

WDEQ/LQD Permit 624

Brian Good  
3796 Lane 32½  
Greybull, WY 82426

MINE PLAN

LQD

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3/28/14-624

DEQ 5/001  
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## MINE PLAN

### A. GENERAL DESCRIPTION

#### ***Nature and type of mine:***

Bentonite will be mined via surface strip mining. No chemical processing is necessary in the field, thus, there will be no on-site disposal of tailings.

#### ***Life of mine:***

Pit advance is dependent on demand, but it is anticipated that mining will be completed by 2024 and the site will be entirely in reclamation phase at this time.

#### ***List of available equipment:***

Currently, mining is being done through the use of a contract miner (Larry Anderson) and it is anticipated that this will continue into the foreseeable future. As a result, an exact list of equipment is unknown. At the present, mining operations are being conducted through the use of a grader, scrapers, Cat D9 and D10 sized dozers, and farm tractor equipped with a disc or ripper.

#### ***Protection of other resources:***

Bentonite is the only onsite mineral. There are no federal minerals associated with this site, thus, there are no concerns with oil and gas leasing. The bentonite bed being mined is the Flat Bed of the Frontier Formation, which is located on average 20 to 25 feet above any known formation (Peay Sandstone) that has been associated with being an aquifer. Please see the Mining Hydrology for further discussion.

### B. MINE DESIGN AND CONSTRUCTION

#### ***Buildings, utilities, and other facilities or improvements:***

There will be no permanent facilities constructed on the mine site, which is to include buildings, railroads, conveyors, and utilities such as power transmission and communication lines. Temporary camps will be placed within areas disturbed by mining, some of which may be maintained past the reclamation schedule of being entirely reclaimed within five years of disturbance.

#### ***Access and haul roads:***

Access to the site is provided by County Roads and Haulroads permitted under WDEQ/LQD Permit 278C. Because Larry Anderson (contractor) is performing all of the mining and hauling of bentonite and maintains a License to Mine under WDEQ/LQD Permit 278C, it is assumed that these conditions are recognized and satisfactory for providing commercial site access. If there is a change in landowner opinion with regard to access, independent Rights-of-Way / Easements will be obtained.

Map MP-1 illustrates the Bear Creek crossing location to provide access to the pit series located on the east side of the creek. Addendum MP-A provides hydrology and hydraulic calculations

MP-1

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associated with the crossing, which has been designed to handle the predicted peakflow from the 10-year event. The Crossing consists of an eight-foot diameter 110 feet in length. A minimum of four feet of compacted fill will be placed over the culvert. A Nationwide permit for constructing the crossing will be obtained from the US Army Corps of Engineers prior to the installation of the culvert.

***Solid waste disposal:***

There will be no on-site solid waste disposal. The small quantity of materials generated will be hauled off-site to a permitted facility.

***Disposal, covering, or treatment of toxic materials:***

The disturbed overburden contains no combustible, toxic, or radioactive materials. Unsuitable overburden materials will be buried or capped with a covering of suitable material.

***Storage and/or stockpile sites and storage longevity:***

All stockpiles, to include topsoil, other suitable material, overburden, and bentonite will be contained within pit disturbance areas, and will be reclaimed per the schedule as detailed in the Reclamation Plan. Topsoil stockpiles that will be in existence for longer than one year shall be seeded. All topsoil and subsoil/suitable material piles will be signed as required by WDEQ/LQD Rules and Regulations.

***Commodity production (bentonite):***

The bentonite will be excavated and piled and dried on a pad of overburden. Potential runoff from these pads will be contained by berms, ditches, and a clean buffer to prevent contamination of adjacent topsoil and subsoil/suitable material. When targeted for removal from the drying pads, the product is loaded, using a bucket loader, into belly-dump haul trucks and transported to the buyer's mill facility. Timing of transport depends upon adequate drying of the bentonite and product demand.

***Mining sequence and progress projections:***

The first year's mine plan is accounted for in the reclamation bond estimates section of the specific Update or Amendment reclamation plan. Subsequent mine progression and projections will be updated in each year's Annual Report. Due to demand, the mining schedule may vary substantially from year-to-year. This condition may cause either temporary or long-term suspension of activity and if it appears that there will be long-term suspension of activities a request for Interim Stabilization will be filed. Because the mining schedule is demand driven and may occur up to seven days per week, but generally for a maximum of a single 12-hour shift.

**C. COMPLIANCE**

***Stormwater and spill prevention plan:***

A Stormwater and Spill Prevention Plan has been developed as part of the process for obtaining coverage under WDEQ/WQD's General Industrial Stormwater Permit (WYR32-0000). Coverage under this permit is by term which currently runs through 2016. The permit number for the site is WYR32-0699.

MP-2

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***Interim stabilization plan (for suspended operations):***

Should market conditions dictate the suspension of mining activities, all pit highwalls, drainages, overburden areas, and points of potential runoff will be stabilized and monitored as required. The site will be monitored quarterly with additional inspections occurring subsequent to large precipitation events to ensure there are no issues.

***Wildlife protection:***

The proposed area to be affected is outside the delineated Sage Grouse Core Area. As shown on Map MP-2, the proposed area to be mined is just outside the 2-mile buffer zone of the nearest active Sage Grouse Lek based on information from the Wyoming Game and Fish Department. When the temporary detour was constructed to facilitate mining under the haulroad that bisects permit area, a stipulation was placed on road detour construction. The road has been constructed, thus, the stipulation is no longer applicable. The mine area is outside any area designated as crucial habitat for big game species.

**D. MINE HYDROLOGY**

***Sediment control:***

*During mining* berms will be utilized to direct and control runoff from disturbed mine areas. Runoff will be directed towards an open pit that will act as a sedimentation sump. In most instances, the open pit should have adequate capacity to contain the runoff volume associated with a 10-year, 24-hour storm event. In areas where the areal extent of disturbance is small and pit capture is not feasible, berms and/or ditches may be used to divert runoff into constructed sumps with a capacity of one-acre foot or less. Water collected in pits or constructed sumps will either be allowed to evaporate or will be utilized for dust control. In areas where this configuration is not possible, Alternate Sediment Control Methods (ASCM's), such as check dams or silt fence, will be utilized to treat the runoff.

*During reclamation* sediment control will be provided using a combination of Best Management Practices (BMP's) and ASCM's. Following final contouring and topsoiling of a reclaimed area it will be ripped along the contour, which will serve to reduce any compaction present as well as create furrows that will minimize runoff potential. For reclaimed drainage channels, if determined to be necessary, check dams will be constructed within the postmine drainage to serve as energy dissipaters/sediment filters. The channel at each dam location will be slightly sub-excavated and the dams constructed such that they are adequately keyed into the bed and bank. If through time erosional features, such as headcuts, develop within a reclaimed channel remediation measures such as armoring the channels or construction of rock check dams will be used to reduce channel gradient.

***Potential impacts to water resources:***

Lands being affected by mining activity include several ephemeral drainages that are tributary to Bear Creek, which is tributary to the Bighorn River. Bear Creek is an intermittent stream that will only be directly impacted by the construction of a crossing to access the mine area east of Bear Creek. Once mining and reclamation have been completed, the crossing will be removed. The

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crossing has been designed to meet the requirements of WDEQ/LQD NonCoal Rules and Regulations, Chapter 3.

Ephemeral drainage streamflow is primarily associated with short-duration, high intensity rain storms. Low infiltration rates generally result in a substantial portion of the rainfall being runoff. Due to the general short duration of the storms, streamflow is often short-lived. During mining, runoff from disturbed lands is focused into either mine pits or pre-constructed sumps which do not allow the runoff to reach Bear Creek. The impact associated with the existing (to date) and proposed activity is concluded to be minor, if not immeasurable, given the area of disturbance and the resulting interception versus the Bear Creek drainage area above the mine.

Once reclamation is complete, it is anticipated that there will be no measurable change to the drainage system. WDEQ/LQD Rules and Regulations require that the vegetative cover of the postmine landscape be equal to or greater than what existed premine. This indicates that infiltration, interception and evapotranspiration rates should be similar to premine and, thus, impact to runoff should be minimal. A single postmine impoundment (Stockpond) will be left at the southeast corner of the mine area that lies between the haulroad that bisects the permit area and Bear Creek. All runoff from this area will be direct toward the impoundment and an overflow will be constructed that connects the impoundment with Bear Creek. The remainder of the affected watershed area will be reconstructed with drainage channels such that it drains to Bear Creek as existed premine. Because a very small drainage area will be removed from the Bear Creek Watershed and the fact that most of the streamflow is derived from upstream areas, no measurable loss in streamflow is anticipated as a result of this postmine impoundment.

