including frequency and sampling type, are detailed in the table below.

Baseline Sampling			POC Sampling	
ID	Sampling Description	Sampling Frequency	Sampling Description	Sampling Frequency
GW-1	Quality and quantity	Quarterly for five quarters	Quality and quantity during Pod 3 mining	Quarterly
GW-2	Quality and quantity	Quarterly for five quarters	None	N/A
GW-3	Quality and quantity	Quarterly for five quarters	None	N/A
Piez-1	Quantity	Quarterly for five quarters	Quality and quantity during Pod 1 and 2 mining	Quarterly

Piez-2	Quantity	Quarterly for five quarters	None	N/A
Piez-3	Quantity	Quarterly for five quarters	None	N/A
Piez-4	Quantity	Quarterly for five quarters	None	N/A

4.2. Sampling Frequency

Baseline groundwater sampling will begin at least five quarters in advance of mining at the Ewing Gravel Mine. One sample per quarter will be taken at each of the groundwater sampling locations to define the baseline conditions of groundwater.

Point of compliance sampling will begin after mining has started. It will start out as quarterly sampling. If adverse impacts have not encountered after five quarters of sampling, the frequency may be decreased.

4.3. Sampling Parameters

BURNCO will perform field and laboratory analysis of their samples for the water quality parameters identified in Table 1. These parameters are those listed in Tables 1-4 of the CDPHE Regulation 41 for Domestic Water Supply, Agricultural Standards, and TDS Water Quality Standards. All laboratory analysis of the groundwater samples will be performed by a State of Colorado certified laboratory that follows industry standards and quality assurance/quality control (QA/QC) procedures.

Table 2 – Water Quality Parameters

Parameter	Phase	Units
Aluminum	Dissolved & Total	mg/L
Antimony	Dissolved	mg/L
Arsenic	Dissolved & Total	mg/L
Barium	Dissolved	mg/L
Beryllium	Dissolved	mg/L
Boron	Dissolved	mg/L
Bicarbonate	Total	mg/L as CaCO ₃
Carbonate	Total	mg/L as CaCO ₃
Calcium as CaCO ₃	Dissolve	mg/L
Cadmium	Dissolved & Total	mg/L
Chromium	Dissolved	mg/L
Chloride	Dissolved	mg/L
Cobalt	Dissolved	mg/L
Conductivity	Field	umhos/cm
Copper	Dissolved & Total	mg/L

Cyanide	Total & WAD	mg/L
Fluoride	Dissolved	mg/L
Hydroxide	Total	mg/L as CaCO ₃
Iron	Dissolved & Total	mg/L
Lead	Dissolved & Total	mg/L
Lithium	Dissolved	mg/L
MBAS	Lab	mg/L
Manganese	Dissolved	mg/L
Mercury	Dissolved & Total	mg/L
Molybdenum	Dissolved & Total	mg/L
Nickel	Dissolved	mg/L
Nitrate	Dissolved	mg/L as N
Nitrite	Dissolved	mg/L as N
Total Dissolved Solids	Dissolved	mg/L
Total Alkalinity	Total	mg/L as CaCO ₃
Total Nitrate + Nitrite	Dissolved	mg/L as N
pH	Field & Lab	N/A
Phenol - Total	Lab	Ug/L
Selenium	Dissolved	mg/L
Silver	Dissolved	mg/L
Sulfate	Dissolved	mg/L
Temperature	Field	°C
Thallium	Dissolved	mg/L
Uranium	Dissolved	mg/L
Vanadium	Dissolved	mg/L
Zinc	Dissolved & Total	mg/L
Dissolved Oxygen	Field	mg/L

4.4. Sampling Procedure

The following protocol will be used for the collection and testing of water samples:

- 1) Specific bottles will be ordered from an appropriate laboratory which will be used for collecting water samples.
- 2) The static water level of the groundwater well will be measured and recorded using a water level well sounder prior to pumping of the well. The measurement location at the top edge of the well casing will be marked with a permanent ink pen. This mark will be touched up with fresh ink each time a sample is taken
- 3) The contents of the well will be purged prior to sample collection using a low-flow, submersible pump. This pump will be cleaned prior to being placed in the well. At least three well volumes will be removed prior to sampling.
- 4) The following field measurements will be taken with cleaned and calibrated meters:
 - a. pH
 - b. Temperature
 - c. Dissolved Oxygen
 - d. Conductivity

