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Kathleen Neel - Summit County Recorder

159 Pages
12/18/2012 3:24 PM
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**④ Exempt WESTERN SKY RANCH
PLANNED UNIT DEVELOPMENT DESIGNATION**

This Planned Unit Development Designation, to be known as the Western Sky Ranch Planned Unit Development Designation, formally known as the Big Star Ranch Planned Unit Development Designation, originally approved on October 11, 2005 and originally recorded under Reception Number 827660, hereinafter referred to as the "Designation", and subsequently amended on September 25, 2012 by the Board of County Commissioners of Summit County, Colorado, hereinafter referred to as the "County," for certain real property located in Summit County and described in attached Exhibit A, hereinafter referred to as the "Property."

This Designation establishes the land uses and density that shall be permitted on the Property, a general development plan ("Plan"), development standards and conditions which must be adhered to by Laurie Middleton, Melissa Middleton, Dorothy Tyler, Sterling Trust, RGDM Ltd., DDMCWM LLC, any subsequent successors, heirs, or assigns of the same, collectively referred to herein as the "Owner/Developer of Lots 1-2 and 5-14", and any agents or representatives of such Owner/Developer, including but not limited to Danny Middleton and Rodney Allen. It also establishes conditions which must be adhered to by Philip Edward Scuderi (as to Lots 3 and 4), Louis Lodge Trust I and Louis Lodge Trust II (as to Lot 16), Jack A. Burgan, Rosemary S. Burgan, and Scott L. Burgan (as to Lot 17), MAC La Mancha, LLC and JLC La Mancha, LLC (as to Lots 18, 19, 20, and 21) and their successors, heirs, or assigns, collectively herein referenced to as "Additional Owners". This Designation also specifies improvements that must be made and conditions which must be fulfilled in conjunction with this Designation by the Owner/Developer. It is expressly acknowledged by all parties to this Designation that the obligations placed upon Owner/Developer as the primary applicant and developer of this Property, and the dedications and improvements associated therewith, including without limitation all subdivision improvements, acquisition and dedication of trail easements, establishment of covenants and deed restrictions, and other such matters primarily related to the future subdivision and platting of the Property, are significantly distinct from the obligations of the Additional Owners. Accordingly, in section D below, a table delineating the specific obligations of the Additional Owners under this Designation is provided.

Where this Designation does not address a specific development standard or requirement of the Summit County Land Use and Development Code currently in effect or hereinafter amended, hereinafter referred to as the "Development Code", the provisions of the Development Code shall apply. Where the Designation addresses a specific development standard or requirement, the provisions of this Designation shall supersede the provisions of the Development Code. Use and development of the Property shall be in accordance with the specific requirements of this Designation and in substantial compliance with the PUD Plan attached hereto as Exhibit B, and the following objective:

- Minimize the visual impacts and soil disturbance associated with development of each lot. This objective can best be accomplished by minimizing tree clearing, reducing driveway length, utilizing natural and/or natural looking exterior colors and materials, and locating disturbance envelopes away from steep slopes and visually sensitive areas.

A. Density, Permitted Uses, Accessory Uses and Guest Home

1. Permitted Density and Uses

One single family dwelling is permitted on each lot according to the following provisions:

| <u>Lot</u> | <u>Size of Disturbance Envelope</u> | <u>Maximum Structure Size¹</u> |
|---------------------|-------------------------------------|---|
| Lots 1 & 2, 4-7 | 10,000 square feet | 7,000 square feet |
| Lots 8-14 & 18-20 | 9,000 square feet | 6,000 square feet |
| Lot 3 | 14,000 square feet | 7,000 square feet |
| Lot 16 | 60,000 square feet | 7,000 square feet |
| Lot 17 ² | | |
| Primary Residence | 45,147 square feet | 7,000 square feet ³ |
| Guest Home | 5,000 square feet | 2,363 square feet |
| Lot 21 | 10,000 square feet ⁴ | 7,000 square feet |

Tract Descriptions

Historic Mine Sites A and B: No improvements to those areas are permitted except for those required by or expressly allowed by the Colorado Geological Survey. Both Mine Sites A and B are zoned exclusively as open space and historic mine preservation. No density is allocated on either such mine site parcel, and neither parcel is eligible for any transfer of density, residential density, or the erection of any structures or improvements, for recreation, mining, residential, or any other purposes. Any plat that includes the Historic Mine Sites shall include a plat note with this same restriction, and recordation of such final plat shall be subject to a covenant with the County effectuating the same.

2. Accessory Uses

Accessory uses associated with the single-family residential dwellings shall be permitted within the required disturbance envelope or agricultural disturbance envelope (Please refer to Section B.1) as follows:

- a) Private attached or detached garage limited in size based on provisions set forth in the Development Code, except that the maximum floor area for the garage(s) shall be 1,000 sq. ft. for each primary structure. On Lot 17, the existing 760 square foot garage shall be converted to storage building/shed prior to the issuance of a certificate of occupancy for the primary residence.

¹ Maximum structure size only pertains to the primary dwelling which is measured according to the Development Code.

² This lot is also permitted a 181,862 square foot agricultural disturbance envelope, a 45,147 square foot primary residence disturbance envelope and 5,000 square foot guest home disturbance envelope. Any unused portion of the primary residence disturbance envelope may become part of the agricultural disturbance envelope.

³ This does not include the guest home, barn, outbuildings or other accessory structures or buildings allowed in addition to the maximum square footage allowed.

⁴ A 20,000 square foot "wall/landscaping" disturbance envelope is also allowed on this lot as shown in Exhibit B.