Premine water quality is highly variable due to the natural flashy behavior of a rainfall-runoff driven system. In general, water quality is poor during the early stages of runoff (along the rising limb of the hydrograph) because any salts and sediments that have accumulated with time are being placed into suspension. As time passes, these become flushed from the system and water quality begins to improve. During mining, runoff from disturbed lands is generally designed to be captured by open pits and where this is not feasible, treated using Alternative Sediment Control Measures (ASCM's), such as straw bale check dams. Thus, any potential for increased sediment loading due to mining is minimized and streamflow water quality should be equal to or better than existed naturally.

As stated above, DEQ/LQD Rules and Regulations require that reclaimed landscape cover be equal to or greater than what existed prior to mining. During the reconstruction of ephemeral drainages, rocky backfill will be utilized, which should reduce the erosion potential within the channel. In the interim between final reclamation of the disturbed landscape and bond release, ASCM's will be utilized as necessary to capture sediment. Each of these items above indicates that suspended sediment, turbidity, and salt levels in the postmine streamflow will be similar to what existed premine.

As stated earlier, all proposed mining activity is at least 20 feet above any known formation that is associated as an aquifer in portions of the Big Horn Basin. Adjacent to Bear Creek there are areas where there is a perched system, small/narrow in areal extent. They existed because the water is perched by the bentonite layer. In areas where this occurs and the bentonite is mined, it can be reasonably assumed that they will not become re-established in the postmine environment. As they are not a viable ground water source for any beneficial use, it is concluded that that there is no damage to the ground water system.

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**E. MINING METHOD**

***Pit Excavation***

Overburden removal from the various pit series will be accomplished by pushing with dozers and loading with scrapers. Dense and durable rock layers often require that the overburden be ripped with a dozer prior to excavation with scrapers.

Topsoil, subsoil, and other suitable material salvaged from the initial box cut of each mine series will be stockpiled for reclamation of the final cut. Unsuitable overburden and ash associated with the box cut will be stockpiled immediately adjacent to the initial pit. A minimum of two cuts must occur within a series to provide sufficient room to accommodate a live cast-back flow of soil and suitable materials. Unsuitable overburden from the second cut, however, can be cast back live into the first cut in the series. This method of operation will continue as mining progresses through each series.

***Salvage and handling of materials:***

Soils will be stripped according to characterized depths within the original approved permit. Stripping will generally be accomplished with scrapers. Soils that are not spread live (directly from stripping to reclamation) will be stockpiled on either native soil or suitable overburden. For the initial three pits in a series, these stockpiles will be located as close to the final cuts as is feasible. These stockpiled soils will be cast back onto backfilled and suitable-covered pits when mining reaches the position of the piles. Where appropriate, stockpiled topsoil will be segregated into piles according to quality (better vs. marginal), with piles staked and labeled. Topsoil from re-disturbed lands, if of dissimilar quality from native land topsoil, will be segregated from the native topsoil and will be redistributed separate from the native topsoil during reclamation. A one-scraper width buffer will be maintained between soil stockpiles and any spoil material.

Suitable material is any overburden that exists below the topsoil and subsoil, and has been determined to be chemically suitable for use as a topsoil replacement. Suitable material may be used to cap unsuitable material prior to topsoil application or as a topsoil replacement where topsoil reserves are insufficient. Salvage and replacement of this material will be accomplished using dozers and scrapers. Mining activity west of the haulroad that bisects the permit area is considered to be more of a reclamation operation because previous mining practices did not result in sufficient cover over bentonitic spoil to promote vegetation establishment. For this reason, all salvageable topsoil and suitable material buried during the prior highwall reduction will be recovered and spread across the old reclamation in an effort to increase the suitable growth medium thickness and enhance the potential for revegetation success.

Unsuitable overburden, particularly bentonitic material or bentonitic spoil (ash), will be either buried at the bottom of a pit, or will be covered with at least 2' of a combination of suitable material and topsoil.

Handling of bentonitic spoil (ash): Bentonitic materials placed on or near the surface, are detrimental to successful revegetation. When cleaning the bentonite bed within the pit the ash will be stacked along a line that is next to, and parallel with, the pit. This action will confine the ash near the pit in a position that best allows for it to be covered by the subsequent cast-back of clean materials from the next pit. Bentonite that remains on a pad following removal of bentonite piles, will be picked up and buried.

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**Progression of Operations:**

The Mine Plan currently has operations commencing through Blocks 27 - 31 which is generating subsoil and overburden that is being backcasted into preceding Blocks 24-27. The current Mine Plan is also utilizing placement of excess material into current stockpiles south and west of current mining operations, and also to the east of Block 31 as shown on the Mine Plan Exhibit MP-01. Once the Blocks 27-31 have been exhausted, backfill operations will continue through the preceding Blocks 24-27 and follow through Blocks 28-31. Stockpiled subsoil as shown on the Mine Plan exhibit MP-01 will be placed prior to topsoil placement when proper backfill has been achieved. Topsoil currently stockpiled as shown on Mine Plan Exhibit MP-01 will be placed as necessary on backfilled areas in preparation of final seeding.

The direction of future operations will begin by stripping and stockpiling topsoil in the northerly portion of Block 1A (previously referred to as Block 32) and continuing through the majority of Blocks 2A and 3A, as a part of the disturbance boundary increase request for the Large Permit conversion process. New topsoil and subsoil stockpiles will be placed to the south and west of the proposed mining areas to cover the final mining areas and avoid impacting the currently reclaimed and topsoiled areas as much as possible. After the work on Blocks 1A, 2A, and 3A, the direction of operations will utilize the proposed Bear Creek Crossing to begin in lots 32-54, located east of Bear Creek. Note that no mining activity will be taking place within an approximate 100' distance of Bear Creek. Through the lots east of Bear Creek, topsoil, subsoil and overburden generated will be stockpiled within the proposed area east of Bear Creek to transporting over the crossing. Mineral will be brought over the crossing to be stockpiled near the current piles as shown by Mine Plan Exhibit MP-01.

Generally, the existing mineral stockpile areas will be utilized until such time as they may be moved closer to mining operations. When this move occurs the current stockpile areas will be re-contoured and topsoiled in preparation for final seeding.

The proposed mining area does continue up a small drainage which drains into the existing retention pond within the mine site. Best Management Practices for stormwater control are being utilized throughout the site, but will also be enhanced near these drainage areas to minimize erosion of re-contoured mine areas and the drainage will be put back to match, as close as possible, the original contours of the existing drainage.

All current and future disturbances will take place on private lands with no state or federal lands being included. See Mine Plan Exhibit MP-01 for acreage designations and the proposed disturbance boundary.