- 5) Water will be pumped from the well into a clean pitcher or bottle which will be used to fill the bottles from the laboratory. The bottles will be marked with the date, time, and site location of the sample as well as the person who collected the sample. If a pump controller system is used, the sample bottles may be filled directly from the well. Filled sample bottles will then be placed in a cooler with ice.
- 6) A chain of custody will be completed for the sample which indicates what analyses need to be performed, the date and time of sampling, sample identification, and who assembled the sample. The samples will be delivered to the lab the day of collection.

4.5. Analytical Procedures

The results from the analytical water quality testing will be evaluated through comparison with the State groundwater quality standards. The Ewing Gravel Mine is not within any WQCC specified areas that would require conformance with anything other than statewide water quality standards. Baseline groundwater data can be found in Appendix 2.

4.5.1. Ambient Water Quality Standard

Based on the pre-mine baseline water quality data gathered at the Ewing Gravel Pit, the following ambient standards are proposed for the parameters identified below. The ambient standard is based on the two-sigma (95-percentile) statistical value for the parameter sampled.

Table 3. Proposed Ambient Standards

Parameter (mg/L)	Average	Two-Sigma	Reg 41 – Drinking Water	Reg 41 – Ag. Water	Reg 41 – Human Health	Samples in Excess of Standards
Manganese	0.325	1.20	0.05	0.2	N/A	4
Uranium	0.018	0.04	N/A	N/A	0.03	3

4.6. State Water Quality Standards

The analytical results of water quality testing during mining will be compared to the regulatory limits established by Water Quality Control Commission (WQCC). The groundwater of the Ewing Gravel Mine is subject to the statewide groundwater quality standards as defined in Tables 1-4 of the WQCC Regulation 41. The site is not within any specified areas identified by the WQCC to have specific groundwater quality standards. If any exceedance of these standards or the ambient values are detected during mining at the Ewing Gravel Mine, the DRMS will be notified in accordance with Rule 3.1.7(9) and BURNCO will initiate a water quality mitigation plan.

If any exceedances of the WQCC Regulation 41 basic groundwater standards are encountered, BURNCO will implement the following mitigation procedures:

- Notify the DRMS of the exceedance within five (5) working days of receiving the analytical report from the laboratory.
- Identify the potential cause or source of the exceedance.

- Implement supplemental water quality sampling. Sampling and testing of the groundwater well will be increased to a weekly basis until the parameter(s) drop below the allowable limit. Only parameter(s) that were in exceedance will be measured as part of this supplemental sampling.
- Consult with the Weld County Department of Environmental Health on appropriate mitigation methods of the exceedance.
- Provide a report to Weld County staff and the DRMS with details of the exceedance, mitigation measures, and results.