- b) Accessory apartments or caretaker units are expressly prohibited on all lots within the Property. Provided, however, on Lot 17 a guest home of 2,363 square feet is allowed within the 5,000 square foot disturbance envelope in accordance with the provisions set forth in this Designation. A Transferable Development Right ("TDR" equating to 4,356 square feet of floor area) was transferred to Lot 17 to allow for the guest home, but the floor area density remaining beyond 2,363 square feet of floor area (1,993 square feet of floor area) was extinguished. Therefore, the guest home may not be enlarged to add additional floor area without an amendment to the PUD. Lot 17 may not be subdivided in any manner so as to create separate property interests in the primary residence and the guest home. The guest house may not be rented short or long term separately from the primary dwelling unit on Lot 17.
- c) On Lot 17, an agricultural disturbance envelope of 181,862 square feet is permitted as an accessory use, limited to a maximum of four horses for private use only by the owner of said lot. Other similar livestock (llamas, mules, etc.) may be permitted by the Planning Department based on the animal keeping provisions of the Development Code. A barn, corral and other agricultural buildings are permitted anywhere within the agricultural disturbance envelope and/or the primary residence disturbance envelope on the plat. The barn and other agricultural buildings are permitted with a maximum, combined footprint of 4,000 square feet total. Agricultural buildings shall meet the same standards for exterior colors, materials, and lighting, as set forth for the single-family dwellings in this Designation.
- d) Home occupations are an accessory use in accordance with the requirements of Section 3810 of the Development Code, and limited to those deemed to have "no impact".
- e) Storage buildings/sheds are an accessory use limited to a total of 500 square feet of floor area and required to be located in the disturbance envelope, except that on Lot 17, the storage buildings/sheds are limited to a total of 760 square feet of floor area and the disturbance area is limited to 997 square feet.
- f) Residential outdoor storage, including but not limited to, storage or parking of recreational vehicles, boats, and utility trailers is an accessory use in accordance with the requirements of Section 3815 of the Development Code.
- g) Use as a bed and breakfast is expressly prohibited on all lots within the Property.

B. Development Standards

The development of single family dwellings, the guest home on Lot 17, and the development of accessory uses related thereto shall comply with the following development standards:

1. Development Areas and Disturbance Envelopes

- a) Each single family home and the guest home on Lot 17 shall be located entirely within the disturbance envelope as shown in Exhibit B, and shall be designated on the required plat for the Property. Single family dwelling development and the guest home on Lot 17 shall be subject to site plan review and the development criteria as outlined in Section B (Development Standards) of this Designation and the applicable provisions and development review process of the Development Code. For Lots 3, 4, and 17, a subdivision exemption plat must approved and recorded showing the location of the driveway access restriction areas and disturbance envelopes as approved under the 2011 PUD Modification and shall be in substantial compliance with the locations shown on Exhibit B.
- b) Minor flexibility in the shape and location of the disturbance envelope as shown in Exhibit B may be permitted at the time of platting provided the location meets the

requirements of this Designation and the Development Code, and remains in general conformance with the applicable master plans.

- c) Once platted, disturbance envelopes or the one agricultural disturbance envelope may only be re-located, or modified through the subdivision exemption process set forth in Chapter 8 of the Development Code, or other appropriate process as set forth in such Development Code. Re-locations or modifications of the disturbance envelopes or the agricultural disturbance envelope shall be in substantial compliance with the requirements of this Designation and the Development Code, and remain in general conformance with the applicable master plans, and shall not be increased in size from the size limit established in this Designation.
- d) Prior to the issuance of a grading or building permit, the limits of the disturbance envelope and the one permitted agricultural disturbance envelope shall be surveyed and all corners staked. Orange construction fencing, or other fencing approved by the County Planning Department, shall be installed along the surveyed disturbance envelope and shall remain in place for the duration of construction until a Certificate of Occupancy is issued, or until the Planning Department deems it no longer necessary.
- e) All residential uses and associated accessory uses shall be located entirely within the disturbance envelope, including but not limited to roof driplines, decks, garages, sheds, and wells. However, wells may be located in the driveway disturbance area. All utilities shall be located within the Driveway Access Restriction Areas or the 50 foot easement along the roads to ensure that additional trees are not removed for the installation of utilities. Septic systems are permitted outside of the disturbance envelope; however, the closest edge of the septic system shall not be more than 20 feet from the edge of the disturbance envelope. No soil disturbance or tree removal is allowed outside of the disturbance envelope except for buried utilities as allowed herein, fire mitigation as required by the County, forest management, driveway or roadway construction, and the following limited improvements expressly provided for by this Designation: landscaping, berms, rock tree wells, driveway security gates, small retaining walls, grading and revegetation improvements in accordance with the applicable provisions set forth in this Designation. Tree removal for forest management shall only be allowed by the County with documentation from a certified forester, indicating the need for the tree removal, submitted to the Planning Department for review and approval. Tree removal for Pine Beetle infestation may be removed without prior County approval. On Lot 17, all agricultural uses must be located entirely within the designated agricultural disturbance envelope or the disturbance envelope for the primary residential structure.
- f) Septic Systems shall be located in a manner that causes the least visual impact from the valley floor. Prior to the issuance of a grading or building permit, a detailed septic system plan and a detailed septic installation plan shall be submitted for review and approval by the Planning and Public Health Departments. Soil disturbance shall be limited for septic systems and for the installation of such systems, such limitation to be effectuated through the design techniques of such systems that reduces earth disturbance, and also by the utilization of small machinery to install such a system.
- g) Prior to the issuance of a grading or building permit, a tree survey of the significant trees (defined as conifers with eight (8) inches or greater caliper and deciduous trees with a caliper of four (4) inches or greater) on the lot within 20 feet of all sides of the disturbance envelope shall be provided as a part of the submittal requirements for the required site plan review. Removal of such significant trees as surveyed without prior approval of the County shall be considered a violation of this PUD and subject the property owner to appropriate enforcement action. Staff may also require that if trees outside the disturbance envelope are removed without the prior approval of the County, such trees shall be replaced on a caliper for caliper basis, up to a maximum of 25 feet. If