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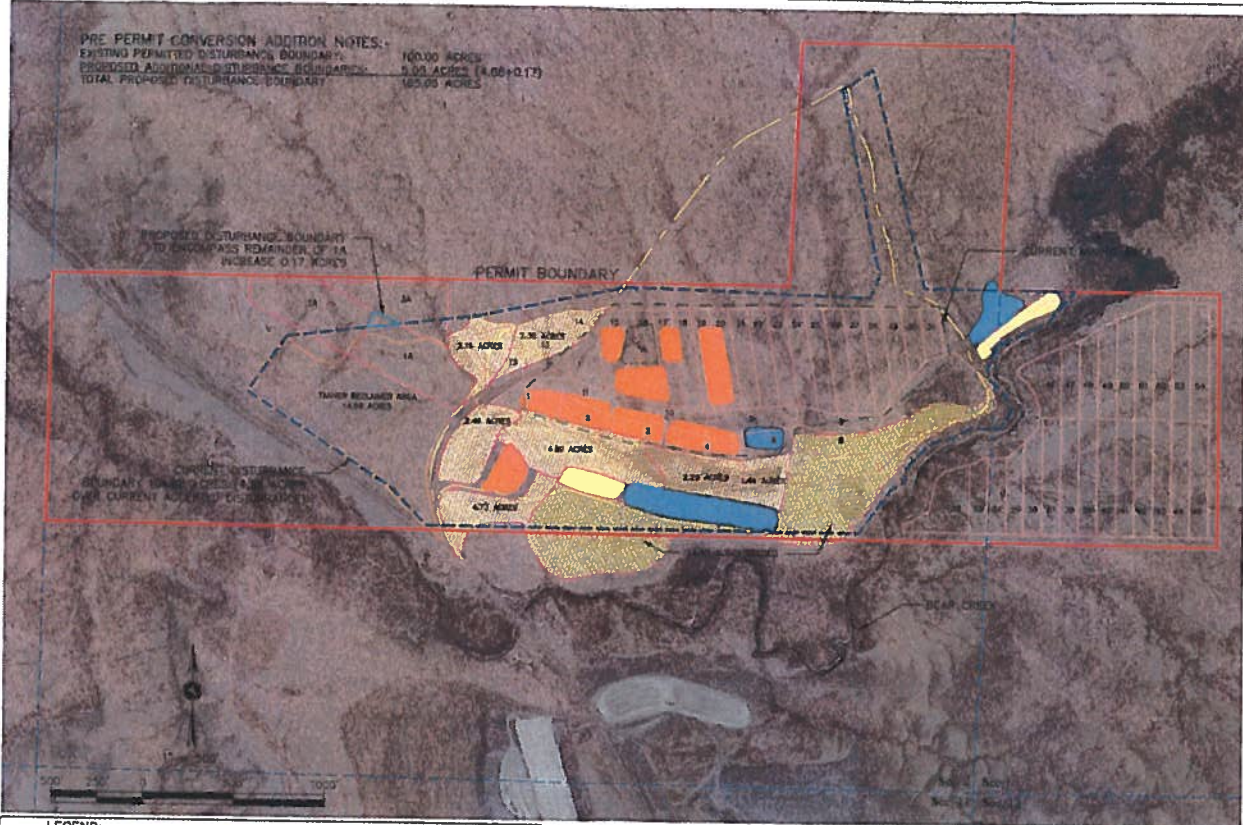
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PRE PERMIT CONVERSION ADDITION NOTES:  
 EXISTING PERMITTED DISTURBANCE BOUNDARY: 160.00 ACRES  
 PROPOSED ADDITIONAL DISTURBANCE BOUNDARY: 5.00 ACRES (4.06+0.17)  
 TOTAL PROPOSED DISTURBANCE BOUNDARY: 165.00 ACRES



- LEGEND:**
- CURRENT MINING AREA
  - MINE BLOCKS
  - - - DISTURBANCE BOUNDARY
  - PERMIT BOUNDARY
  - MINE ROAD
  - TS PILE
  - TS SPREAD
  - SUB SOIL PILE
  - MINERAL STOCKPILE
  - SEEDING AREA
  - PROPOSED BOUNDARY
  - FLOW LINE
  - - - SECTION LINE

FIELD SURVEY CONDITIONS AS OF 08/20/2013  
 BLOCKS 1-24: BACKFILLED  
 BLOCKS 24-27: CURRENTLY BEING BACKFILLED  
 BLOCKS 27-31: CURRENTLY BEING MINED  
 BLOCKS 1A-3A: NEXT TO STRIP TOPSOIL & MINE  
 BLOCKS 32-54: FUTURE MINE AREA

LQD T53N R93W  
 FEB 21 2014  
 E 1/2SENF Sec. 2  
 E 1/2W 1/2SENF Sec. 2

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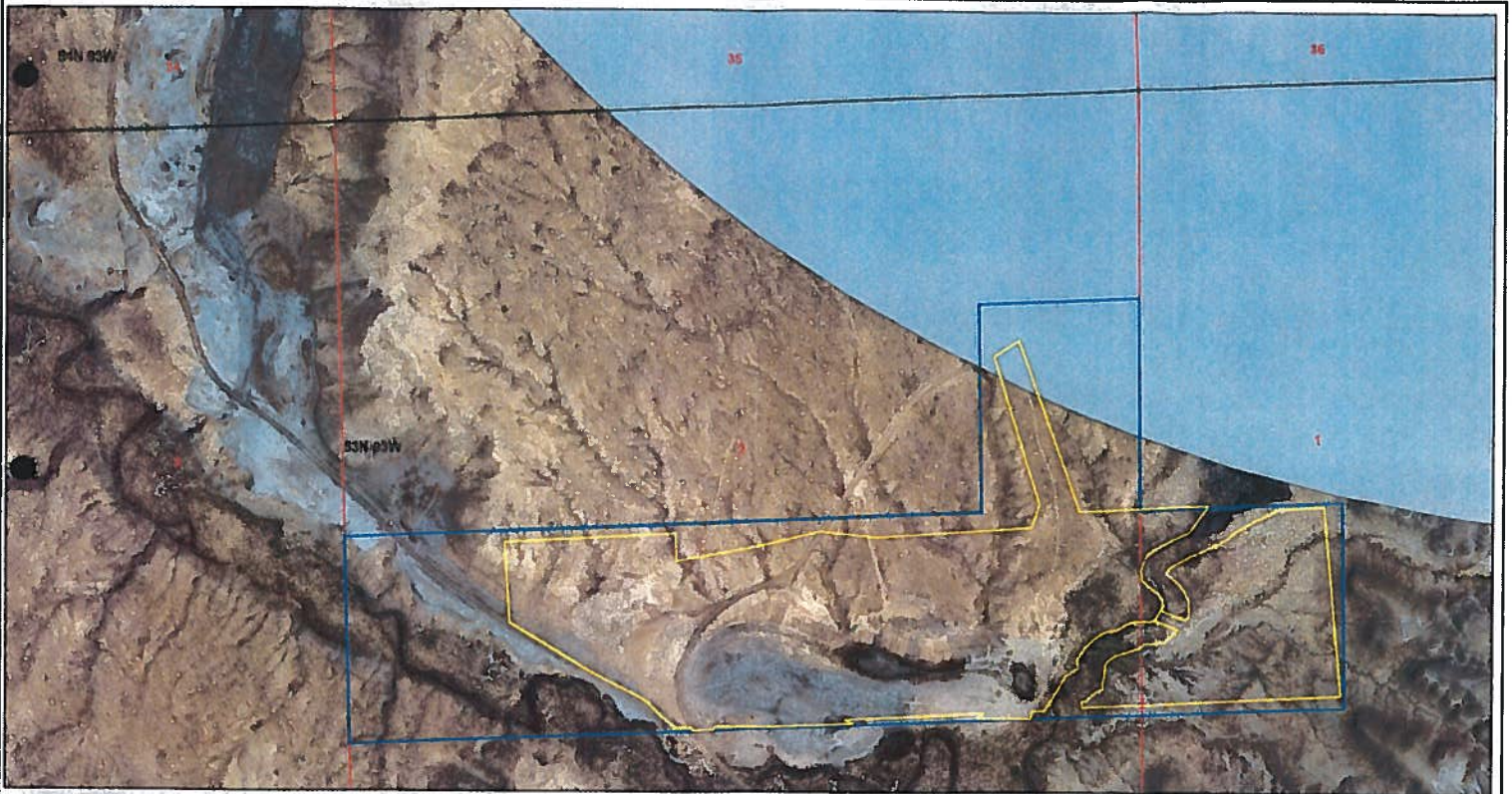
BRIAN GOOD MINING COMPANY, LLC  
 BRIAN DAYNE G. GOOD  
 3796 LANE 3  
 GREYBULL, WY 82426

BRIAN GOOD PERMIT #624(S)  
 MINE PLAN MAP - MP1  
 BIG HORN COUNTY, WYOMING  
 Township 53N, Range 93W

NO. 1	NO. 2	NO. 3	NO. 4	NO. 5	NO. 6	NO. 7	NO. 8	NO. 9	NO. 10	NO. 11	NO. 12	NO. 13	NO. 14	NO. 15	NO. 16	NO. 17	NO. 18	NO. 19	NO. 20	NO. 21	NO. 22	NO. 23	NO. 24	NO. 25	NO. 26	NO. 27	NO. 28	NO. 29	NO. 30	NO. 31	NO. 32	NO. 33	NO. 34	NO. 35	NO. 36	NO. 37	NO. 38	NO. 39	NO. 40	NO. 41	NO. 42	NO. 43	NO. 44	NO. 45	NO. 46	NO. 47	NO. 48	NO. 49	NO. 50	NO. 51	NO. 52	NO. 53	NO. 54
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DEPT OF ENVIRONMENT & NATURAL RESOURCES  
 MP01  
 6/9/07