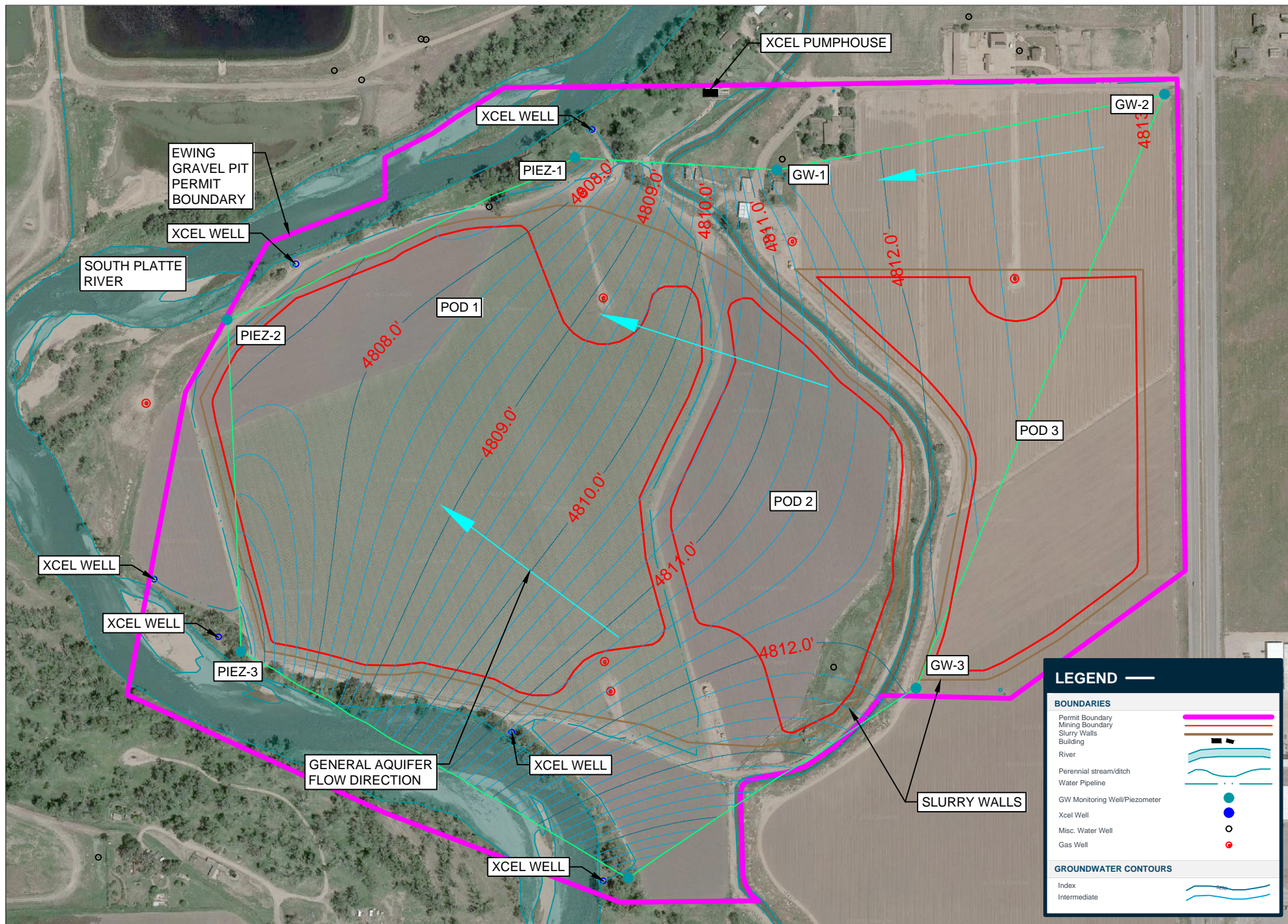
4.7. Reporting

Baseline water quality data will be reported to CDRMS prior to operations. Groundwater levels in the piezometers along the river will be reported in comparison to both pre mine levels and target levels from the groundwater model.

4.8. Sampling Quality Assurance Project Plan (QAPP)

BURNCO's quality assurance methods for water sampling includes only using Colorado State certified laboratories with an industry standard Quality Assurance/ Quality Control plan in place. On site quality assurance for field sampling is included in the Sampling Procedure described in Section 1.4. Certain steps of the procedure such as clearing three well volumes before sampling and using cleaned and calibrated testing equipment help to ensure that the testing results are accurate and free of altering contaminants. Any samples that are collected will include information on who took the sample, when it was taken, sample identification, and the chain of custody.