a coniferous tree is illegally removed, replacement trees shall either be Colorado Spruce, Bristlecone Pine or Engleman Spruce. Lodgepole Pines are prohibited from being used as replacement trees. If an Aspen tree is illegally removed, then the replacement tree may be an Aspen tree, or other tree as approved by the Planning Department. The size of the replacement tree shall be determined based on the relative value of the tree that was removed and the amount of disturbance required to plant the new tree. Planning Staff may determine the location of the replacement tree within or outside of the disturbance envelope, with an emphasis on locating such to reduce the visual impacts of structures from the valley floor. For any trees that need to be replaced due to illegal tree clearing, the owner shall submit a Site Plan Improvements Agreement and a performance bond. The replacement trees shall have a two year warranty period, to be secured by said bond, in order to ensure their successful establishment.

- h) Remediation and revegetation of exploration pits and mine tailings outside of disturbance envelopes shall be permitted where necessitated upon the Property. No trees shall be removed for this remediation and revegetation unless approved in advance by the Planning Department. Regardless of the amount of disturbance, a grading and excavation permit is required for all such remediation and revegetation work.
- i) All disturbance envelopes shall be located a minimum of 25 feet from all right-of-ways as required by this Designation, except for the "wall and landscaping" disturbance envelope on Lot 21 and the tree well area on Lot 11 as depicted on Exhibit B.
- j) Except for Lots 3, 16, and 17, disturbance envelopes with average slopes less than 20% are limited to 10,000 square feet. Disturbance envelopes with average slopes 20% or greater are limited to 9,000 square feet. No disturbance envelope within the Property shall be located in an area where slopes average 30% or greater, as measured from the uphill boundary to the downhill boundary of the disturbance envelope. The size of the disturbance envelope for Lots 3, 16, and 17 shall be per the standards set forth in Section A.1 of this Designation.
- k) Materials storage necessary for subdivision improvements and the construction of single-family dwellings shall be allowed in the Property subject to the following provisions:
 - i. Materials storage areas shall be allowed for materials storage only when there is an active building permit or grading and excavation permit within the Property.
 - ii. In addition, a temporary materials storage location may be permitted on a developer-owned lot, for individual lot owners within the PUD, at the discretion of the developer and subject to approval by the Planning Department. A building permit must be issued and active for the lot from which materials will be stored on the off-site materials storage area. The developer shall be allowed to rough-in a driveway to utilize as a dedicated materials storage area provided the applicable provisions of this Designation are met. At no time shall more than one lot be used for an off-site materials storage area.
 - iii. Each materials storage area will be enclosed by a four (4) foot high construction fence, or other fencing approved by or deemed necessary by the Planning Department.
 - iv. A grading and excavation permit is required to be approved before any tree is removed or grading work permitted within any materials storage areas.
 - v. All materials storage areas shall be in compliance with the lead remediation standards set forth in Section B.10 of this Designation.
 - vi. All materials storage and construction activities associated with construction on each lot shall be kept entirely within the driveway access restriction areas and/or within the disturbance envelopes as shown in Exhibit B.
 - vii. Prior to the issuance of the applicable Certificate of Occupancy, all equipment and materials associated with the applicable Certificate of Occupancy shall be

removed from the associated temporary materials storage area on such individual lot.

2. Driveway Access Restriction Areas

- a) All driveways accessing each lot shall be located within the “Driveway Access Restriction Areas” shown on Exhibit B.
- b) In order to limit site disturbance to the greatest extent practicable, no driveways shall be allowed to be looped, except for the existing looped driveway on Lot 17.
- c) Minor flexibility in the shape and location of the Driveway Access Restriction Areas as shown in Exhibit B is permitted at the time of platting provided the location meets the requirements of this Designation and the Development Code, and maintains general conformance with the applicable master plans.
- d) Once platted, Driveway Access Restriction Areas shall be in substantial compliance with the requirements of this Designation and the Development Code, and be in general conformance with the applicable master plans, and shall not be increased in size from the size limit shown on Exhibit B of this Designation. When considering modifications to Driveway Access Restriction Areas, the following design standards shall apply: 1) avoid slopes 30% or greater to the greatest extent practicable, and 2) locate the driveway in a manner that minimizes visual impact from the valley floor.
- e) The Owner/Developer shall submit a detailed grading and drainage plan for each driveway as a part of the preliminary plat submittal documents in order to ensure that the Driveway Access Restriction Areas are located in an area that will minimize soil disturbance during construction.
- f) Prior to the issuance of a grading or building permit for each individual lot, the limits of the Driveway Access Restriction Areas shall be located and all corners staked. Construction fencing, or other fencing approved by the Planning Department, shall be installed along the Driveway Access Restriction Areas boundary and shall remain in place for the duration of construction until a Certificate of Occupancy is issued, or until Planning Staff deems it no longer necessary.
- g) Any shared driveways shown in Exhibit B may be roughed-in or fully constructed for only those areas that utilize shared use after a plat for the applicable lots is approved by the Board of County Commissioners subject to review and approval by the County Engineer. The driveways for Lot 18 and for Lot 17 may also be roughed in or fully constructed subject to review and approval by the County Engineer.
- h) Where any shared driveways are shown in Exhibit B, a common driveway construction and maintenance agreement shall be recorded prior to the recordation of a plat for such properties.
- i) Access shall be allowed in the approved driveway locations on a limited basis per the applicable requirements of the Engineering Department for the sole purpose of forest management.
- j) Access to any improvements within the agricultural envelope on Lot 17 shall be taken from the existing looped driveway on Lot 17 through the Driveway Access Restriction Areas shown on Exhibit B. The driveway for the barn, corral and/or other agricultural buildings may be located anywhere within said agricultural envelope.
- k) Prior to the issuance of a grading permit for the driveway on Lot 17 which accesses the primary residential disturbance envelope, a detailed landscaping, revegetation, and berm design plan in accordance with Section 3600 et. seq. of the Development Code shall be submitted and shall be in general conformance with the plans shown in Exhibit E. The landscaping associated with this driveway shall be subject to a two year warranty period in accordance with Section 3608 et. seq. of the Development Code.