**Map MP-2, Sage Grouse Stipulation Assessment**

300 600 1,200  
Feet



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3786 Land 32 1/2  
Greybull, WY 82426

**Legend**

- Disturbance Boundary DEC 23 2013
- Permit 624 Area Boundary
- 2-Mile Buffer of an Occupied Lake

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MINE PLAN  
Addendum MP-A

**LOWER BEAR CREEK**

**RUNOFF ANALYSIS**



**PREPARED BY:** Environmental & Civil Solutions, LLC  
**FOR:** GOOD MINING, LLC  
**DATE:** February 27, 2012  
**BY:** OTM  
**REVIEW:** TME

**Region 1 (Runoff Based on Regression Equation for Rocky Mountains)**

**VARIABLES:**

Area	3705.60 Acres	5.79	Sq Miles
Average Elevation	8656.06 Ft		
Longitude	108.0 Degrees		

Event	Peak Flow (CFS)
Q2	69.10
Q5	115.87
Q10	153.68
Q25	201.52
Q100	273.27

**Region 2 (Runoff Based on Regression Equation for Central Basins and Northern Plains)**

**VARIABLES:**

Area	28563.51 Acres	44.63	Sq Miles
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Event	Peak Flow (CFS)
Q2	181.65
Q5	455.54
Q10	731.96
Q25	1156.57
Q100	2125.15

**WEIGHTED PEAK FLOW RATE**

Event	Upper Drainage Basin		Lower Drainage Basin		TOTAL Q
	% WATERSHED	Q (CFS)	% WATERSHED	Q (CFS)	
Q2	11%	8	89%	161	169
Q5	11%	13	89%	403	417
Q10	11%	18	89%	648	666
Q15 (*)	11%	19	89%	773	793

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## HY-8 Analysis Results

### Culvert Summary Table - 96" Culvert 1

Culvert Crossing: 96" Culvert 10 year

Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
0.00	0.00	4143.50	0.00	0.0	0-NF	0.00	0.00	0.00	0.00	0.00	0.00
86.60	86.60	4146.85	2.93	3.35	2-M2c	2.01	2.00	2.00	0.85	6.78	4.22
133.20	133.20	4148.33	4.26	4.83	2-M2c	2.91	2.86	2.86	1.29	8.26	5.46
199.80	199.80	4149.52	5.39	6.02	2-M2c	3.63	3.54	3.54	1.66	9.33	6.32
266.40	266.40	4150.56	6.45	7.06	2-M2c	4.30	4.11	4.11	1.97	10.24	6.99
333.00	333.00	4151.52	7.51	8.02	7-M2c	4.96	4.62	4.62	2.26	11.08	7.55
399.60	399.60	4152.44	8.62	8.94	7-M2c	5.66	5.08	5.08	2.53	11.87	8.04
466.20	466.20	4153.37	9.83	9.87	7-M2c	6.48	5.50	5.50	2.78	12.66	8.46
532.80	532.80	4154.70	11.20	10.84	7-M2c	8.00	5.88	5.88	3.01	13.45	8.85
599.40	599.40	4156.24	12.74	11.94	7-M2c	8.00	6.23	6.23	3.24	14.28	9.20
666.00	666.00	4157.98	14.48	13.39	7-M2c	8.00	6.54	6.54	3.45	15.14	9.52

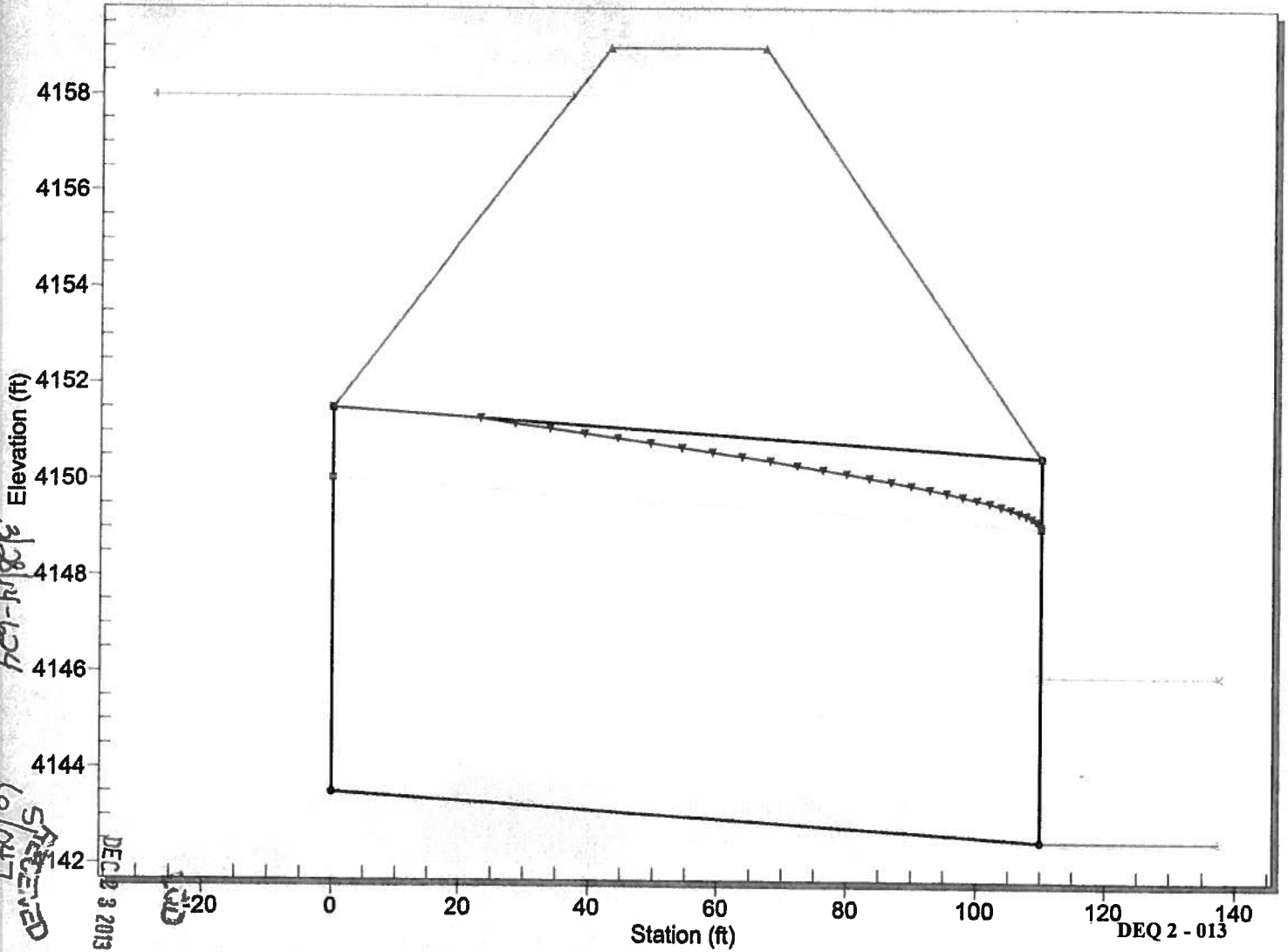
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Crossing - 96" Culvert 10 year Design Discharge - 666.0 cfs  
Culvert - 96" Culvert 1, Culvert Discharge - 666.0 cfs