Appendix 1 - Map



Appendix 2 - Baseline Groundwater Quality Data

	Date											
	GW-1				GW-2				GW-3			
Parameter, Limit	9/28/2022	2/8/2023	3/30/2023	6/29/2023	9/28/2022	2/8/2023	3/30/2023	6/29/2023	9/28/2022	2/8/2023	3/30/2023	6/29/2023
Dissolved												
Aluminum	0	0.002	0	0.003	0	0.006	0.002	0.005	0	0.003	0.006	0.003
Antimony	0	0	0	0	0	0	0	0	0	0	0	0
Arsenic	0.0018	0.0008	0.0006	0	0	0	0	0	0	0	0	0
Beryllium	0	0	0	0	0	0	0	0	0	0	0	0
Boron	0.22	0.22	0.35	0.25	0.24	0.24	0.3	0.31	0.21	0.16	0.21	0.23
Cadmium	0.0001	0.0002	0	0.0001	0	0.0002	0.0002	0.0002	0.0002	0.0001	0	0.0001
Chromium	0	0	0	0	0	0	0	0	0	0	0	0
Cobalt	0.0004	0.0008	0.0011	0.0016	0.0009	0.001	0.001	0.0009	0.0066	0.0058	0.0057	0.0078
Copper	0.0062	0.0015	0.0017	0.002	0.0008	0.0009	0.0008	0.0008	0.0025	0.0022	0.002	0.0029
Fluoride		1.52	1.5		1.58	1.69	1.64		1.24	1.32	1.26	
Iron	0.007	0.027	0.012	0	0	0	0	0	0	0	0	0.012
Lead	0	0	0	0	0	0	0	0	0	0	0	0.0001
Manganese	0.0011	0.057	0.0649	0.1023	0.5706	1.1	0.9947	0.9991	0.001	0.0044	0.0051	0.0042
Mercury		0	0	0		0	0	0		0	0	0
Molybdenum	0.0061	0.0039	0.0038	0.0037	0.0085	0.0058	0.0053	0.0042	0.0032	0.0036	0.0038	0.0033
Nickel	0.0023	0.003	0.003	0.0038	0.0033	0.0032	0.0031	0.0029	0.0052	0.0052	0.0046	0.0054
Selenium	0	0.0015	0	0	0.0073	0.0096	0.0112	0.0101	0	0	0	0
Silver	0	0	0	0	0	0	0	0	0	0	0	0
Thallium	0	0	0	0	0	0	0	0	0.0002	0	0	0
Uranium	0.0084	0.0167	0.0094	0.0097	0.0219	0.0398	0.0366	0.0338	0.0069	0.0082	0.0082	0.02
Vanadium	0.001	0	0	0	0	0	0	0	0	0	0	0
Zinc	0.001	0	0.001	0.001	0	0	0	0	0.001	0	0	0
Total												
Aluminum	0.014	0.014	0.005	0.003	3.21	0.392	0.867	0.522	0.005	0.088	1.17	0.036
Arsenic	0.002	0.0011	0.0006	0	0.0015	0	0.0007	0.0006	0	0	0.0009	0
Barium	0.0941	0.0899	0.078	0.0686	0.1106	0.0386	0.0568	0.049	0.0528	0.0529	0.0948	0.0625
Cadmium	0.0002	0.0002	0	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0001	0.0001	0.0001

	Date											
	GW-1				GW-2				GW-3			
Parameter, Limit	9/28/2022	2/8/2023	3/30/2023	6/29/2023	9/28/2022	2/8/2023	3/30/2023	6/29/2023	9/28/2022	2/8/2023	3/30/2023	6/29/2023
Calcium as CaCO3	176	11.74	203		346	302	328		208	222	245	
Copper	0.0083	0.0035	0.002	0.0023	0.0064	0.0015	0.0027	0.0021	0.0027	0.0023	0.0049	0.0036
Iron	0.322	0.263	0.071	0.16	4.96		1.72	1.03	0.005	0.056	1.85	0.031
Lead	0.0006	0.0004	0	0	0.0054	0.0003	0.001	0.0011	0.0001	0.0001	0.0015	0.0002
Mercury	0	0	0	0	0	0	0	0	0	0	0	0
Molybdenum	0.007	0.0044	0.0038	0.0038	0.0085	0.0061	0.0061	0.0046	0.0036	0.0038	0.0044	0.0037
Zinc	0.002	0.005	0.002	0.002	0.018	0.003	0.007	0.004	0.001	0	0.009	0.002
Field												
Dissolved Oxygen		0.0033	0.001	0.69	2.75	0.0219	12.8		0.9	0	12.0	
Electroconductivity		0.0073	0.0032	1180	893	0	19.5		771	7.27	16.0	
pH	6.92	0	0.0052	7.16	7.8	0	18.7		7.4	7.27	10.2	
Temperature	20	0.0085	0	19.4	15.5	0	8.5		17.8	0.24	7.5	
Water Depth		21.2	19.9803156	17.0931764	19.4	23.3	20.013124		19.3	23.3	20.669292	