3. Building and Structure Height (as measured using the methodology of the Development Code)

- a) Except for Lots 3, 4, 16, 17, and 21 all structures are limited to a maximum height of 32 feet. On lots 3, 4, 16, 17, and 21 all structures are limited to a maximum height of 35 feet. Such heights shall be as measured pursuant to the Development Code
- b) Agricultural Structures: Building heights for agricultural structures as permitted only on Lot 17 shall not exceed 35 feet pursuant to the Development Code.
- c) All structures within one foot of the height limitations set forth herein shall be subject to an improvement height certification to ensure that these limits are adhered to.

4. Colors and Materials

All buildings, structures and roofs, throughout the Property, including all agricultural buildings on Lot 17, shall have non-reflective materials and non-mirrored glass, and shall have dark and subdued natural colors that blend into the natural colors of the mountain backdrop. To meet this requirement, dark browns and dark, coniferous greens are strongly encouraged. Other colors may be used only as accents for window trim, fascia trim, deck trim and railings, and other building trim work to provide for differentiation in architectural detail. Prior to the issuance of a building permit, a colors and materials board shall be submitted to be reviewed and approved by the Planning Department.

The wall permitted on Lot 21 and any other walls constructed throughout the Property shall utilize natural, or naturally appearing materials. Colors shall blend with the natural backdrop. Prior to construction of any wall, a colors and materials board shall be submitted to be reviewed and approved by the Planning Department.

5. Exterior Light Fixtures

- a) Exterior light fixtures shall be full cut-off luminaries.
- b) Exterior lighting fixtures, which are not attached directly to the residential structure, shall be limited to a maximum height of seven feet above finished grade.
- c) No lighting shall be permanently attached or affixed to any tree. This restriction shall not prevent the use of temporary seasonal lighting in trees.
- d) Exterior lighting fixtures which are attached to the residential structure shall be limited to a maximum height of 15' above finished grade, except for exterior porch or deck lighting, which shall be limited to a maximum height of 8' above the deck or floor of the area served by such light.

6. Design Standards

In addition to the specific design standards set forth in this Designation, structures shall be subject to existing and future design standards set forth in the Development Code that are applicable to single family development.

7. Fencing, Accent Walls, Retaining Walls and Security Gates

- a) Residential fencing per the most comparable fencing provisions of the Development Code is only allowed within the disturbance envelopes. Guardrails along roadways as required for safety are permitted, and may be required.
- b) On Lot 17 only, fencing shall be permitted for equestrian purposes, and is limited to defining the edge of the agricultural disturbance envelope. Fencing shall be open post and rail fencing, livestock fencing or other fencing permitted by the Development Code. Notwithstanding the foregoing fencing provisions, in the event Summit County adopts wildlife friendly fencing standards in the Development Code, all agricultural fencing subsequently constructed on Lot 17 shall meet the approved wildlife friendly fencing standards.
- c) A wall and gate is permitted in the “wall/landscaping” envelope on Lot 21. The maximum height of the wall shall be six (6) feet. Natural or naturally appearing materials shall be used and colors shall blend with the natural backdrop according to the colors and material provisions set forth in this Designation. Prior to construction of the wall and gate, the owner shall submit an indemnification agreement releasing the County from any liability associated with damage to the wall or gate, if those improvements are located in the Right Of Way. Further, prior to the construction of the wall and gate, approval of such improvements shall be obtained from the Red, White, and Blue Fire Protection District.
- d) Small retaining walls and driveway security gates are allowed outside of the disturbance envelopes, within or outside of the Driveway Access Restriction Areas, on each lot throughout the Property. Grading necessary for landscaping and revegetation adjacent to the driveway security gates is allowed. Any areas disturbed for the installation of the driveway gates, retaining walls and landscaping must be brought back to a natural state and free of noxious weeds. The retaining walls shall be constructed of natural or natural appearing materials, and shall be less than four feet (4') in height. The retaining walls shall meet all applicable requirements of the Development Code and all applicable provisions of this Designation, including, but not limited to Section B.4 Colors and Materials, Section B.7 Fencing, Accent Walls, Retaining Walls and Security Gates, and Section B.9 Landscaping. Prior to the construction of retaining walls or driveway security gates on any lot in the Property, a detailed plan must be submitted to the Planning Department for review and approval.
- e) Small rock tree wells and associated landscaping and grading improvements to accommodate the planting of trees on steep slopes are allowed outside of the disturbance envelopes, within or outside of the Driveway Access Restriction Areas, on each lot throughout the Property. Small rock tree wells are specifically allowed on Lot 11 in the location shown on Exhibit B. The rock tree wells shall meet all applicable requirements of the Development Code and all applicable provisions of this Designation

8. Environmental Standards

- a) All disturbance envelopes shall be located in areas with slopes that average less than 30%, as measured from the uphill boundary to the downhill boundary of the disturbance envelope. Prior to approval of the preliminary plat, the Owner/Developer shall submit a certified topographic survey of each disturbance envelope on each lot (including but not limited to the agricultural disturbance envelope) and for the main access roads and driveways where disturbance is proposed, and clearly distinguish slopes that are 20% or greater and slopes that are 30% or greater, on average, as measured from the uphill

boundary to the downhill boundary of the disturbance envelope. The wall/landscaping disturbance envelope on Lot 21 contains slopes greater than 30%. The purpose of this envelope is to allow an accent wall adjacent to the roadway and allow for regrading, revegetation, erosion control and landscaping of the steep slopes and any other areas within this envelope.