## HY-8 Analysis Results

### Culvert Summary Table - Culvert 2

Culvert Crossing: dual 66" 10 year

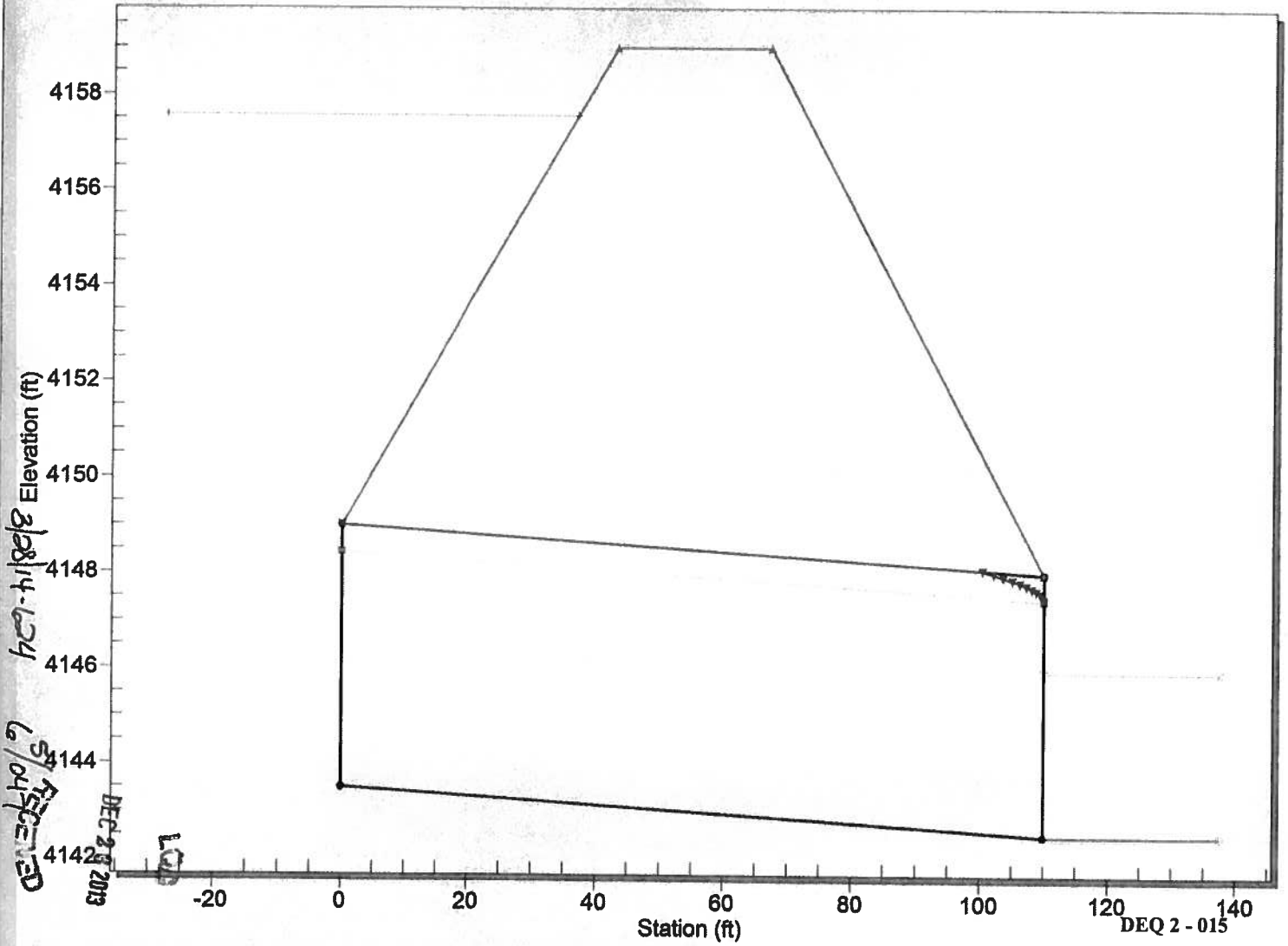
Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
0.00	0.00	4143.50	0.00	0.0	0-NF	0.00	0.00	0.00	0.00	0.00	0.00
86.60	33.29	4146.08	2.30	2.58	2-M2c	1.62	1.56	1.56	0.85	6.02	4.22
133.20	66.58	4147.24	3.37	3.74	2-M2c	2.36	2.23	2.23	1.29	7.36	5.46
199.80	99.90	4148.18	4.31	4.68	2-M2c	2.99	2.76	2.76	1.66	8.36	6.32
266.40	133.19	4149.03	5.24	5.53	7-M2c	3.61	3.21	3.21	1.97	9.26	6.99
333.00	166.50	4149.86	6.23	6.38	7-M2c	4.33	3.60	3.60	2.28	10.09	7.55
399.60	199.81	4150.86	7.36~	7.25	7-M2c	5.50	3.95	3.95	2.53	10.93	8.04
466.20	233.10	4152.18	8.68~	8.41	7-M2c	5.50	4.27	4.27	2.78	11.79	8.46
532.80	266.41	4153.72	10.22~	10.07	7-M2c	5.50	4.54	4.54	3.01	12.71	8.85
599.40	299.70	4155.51	12.01~	11.82	7-M2c	5.50	4.76	4.76	3.24	13.71	9.20
666.00	333.00	4157.57	14.07~	13.73	7-M2c	5.50	4.95	4.95	3.45	14.79	9.52

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# Crossing - dual 66" 10 year, Design Discharge - 666.0 cfs

Culvert - Culvert 1, Culvert Discharge - 333.0 cfs



CENTRAL BASINS AND NORTHERN PLAINS REGION 1

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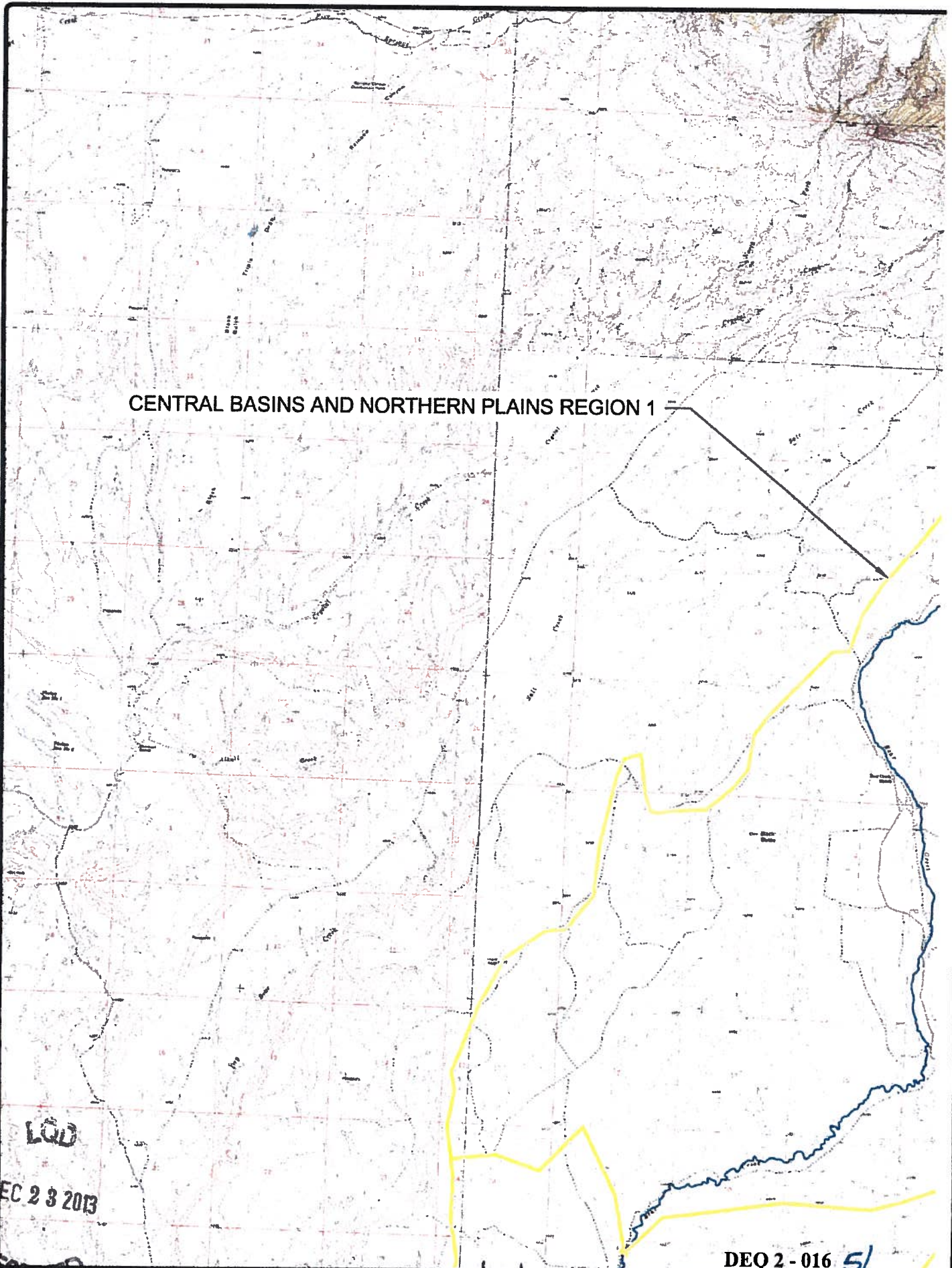
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CENTRAL BASINS AND N ORTHERN PLAINS REGION 1