EXHIBIT H

WILDLIFE INFORMATION

1. Introduction

Given the location of the Ewing Gravel Pit just north of Fort Lupton, adjacent to the highway, and surrounded by an abundance of gravel pits and agricultural fields, it is safe to assume that wildlife habitat fragmentation has already occurred. Colorado Parks and Wildlife (CPW) habitat and range mapping has been used to develop this wildlife analysis. The CPW will be consulted as part of the mine permitting process.

2. Description of Significant Wildlife Resources on the Affected Land

The affected land within seasonal and general range of a few non-endangered species.

There are no bald eagle nests within 5,000 feet of the site, but the site is considered part of a few bald eagle ranges: summer forage, winter forage, and winter concentration.

The affected area is within the mule deer corridor and their severe and normal winter range. The site is not near any mule deer migration corridors or highway crossings. The site is also within the white-tailed deer concentration area and winter range.

3. Seasonal Use of the Area

Bald eagles make use of the site as summer and winter forage, as well as a winter concentration area. Mule deer and white-tailed deer use the site as winter range. All other significant wildlife resources are year-round in their usage.

4. Presence and Estimated Population of Threatened or Endangered Species

No federally listed threatened and endangered species and/or habitat were identified on the or immediately surrounding the affected land.

5. Effect of Proposed Operation on Existing Wildlife

Impacts on wildlife use from the proposed project would include direct temporary elimination of potential habitat within the affected area during mining, and temporary localized displacement associated with additional noise and lighting from the proposed project. This localized loss of habitat would not disrupt regional migration or significant movement patterns and would not threaten the overall health and viability of any species. Nearby lands are also disturbed for

similar uses, and as such the Ewing Gravel Pit will not cause a significant impact on the local area's wildlife habitat.

The affected area will be fully reclaimed at the conclusion of mining which will restore some degree of wildlife habitat over time. Concurrent reclamation and phased mining will also help to reduce the total impact on wildlife. Transformation of the bulk of the agricultural fields onsite into water storage ponds will be a permanent change in overall habitat.

6. Impacts to Fish

Mining will not take place in any water ways or natural lakes. Surface water controls will protect offsite drainages and fish habitats from sediment discharges. BURNCO will not stock the reclaimed lake with non-native species at any time.

EXHIBIT L

RECLAMATION COSTS

The Ewing Gravel Pit will have a bond to cover the worst-case reclamation scenario. Prior to the start of mining in Pod 1, the operator/applicant will post the necessary bond.

The worst-case reclamation scenario will occur at the beginning of Pod 1, before any mining commences due to the cost of slurry wall construction. Pod 1 and 2 slurry wall is the longer of the two to be constructed. During the beginning of Pod 1, it is anticipated that the processing area will also be developed. Therefore, the worst-case reclamation scenario also includes the cost of reclaiming the processing area and a section of active highwall.

Once the first slurry wall is installed, the permittee may pursue a reduced bond via a bond reduction request to CDRMS. The slurry wall unit cost is based on previous CDRMS slurry wall cost calculations for other similar sites.

A breakdown of the estimated worst-case reclamation cost is shown in Table L-1.

Table L-1 Ewing Gravel Pit Bond Estimate.