- b) Where any portion of a disturbance envelope or development is proposed on slopes 20% or greater, the following provisions shall apply:
 - i) Stepped retaining walls for site grading shall be used in lieu of excessive cut and fill. No retaining wall shall exceed four feet (4') in height and, where two or more retaining walls are constructed one above the other, in a parallel fashion, they shall be constructed at least three feet apart so as to allow an area for landscaping between the top of the lower wall and the base of the upper wall.
 - ii) Grading or excavation outside of the perimeter wall of a structure for the purpose of lowering existing grade to accommodate a door or a window shall not exceed four feet below existing grade. However, this restriction shall not apply to grading or excavation necessary for garage access or for window wells.
- c) Bear-proof trash containers shall be required for all single family dwellings within the Property.
- d) All lots in the Property shall abide by the wildlife provisions set forth in the covenants for the subdivision which shall be recorded with each plat. The wildlife provisions in the covenants for each filing shall be consistent with the covenants recorded with this first filing in the Western Sky Ranch Subdivision, and the Summit County Land Use and Development Code, at all times. The Western Sky Ranch Homeowners Association ("HOA") shall take affirmative measures, including annual mailings and discussion items at regularly scheduled HOA meetings, to ensure that the "Wildlife Habitat Assessment for Eureka Estates" dated March 9, 2004 is made available and distributed regularly to all homeowners, and that all homeowners are educated as to the mitigation measures contained therein.

9. Landscaping

- a) Landscaping improvements are allowed outside of the disturbance envelopes, within or outside of the Driveway Access Restriction Areas, on each lot throughout the Property. Landscaping improvements are limited to grass, flowers, shrubs, trees, berms, and small rock tree wells. Any area disturbed for the installation of landscaping must be brought back to a natural state and free of noxious weeds. Drip irrigation systems are allowed inside and outside of the disturbance envelopes as specified below. Sod is not permitted outside of the disturbance envelope. Hardscape materials, including but not limited to, flagstone and patios are not permitted outside of the disturbance envelope. The installation of landscaping outside of the disturbance envelope shall be performed in a manner that minimizes overall site disturbance through the utilization of small equipment and other similar measures.
- b) Irrigated landscaped areas shall be covered by a minimum of 2" of topsoil and revegetation with a Summit County native, weed-free grass seed mixture.
- c) Drip irrigation shall be utilized where irrigation systems are utilized. Spray irrigation is prohibited except for the initial irrigation to establish native grass if such irrigation is permitted by the existing water rights.
- d) All irrigation systems shall be equipped with a rain sensor to prevent irrigation if it is raining or if the soils are moist. All irrigation systems shall have timers.
- e) All disturbed areas on a lot, outside of the designated irrigated landscaped area, must be brought back to a natural state and remain free of noxious weeds.

- f) Per Colorado Revised Statute 35-5.5-101 et seq. and as adopted by the Summit County Board of County Commissioners on May 24, 2005, all property within this Designation shall remain free of noxious weeds.
- g) All disturbed areas must be smooth and free of rocks. Rocks may remain in those areas where they are used for a xeriscape landscape feature.
- h) All disturbed slopes greater than 2:1 shall be netted with an erosion control blanket.
- i) Revegetation in areas requiring lead remediation shall be in accordance with the approved remediation plan as set forth in Section B.10 below.
- j) Berms are allowed outside of the disturbance envelopes, within or outside of the Driveway Access Restriction Areas, on each lot throughout the Property. Berms are specifically allowed on Lots 4, 5, 6 and 17 in the locations shown in Exhibit B. Any berms shall meet the applicable requirements of the Development Code and all applicable provisions of this Designation. Prior to the construction of any berms on any lot within the Property, a detailed plan must be submitted to the Planning Department for review and approval.
- k) Prior to the issuance of a grading permit for subdivision improvements, the Owner/Developer shall submit a *detailed* landscaping/revegetation plan in accordance with Section 3605 of the Code. The subdivision improvements agreement shall include a line item for all landscaping and revegetation proposed in conjunction with the subdivision improvements.
- l) Prior to the issuance of a building or grading permit for each single-family lot, a *detailed* landscaping/revegetation, and irrigation plan (if irrigation systems are utilized) shall be submitted in accordance with Section 3605 of the Development Code. The Owner/Developer of each lot shall submit a site plan improvements agreement including a line item for landscaping/revegetation and irrigation, prior to the issuance of a grading or excavation permit.
- m) All revegetation, landscaping, and irrigation installed in the subdivision and on each individual lot shall be subject to a two-year warranty period secured by a performance bond.
- n) Trees infested with Mountain Pine Beetle shall be removed in a timely manner so as to prevent the spread of the beetle. It is each property owner's responsibility to prevent and treat the spread of Mountain Pine Beetle on their property within this Designation. Trees demonstrably infested with the Mountain Pine Beetle may be removed with notice but without prior formal approval by the Planning Department.
- o) On Lot 21, a "wall and landscaping" disturbance envelope, at a maximum of 20,000 square feet, is permitted for the use of a wall, revegetation, landscaping and erosion control within this envelope. No buildings are permitted within this disturbance envelope. Prior to any revegetation and erosion control work within this envelope, a plan for such work shall be submitted to the Planning Department for review and approval. The wall shall comply with all applicable provisions of this PUD, including but not limited to Section B.4, Colors and Materials and Section B.7, Fencing and Accent Walls.
- p) Small retaining walls, small rock tree wells, driveway security gates, grading, landscaping, and revegetation improvements are allowed outside of the disturbance envelopes, within or outside of the Driveway Access Restriction Areas, on each lot throughout the Property. Small rock tree wells and associated grading, landscaping and revegetation improvements are specifically allowed on Lot 11 in the location shown on Exhibit B. Small retaining walls, grading, landscaping and revegetation improvements are specifically allowed on Lots 16 and 17 within the Driveway Access Restriction Areas in the locations shown on the Plan. All disturbed areas for the installation of these improvements must be brought back to a natural state and free of noxious weeds. All applicable requirements of the Development Code must be met as well as all applicable