CENTRAL BASINS AND NORTHERN PLAINS REGION 2

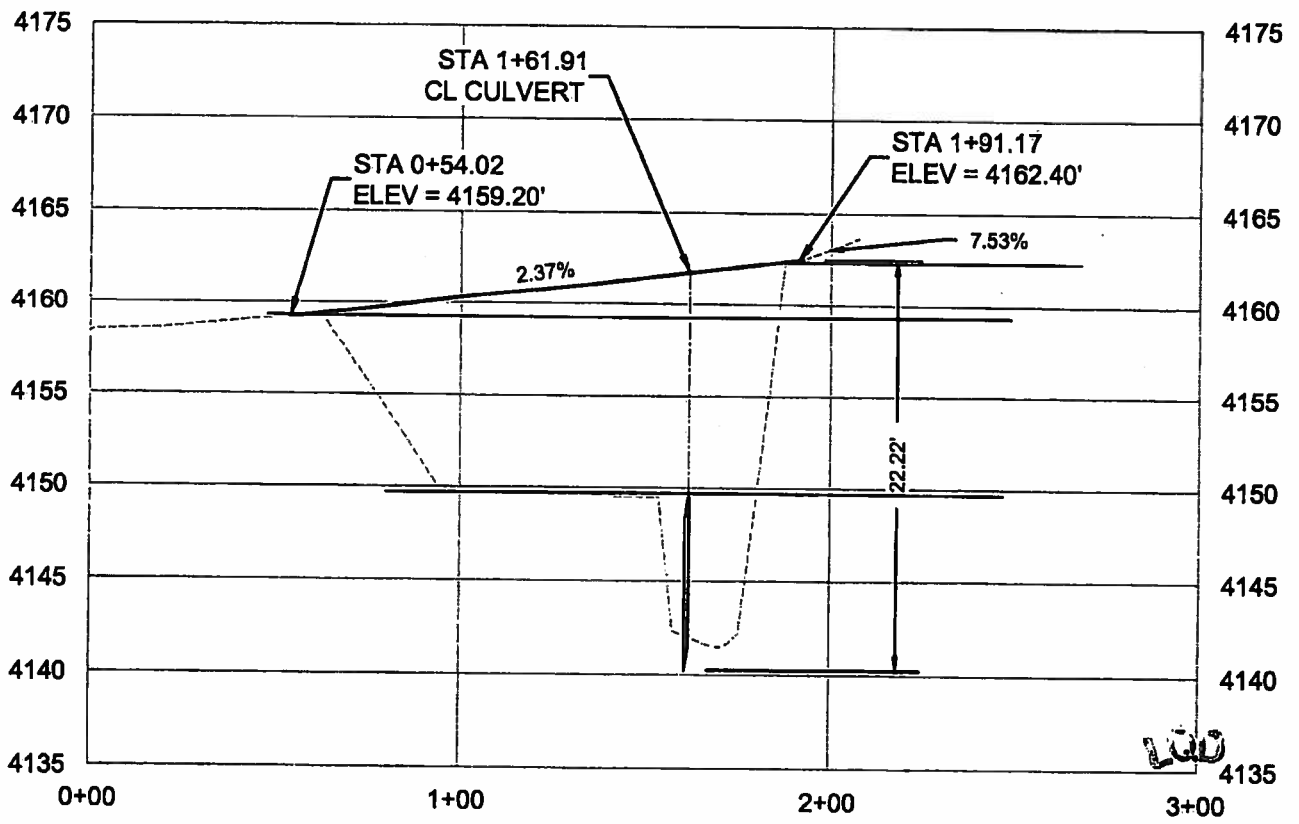
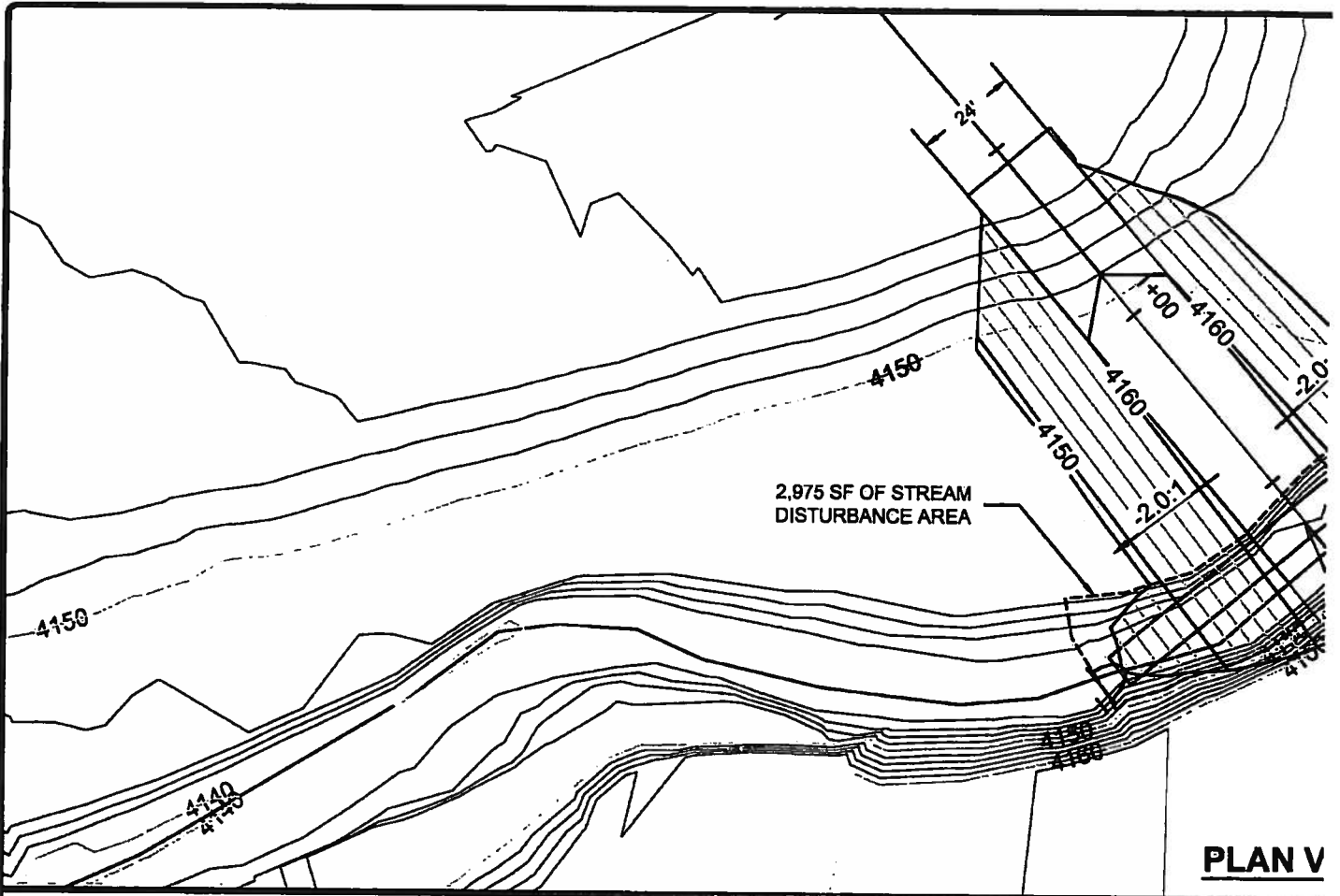
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**SIDE VIEW**  
PROPOSED ROADWAY

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Brian Good  
3796 Lane 32½  
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RECLAMATION PLAN

## RECLAMATION PLAN FOR GOOD MINING PERMIT 624(S)

TO ACCOMPANY MINE PLAN CONVERSION REQUEST DECEMBER 18, 2013

### POST MINING LAND USES

Livestock grazing and wildlife habitats are the post-mining land uses for lands affected by mining activities on the amendment area.