Description	Material Quantity	Unit	Unit Cost	Cost
Pod 1 and 2 slurry wall. 6500-ft by 50-ft deep.	325,000	Sq. ft.	\$4.30	\$1,397,500
Topsoiling to 2 FT. deep along the slurry wall installation path. 20-ft wide x 6500-ft long (3 acres) x 2-ft deep.	26,200	CY	\$1.50	\$39,300
Freshwater and groundwater pond backfill.	190,000	CY	\$1.50	\$285,000
500-ft of highwall backfilled from 1H:1V to 3H:1V to a depth of 50-ft.	47,000	CY	\$1.50	\$70,500
Topsoil disturbed area (~28 acres) to 2-ft deep	84,000	CY	\$1.50	\$126,000
Revegetated disturbed areas (processing area, slurry wall trench, misc.). Includes mulching.	28	acres	\$1750	\$49,000
Weed control management for two years.	N/A	N/A	\$1500	\$1500
Subtotal				\$1,968,800
DRMS cost (28%)				\$551,264
Total				\$2,520,064

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AFFIDAVIT OF PUBLICATION

State of Colorado }
County of Weld } ss

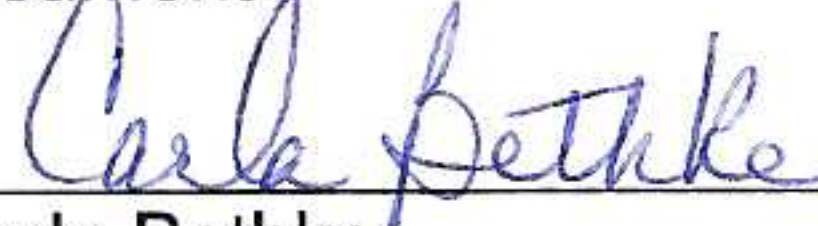
This Affidavit of Publication for the Fort Lupton Press, a weekly newspaper, printed and published for the County of Weld, State of Colorado, hereby certifies that the attached legal notice was published in said newspaper once in each week, for 4 successive week(s), the last of which publication was made 11/2/2023, and that copies of each number of said paper in which said Public Notice was published were delivered by carriers or transmitted by mail to each of the subscribers of said paper, according to their accustomed mode of business in this office.



For the Fort Lupton Press

State of Colorado }
County of Arapahoe } ss

The above Affidavit and Certificate of Publication was subscribed and sworn to before me by the above named Linda Shapley, publisher of said newspaper, who is personally known to me to be the identical person in the above certificate on 11/2/2023. Linda Shapley has verified to me that she has adopted an electronic signature to function as her signature on this document.


Carla Bethke
Notary Public
My commission ends April 11, 2026

CARLA BETHKE
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20004025550
MY COMMISSION EXPIRES APRIL 11, 2026

PUBLIC NOTICE

BURNCO Colorado, LLC, whose address and phone number are 10100 Dallas Street, Henderson, CO 80640, (720) 682-1124, has filed an application for a (112c) construction materials reclamation permit with the Colorado Mined Land Reclamation Board under provisions of the Colorado Mined Land Reclamation Act. The proposed mine is known as the Ewing Gravel Pit, and is located at or near Section 30, Township 2N, Range 66W, of the 6th Principal Meridian.

The proposed date of commencement is January 2024, and the proposed date of completion is October 2034. The proposed future use of the land is water storage.

Additional information and tentative decision date may be obtained from the Division of Reclamation, Mining and Safety, 1313 Sherman Street, Room 215, Denver, Colorado 80203, (303) 866-3567, or at the Weld County Clerk and Recorder's office; 1250 H Street, Greeley, CO 80631, or the above-named applicant. A complete copy of the application is available at the above-named county clerk and recorder's office and at the division's office.

The application can be viewed online at <https://drms.colorado.gov>. Statements, including in support of or objecting to, can be submitted online at https://dnrlaserfiche.state.co.us/Forms/DRMS_Comment.

Comments concerning the application and exhibits must be in writing and must be received by the Division of Reclamation, Mining and Safety by 4:00 p.m. twenty days from the last publication date of this notice.

Please note that under the provisions of c.r.s. 34-32.5-101 et seq. comments related to noise, truck traffic, hours of operation, visual impacts, effects on property values and other social or economic concerns are issues not subject to this office's jurisdiction. These subjects, and similar ones, are typically addressed by your local governments, rather than the division of reclamation, mining and safety or the mined land reclamation board.

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