provisions of this Designation, including but not limited to, Section B.1 Development Areas and Disturbance Envelopes, Section B.2 Driveway Access Restriction Areas, Section B.4 Colors and Materials, Section B.7 Fencing, Accent Walls, Retaining Walls and Security Gates, and Section B.9 Landscaping. Prior to the commencement of any of this work, a detailed plan shall be submitted to the Planning Department for review and approval.

10. Lead Remediation

a) Lead has been found in the soils contained within the PUD. Lead exceeding 400 parts per million (ppm) was found in random locations throughout the Property. According to a letter by Golder & Associates dated February 9, 2004, detailing the results of a study that firm conducted on the Property, the source of the lead is natural mineralization of the parent material and soils derived from the parent material. Nonetheless, it is acknowledged that this same study by Golder & Associates determined that it is safe to develop and live within the Property by means of effectuating the following remediation measures, recommended by Golder & Associates, designed to mitigate any high levels of lead. Based on Golder's report attached hereto as Exhibit C and incorporated herein, the following actions are recommended as an option to be taken by each property owner in order to effectuate such remediation and mitigation measures:

- i. Prior to the issuance of a grading or building permit for each individual lot, all soils proposed to be disturbed for construction, including but not limited to those areas within the disturbance envelope, Driveway Access Restriction Areas, and that area for the septic installation, should be tested in the following manner for lead content:
 - Samples should be collected by coring, shovel or backhoe. The soil profile at the center of the proposed foundation will be sampled by collecting a series of stratified samples to a depth equal to 1 foot below the proposed depth of excavation for the foundation. These samples will be analyzed to characterize the soil that will be excavated during construction. One sample will be collected from each 2-foot vertical interval. For example if the depth of excavation for the foundation is 10 feet, six samples will be collected (0-2, 2-4, 4-6, 6-8, 8-10 and 10-12 feet). In addition, representative samples will be collected from the driveways. If more than 500 square feet is disturbed for this testing, then a grading permit for the testing shall be obtained from the Engineering Department. A certified environmental consultant shall submit documentation that the testing was done in accordance with the standards set forth in this section prior to the issuance of a building permit.
 - *Yards:* Four additional representative locations should be sampled to characterize the surface soils within an area from the midpoint between the edge of the foundation and the edge of the disturbance envelope in each of the four cardinal directions. Samples should be collected from the mineral soil layer (e.g., below the litter layer). Samples should be collected from five depth intervals:
 - 0 – 1 inch;
 - 1 – 6 inches;
 - 6 -12 inches;
 - 12 – 18 inches; and
 - 18 – 24 inches.

- a) The intent of the sampling plan is to representatively sample the area that is most likely to be subject to direct human contact. If the foundation is located near the disturbance boundary, the area between the foundation and the disturbance envelope boundary may not be representative of the larger area more likely to be contacted by humans. Therefore, if the foundation is within 10 feet of the disturbance envelope boundary, no sample is required to be collected from that side. Two samples should be collected from the opposite side of the house at spacing that provides representative samples from the residential use area. Most importantly, four samples should be collected that adequately characterize the soil in the proposed residential use area (i.e. the landscaped lawn).
 - **Sample Collection and Handling:** Samples should be collected in accordance with ASTM method E-1727-04 (Standard Practice for Field Collection of Soil Samples for Subsequent Lead Determination). The samples should be stored at 4°C and protected from direct sunlight. Duplicate samples should be collected for 10 percent of the samples, with at least one duplicate sampled collected per lot. Samples can be analyzed by either X-Ray Fluorescence (XRF) or acid-digestion followed by ICPAES (EPA Method 3050B or 3051 and 6010B). All samples should be screened through a #60 sieve(250 micron, ASTM E-11) prior to analysis.
- ii. All soils to be disturbed for construction activities testing at or above 400 ppm should be remediated either by a.) covering with a minimum of 1 foot of clean soil and revegetating; b.) constructing a permanent barrier, such as concrete or asphalt, on such area or c.) removing the soil and hauling to an approved landfill for disposal.
- iii. Soils classified as elevated (lead concentrations between 400ppm and 1,200 ppm) should not be used as children’s play areas or gardens, unless the area is covered to minimize potential for contact using one of the following methods:
 - a. Install raised-bed gardens and supplement with clean topsoil
 - b. Install wood-framed raised play and picnic areas filled with woodchips.
 - c. Install path of walking stones for high-traffic areas
 - d. Seed and fertilize grassy areas, or cover with mulch or woodchips if not suitable for grass.
 - e. Areas within the disturbance envelope with soil lead concentrations exceeding 1,200 ppm shall be treated as follows:
 - f. Areas may not be used for children’s play areas, picnic areas or gardening.
 - g. Soils will be covered with a minimum of 1 foot of clean soil and revegetated.
 - h. A visible barrier will be placed at the boundary between the contaminated soil and clean fill. Examples of suitable barriers/markers include snow fencing (usually orange), a clean, crushed limestone layer, and geofabric.
 - i. Should meet OSHA standards for “lead concentration” standards during construction.