### CONTOURING PLAN

All mining features will be graded and contoured in such a manner that the approximate original topographic contours will be reestablished. Post mining slopes will approximate the pre-mining slopes in terms of magnitude, aspect and shape and will not exceed 4(H):1(V) unless required to blend with an adjacent native or previously reclaimed slope. The operation is designed to work under the auspices of cast back mining with the majority overburden (spoil) being returned to mined-out pits. However, material swell will necessitate the creation of overburden stockpiles, which remain as permanent reclamation features. These features will be established within the limits of prior mined-out pits, of which most of this disturbed area is considered prelaw disturbance by the WDEQ/LQD. The reclaimed spoil pile will be blended into the surrounding area, consisting of a combination of prelaw disturbance and reclaimed ground associated with current operations. Maximum height of the reclaimed spoil pile(s) is anticipated to be on the order of ten feet and the slopes will be graded to 4(H):1(V) or less prior to topsoil application and seeding.

Small ephemeral drainages which may be removed during the course of mining activities and will be reestablished at a density and gradient that mimics pre-mined conditions during the backfilling of pits and by grading and contouring. One permanent impoundment will be left as a post-mined feature near the southeast end of the permit area. In the near term, the pond will provide sediment control for the reclaimed area. Long-term, the intent of this feature is to act as a water supply source for cattle and wildlife. All reclaimed drainages within the mine area that lies between the haulroad that bisects the permit area on the west and Bear Creek to the east will flow into this impoundment with an overflow that drains into Bear Creek. The remaining reclaimed drainages will flow into Bear Creek.

### SURFACE PREPARATION FOR TOPSOIL APPLICATION

During mining, care has been taken to salvage all suitable material between the topsoil/subsoil and unsuitable overburden. This material is stockpiled separately from the topsoil and stockpiles will be identified as either "subsoil" or "suitable" in the field. Suitable material will be spread and graded prior to topsoil application to facilitate a uniform application of topsoil.

## TOPSOIL REPLACEMENT

Stockpiled topsoil will be applied to the backfilled and contoured overburden with Caterpillar 637 push-pull scrapers. Topsoil will be reapplied to approximately the original topsoil depth, but not less than 6". At a minimum 2' of appropriate cover/suitable material will be placed over re-graded spoil areas including topsoil. If the topsoil resource proves to be insufficient to provide a minimum six-inch cover over the entire reclaimed surface, suitable material will be used as the final cover.

A portion of the area that has been affected by the post-transfer mining activity is located on pre-law spoil for which there was no topsoil present. Activities on these spoils primarily consist of stockpiling various materials and staging of equipment used in the operation. Aside from covering and seeding any regraded spoil generated by post transfer operations and place on prelaw spoil, Good Mining assumes no liability for the revegetation of these prelaw spoil areas. If sufficient cover/suitable material exists, Good Mining will attempt to revegetate a portion of these prelaw lands to improve the final condition of the parcel. If there is not enough cover/suitable available, it is recognized that there will be areas where reclamation directly abuts prelaw spoil.

Topsoiled surfaces, or surfaces in final cover, will be ripped along the contour. In order to avoid contamination with underlying material, the ripping depth will be confined to the depth of the topsoil or final cover. Topsoil will be applied to the affected areas as soon as possible, although the replacement schedule for topsoil application is dependent upon the mining and backfilling schedule. Topsoil application is generally conducted during the late summer or early fall, in advance of the fall planting of the permanent seed mixture.

## POSTMINE SEDIMENT AND EROSION CONTROL

*During reclamation* sediment control will be provided using a combination of Best Management Practices (BMP's) and ASCM's. Following final contouring and topsoiling of a reclaimed area it will be ripped along the contour, which will serve to reduce any compaction present as well as create furrows that will minimize runoff potential. For reclaimed drainage channels, if determined to be necessary, straw bale check dams will be placed within the post-mined drainage to serve as energy dissipaters/sediment filters. The channel at each dam location will be slightly sub-excavated and the bales will be staked into placed such that flow is forced to remain along the centerline of the reclaimed drainage. These check dams will remain in the drainage until revegetation has been established.

If through time erosional features, such as headcuts, develop within a reclaimed channel one of several remediation measures will be implemented, depending on the conditions present. These mitigation measures include, but are not limited to: (1) armoring problematic channel reach with rock, (2) installation of rock check dams or gabion baskets keyed into the channel bed and banks to create drop structures that will reduce channel gradient, or (3) construction of point berms to force the channel to develop a more sinuous path, lessening channel gradient. (See Good Mining SWPPP for BMP typical)

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The impoundment that was created by earlier mining activity will remain as a permanent feature (stockpond) and serve as a stormwater detention pond during the interim reclamation phase.

## REVEGETATION PRACTICES

### **Cover Crops and Mulch**

If a fall seeding is not possible on a topsoiled area due to weather or other circumstances, the area will be seeded with a small grain such as barley, winter wheat or millet the following spring in order to establish a cover crop. Barley and winter wheat will be drill seeded at a rate of fifty (50) pounds per acre and millet will be applied at a drill seeding rate of fifteen (15) pound per acre. Lands seeded with a cover crop will be inter-seeded with the permanent seed mixture in the autumn of the same year.

No mulch will be applied in conjunction with the reclamation activities conducted on the amendment area.

### **Permanent Seed Mixtures**

The permanent seed mixture will be planted in the fall, generally beginning during the month of October. Seed will be planted utilizing a standard grain drill or a no-till drill. The seed will be planted approximately one-quarter to one-half inch in depth.

Species contained in the permanent seed mixture for the amendment area have been selected based on the following criteria:

- Adaptability to existing soil conditions
- Forage potential and palatability to livestock
- Forage, cover and habitat potential for wildlife
- Pre-mining presence as documented by vegetation inventory
- Reclamation success proven by previous revegetation efforts
- Contribution to species and structural diversity
- Ability to remain self-sustaining
- Commercial availability

The components of this seed mixture are listed below:

<u>Species</u>	<u>Pounds of pure live seed per acre</u>
Gardner Saltbush	4.0 lb/ac
Blue Grama	0.5 lb/ac
Bottlebrush Squirreltail	1.0 lb/ac

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<u>Species</u>	<u>Pounds of pure live seed per acre</u>
Slender Wheatgrass	2.0 lb/ac
Crested Wheatgrass	3.0 lb/ac
Russian Wildrye	2.0 lb/ac
Rocky Mountain Beeplant	1.5 lb/ac
<u>Falcata</u>	<u>2.0 lb/ac</u>
Total	16.00

### Temporary Seed Mixtures

No temporary seed mixtures will be used on the amendment area other than annual small grains previous discussed.

### Protection of Seeded Areas

If necessary, newly reclaimed (seeded) areas will be fenced to protect these areas from grazing by livestock. If fences are constructed, they will be constructed to allow the egress and ingress of wildlife species.

### RECLAMATION EVALUATION PROCEDURES

#### Reclamation Goals

All lands affected under this amendment will be reclaimed in such a manner that forage for domestic livestock grazing, wildlife forage, and wildlife habitats, will be reestablished to a condition equal to or greater than pre-mining conditions on the affected lands.

Revegetation of lands affected under Permit to Mine No. 624(s) will be considered complete and eligible for full bond release when the following criteria are met:

- 1) The vegetation species of the reclaimed land are self-renewing under natural conditions prevailing at the site;
- 2) The total vegetation cover of perennial species, (excluding noxious weed species) and any species in the approved seed mix is at least equal to the total vegetation cover of perennial species (excluding noxious weed species) on the area before mining.

- 3) The species diversity and composition are suitable for the approved post-mining land use; and
- 4) The requirements in 1), 2) and 3), are achieved during one growing season, no earlier than the fifth full growing season on the reclaimed lands.

### Evaluation of Reclamation Success

Reclamation success will be evaluated by onsite inspections with WDEQ/LQD personnel and the landowner.

Good Mining personnel will make the preliminary decision on the timing of any full bond release request, based in part upon comparison of annual observations of reclamation success and progress. In general, Good Mining anticipates that 2-3 years of accumulated reclamation may be combined in a single final bond release request. Per W.S. § 35-11-423, it is understood that the vegetation retainer portion of the bond will, in general, be held for a minimum of five years after reclamation is complete. However, should the revegetation appear to be doing exceptionally well, Good Mining may request release earlier, the approval of which is dependent concurrent acceptance by the WDEQ/LQD. In each request package, Good Mining will also provide a written statement that the reclamation is satisfactory to the surface owner.