- vi. The plat and the associated subdivision covenants shall disclose the fact that there are elevated levels of lead found in the Property and reference the Golder's report and the requirements of this Designation.

11. Geotechnical Hazards

- a) According to the "Final Report on Environmental and Geologic Hazards for the Big Sky Ranch and Addenda" dated October 5, 2005 and prepared by Golder & Associates (refer to Exhibit D), the Property contains numerous prospect pits, waste rock piles, adits and shafts due to the historic mining activity within the Property. Based on the recommendations from this report, all disturbance envelopes shall avoid these geotechnical hazards, and are proposed to do so under the development plan. Disturbance from roads, driveways, trails and utility installation shall avoid these areas to the greatest extent practicable. Based on the recommendations from this report, the Owner/Developer shall complete the following reclamation in accordance with a detailed remediation plan to be reviewed and approved by the Engineering and Planning Departments prior to the commencement of the work:
 - i. The Eureka shaft at the top of the Eureka Mine Waste Rock Pile shall be closed by excavating, backfilling and placing a concrete cap.
 - ii. The shaft below the Eureka Mine Waste Rock Pile and the large exploration pit on the Alice A. claim shall be closed by backfilling with coarse granular material or clean soil.
 - iii. The collapsed adit associated with the Chantilly Waste Rock Pile shall be tamped with a backhoe to remove voids that could pose a safety hazard due to collapse, unless other mitigation measures are approved by the Planning Department and the Colorado Geological Survey.
 - iv. Impact to trails, soil disturbance and tree clearing for the remediation work shall be minimized to the greatest extent practicable. All trees required to be removed for the remediation work shall be flagged for the Planning Department's review and approval prior to commencement of the work.
 - v. Prior to the recordation of the final plat for each property with prescribed reclamation work as discussed in i, ii, and iii above, the Owner/Developer shall submit a Subdivision Improvements Agreement and a performance bond that provides for the completion of the work listed above within two years of the recordation of the final plat, and include the cost estimates for such work. All remediation work shall be reviewed and monitored by a certified geologist or other applicable professional. Prior to the release of the performance bond being held for this work, the Owner/Developer shall submit documentation from the certified professional stating that the remediation work was conducted in accordance with the requirements of the remediation outlined in this Designation.
- b) The following restrictions apply to geotechnical hazards found within the Property:
 - i. Building footprints shall be located a minimum of 100 feet from all mine waste piles.
 - ii. Construction shall not be performed on the surface above the seven collapsed adits shown on Drawing 1 of Exhibit D, attached hereto and incorporated herein.
 - iii. Where exploration pits are found within a disturbance envelope, a sample from the material excavated from the exploration pits may be sampled for lead. If concentrations exceed 400 ppm, then the following mitigation measures are required:

- a. The excavated material will remain on the property, be placed back in the pit and be covered by a minimum of 1 foot of clean soil and revegetated or a permanent barrier, such as concrete or asphalt will be placed over it; or
- b. The soil will be removed and hauled to an approved municipal landfill for disposal.
- c. Covering the material is the preferred option from a or b above. If material has to be removed from the site, it should be tested using EPA Method 1311 (Toxicity Characteristics Leaching Procedure) to determine appropriate disposal options, in accordance with state and federal law.
- iv. Residential construction shall be at least 100 feet from the Chantilly and the Eureka Mine Waste piles. The smaller mine waste piles located below County Road 300 shall also be avoided, if possible. If residential construction takes place on or near one of the smaller waste rock piles, the excavated material shall remain on the property, be placed back in the pit and be covered by a minimum of 1 foot of clean soil and revegetated or a permanent barrier, such as concrete or asphalt, in accordance with the recommendations of the Golder & Associates report relied upon and entered into the Planning file record for this matter. Notwithstanding the foregoing, the aforementioned reclamation measure is the preferred measure, however, the soil, but not the excavated material, may also be removed and hauled to an approved landfill for disposal.
- c) All remediation work shall be reviewed and monitored by a certified geologist or other applicable professional.
- d) Grading plans shall be submitted to the Engineering Department should any soil disturbance of any volume be proposed within 100' of any tailings piles, mineshafts, or collapsed tunnels. If any mining hazards are disturbed, then a reclamation plan, prepared and stamped by a Colorado Professional Engineer will be submitted to the County for review and approval. Any recommendations by the Colorado Professional Engineer will be implemented.

12. Water Quality

- a) All development shall comply with the County's Water Quality Control Regulations outlined in Chapter 7 of the Development Code. Further, the following water quality standards shall be met:
 - i. Prior to the recordation of the plat, a detailed grading, drainage, and erosion control plan for roads shall be submitted to be reviewed and approved by the Engineering Department and reviewed by the Summit Water Quality/Quantity Committee.
 - ii. All disturbed soils must be revegetated in accordance with the Development Code.
 - iii. Prior to the recordation of the plat, the Owner/Developer shall submit a specific plan to provide for non-erosive roadside drainage ditches. This may require some check dams or other practices and small sediment traps where culverts discharge. This plan shall be reviewed and approved by the Engineering Department and be reviewed by the Summit Water Quality/Quantity Committee.