Exhibit RP-1 illustrates the location of the prelaw spoil for which no reclamation responsibility is assumed, except areas where post-2010 mining spoil (overburden) is placed over the prelaw spoil and then covered by suitable material. As indicated earlier, if excess suitable material exists in sufficient quantity it will be spread over portions of the prelaw spoil and seeded. Should these reclamation efforts of prelaw spoil succeed and some areas where reclamation liability exists fail, allowances will be for banking the successes to offset failures or partial failures.

The majority of the area affected by mining is within a Saline Upland vegetation community type, also often referred as Salt Desert Shrub. The Lowland vegetation community is essentially confined to the Bear Creek channel and associated floodplain as shown on Exhibit RP-1. The attached photos provide documentation as to what the mined area looked like, in terms of vegetation community type, prior to disturbance. These photos will assist in selecting a Comparison Area for purposes of evaluating reclamation success. Sufficient undisturbed lands of the Saline Upland community within the Good's surface ownership and control surround the existing and proposed disturbance area, such that selecting a reasonable Comparison Area is not an issue.

### Reclamation Schedule

A pit series requires a progression of cuts before adequate space is developed to provide room to disperse the overburden from the first cut, for the management of reclamation materials and product.

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and for the effective mobilization of equipment. Live cast back of materials will begin as soon as adequate room for reclamation develops behind the active pit.

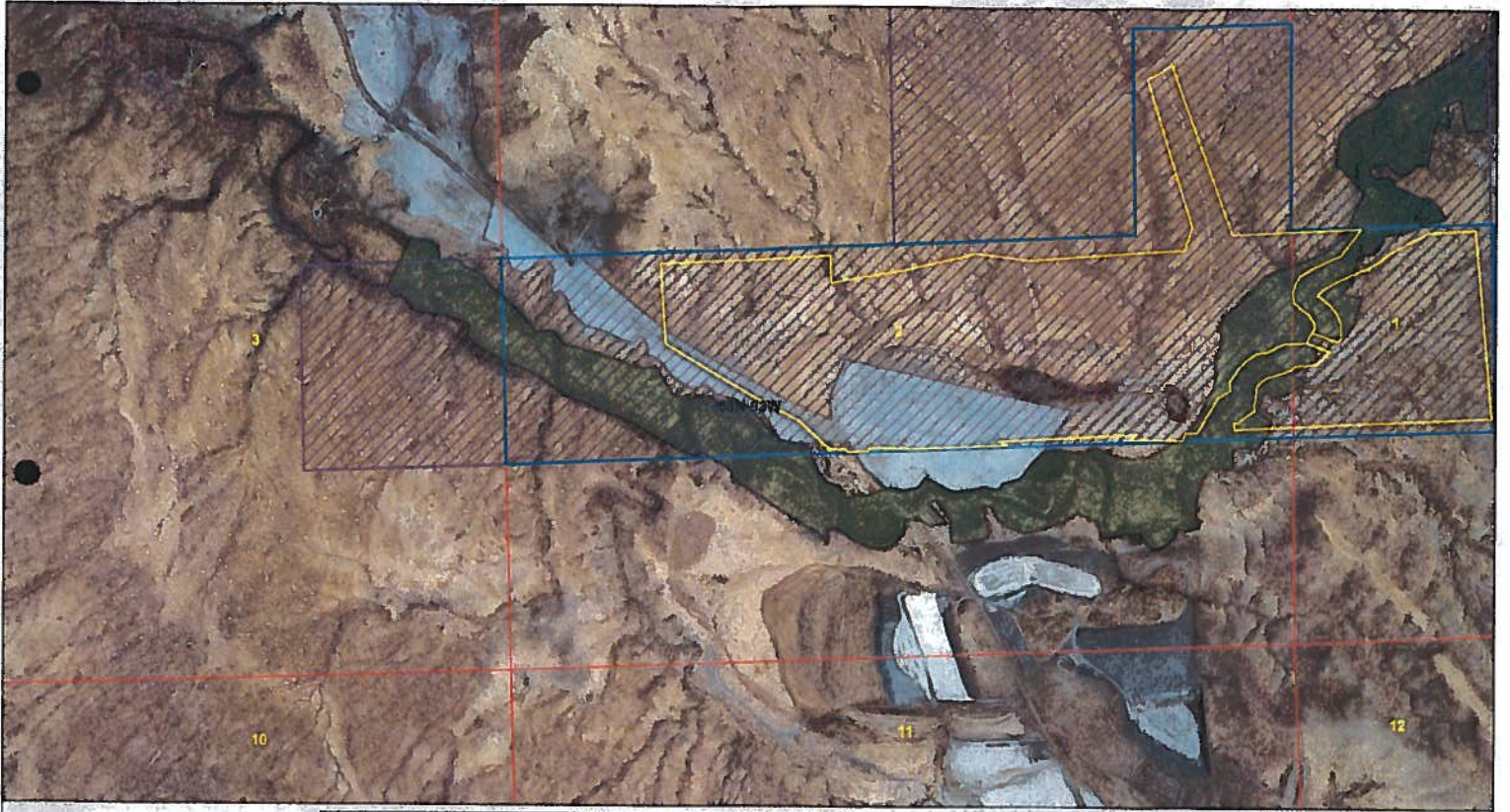
With the above consideration in mind, reclamation has been initiated and will continue until completion of mining operations within four years of the date that the land was first affected by mining subsequent to the Permit transfer and the current conversion (on areas where field drying is to take place, reclamation will begin within three years, and completed within five years, of the date that the land is first affected). Access and haul roads will be reclaimed, with culverts removed, as they are abandoned.

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0 300 600 1,200 Feet



**Legend**

- |                      |                        |
|----------------------|------------------------|
| Disturbance Boundary | Permit_624_Boundary    |
| Lowland              | Good Surface Ownership |
| PreLaw (1989) Spoil  |                        |

**RP-1 Reclamation Vegetation / Obligation Map**

WDEQ/LQD Permit 624  
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Note: All other lands not mapped as Lowland or PreLaw Spoil are of the Saline Upland Vegetation Community  
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9/26/13 Looking west at undisturbed vegetation, west of the haul road, north of Tanner reclamation



9/26/13 Looking west at undisturbed vegetation, west of the haul road, north of Tanner reclamation



9/26/13 Looking west at undisturbed vegetation, west of the haul road, north of Tanner reclamation

9/26/13 Looking west at undisturbed vegetation, west of the haul road, north of Tanner reclamation

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9/26/13 Looking north at undisturbed vegetation, west of the haul road, north of Tanner reclamation

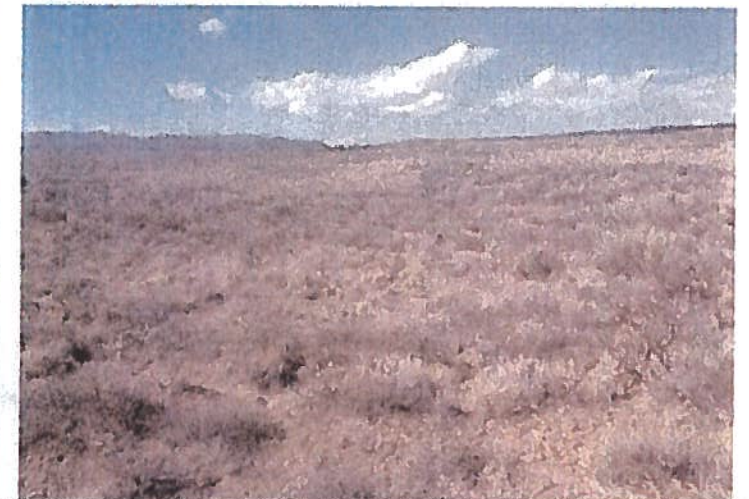


9/26/13 Looking north at undisturbed vegetation, west of the haul road, north of Tanner reclamation



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9/26/13 Looking north at undisturbed vegetation, west of the haul road, north of Tanner reclamation

9/26/13 Looking west at undisturbed vegetation, west of the haul road, north of Tanner reclamation

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 Township 63N, Range 93W  
 0 250 500 1,000 Feet  
 1 inch = 500 feet  
 N

Legend			
	Affected Area Boundary		Topsail Stockpile
	Permit 624 Boundary		Mineral Stockpile
	Mine Blocks		Subsoil Pile
			Topsoiled
			Reclaimed

**Mine Plan Map MP-1**  
 WDEQ/LQD Permit 624  
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 DEQ 2, 078

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