13. Parking

At least 2 parking spaces shall be required for each single family dwelling .

14. Animal Keeping

Animal keeping shall meet the requirements for the R-1 Zoning District outlined in the Development Code. Notwithstanding the foregoing, livestock shall be considered a permitted use only on Lot 17 subject to the limiting provisions contained in Section A.2 herein.

15. Site Plan Review

New single-family dwelling construction shall be subject to site plan review pursuant to the site plan review process outlined in the Development Code. All other new or modified structures are subject to site plan review by the County in accordance with the provisions of the Development Code.

16. Signs

One overhead subdivision sign is permitted at the entrance to the subdivision on CR 453 within the existing entry feature easement on Lots 12, and 21 as well as on Lot 15 which was removed from the PUD during the September 2012 PUD amendment. Notwithstanding the foregoing, should the County or any successor in jurisdictional interest to the Property take over maintenance of the relevant road, the County reserves the right to condition such maintenance upon removal of such sign, or to require the removal of such sign if deemed necessary for such purposes.

A construction identification sign is also permitted in the easement shown on Lot 21 in accordance with the sign permit issued under SP07-005 and as amended or changed in accordance with Chapter 9 of the Development Code and the colors and materials and illumination standards set forth in this section of the Designation.

Colors and Materials

The signs shall utilize natural or naturally appearing materials, such as wood, rock, stone, and metal. Colors shall blend with the natural backdrop.

Illumination

Illumination is not permitted for the signs.

Height

The signs shall not exceed a maximum height of 25-feet and shall have a minimum clearance of 17-feet over the roadway.

Sign Area

The area of the lettering shall not exceed 60 square feet.

C. Utilities and Improvements

1. Water

- a) Sufficient water augmentation for each lot within this Designation has been obtained through the Vidler Water Company. "Owner/Developer of Lots 1-2 and 5-14" and/or additional Owners, have provided documentation of such commitment to augmentation to the County, and approval of all development in the Property is made in reliance upon

said documentation. Should any occurrence render such commitments ineffective or a nullity in whole or in part, the County reserves the right to require supplemental documentation and/or make whatever modifications to the PUD as are necessitated by such occurrence.

- b) Water for individual homesites will be provided by individual wells subject to approval by the State Engineer. A copy of a well permit shall be submitted concurrent with a building permit application for a new single family or guest home development.

2. Wastewater Disposal

Wastewater disposal will be provided by on site wastewater treatment systems ("OWS") subject to approval by the Summit County Public Health Department through the application for an Individual Sewage Disposal Permit for new single family development.

3. Utilities

All utilities shall be placed underground in accordance with the Summit County Subdivision Regulations, except for those in existence prior to the Effective Date, which serve the Louis property (Lot 16).

The underground electrical power access to Lots 1 and 2 may be brought from the existing power supply from the Gibson Hill tower property not in the Property on the south side of Lot 16 and contiguous with the north sides of Lots 1 and 2. The utility line in this location shall be installed in a manner that minimizes soil disturbance and tree clearing to the greatest extent practicable. Prior to the issuance of a grading permit for the utility installation in this location, the trees to be removed shall be flagged and then inspected and approved by the Planning Department to ensure the tree clearing will be the minimum necessary. The utility line shall not be installed until a plat for Lots 1 and 2 has been approved.

4. Access

- a) The Owner/Developer shall grant 50-foot wide public right-of-ways across all County roads within the Property, with a five foot snow storage easement on either side of such right-of-way. The Owner/Developer shall also grant easements outside of the right-of-way for maintenance of the grading and other improvements (retaining walls, etc.) associated with the road. A road maintenance agreement for that portion of the cut and fill that will be located outside of the 50 foot ROW shall be executed prior to the recordation of the plat.
- b) Except for the specialized road standards as provided in this subsection, or as otherwise approved by the County Engineer, where a road serves four units or less, it shall be designed using the driveway design standards as outlined in Chapter 5 of the Development Code.
- c) The revegetation of CR 484, beyond that portion needed for driveway access to Lot 8 in the area shown on Exhibit B, shall be completed by the Owner/Developer, in conjunction with the road improvements for the realigned portion of CR 484. Cost estimates for the revegetation of the abandoned portion of CR 484 shall be included in the Subdivision Improvements Agreement. Once the plat is approved, the construction of the realignment of CR 484 may commence, upon the issuance of a grading permit.

- d) The subdivision covenants shall include provisions for the creation of a homeowner's association or other legal entity to maintain the roads, and other common improvements proposed in the project.
- e) The Owner/Developer shall prepare a private road maintenance agreement designating that the roads will be maintained by the homeowner's association, with the form of such reviewed and approved by the County prior to executing and recording both the agreement and the plat.
- f) For two years after the completion of the roads within the Property, the County shall have the authority to require the Owner/Developer to make any necessary repairs.
- g) Prior to scheduling the public hearing for the preliminary plat, the Owner/Developer will need to submit a certified, stamped topographic survey of all areas proposed for disturbance within the Property. This survey will include all roads, driveways, and Driveway Access Restriction Areas to ensure that the driveway access restriction areas are located in an area that will minimize soil disturbance during construction.
- h) Except for the driveways leading to Lots 16 and 17, all roads and driveways within the Property shall be paved. However, south of the driveway for Lot 8, and through Lots 3 and 4, CR 300 shall be left in a primitive state and shall not be paved, widened or improved unless approved by the County Engineering or Road and Bridge Departments. In the vicinity of Lots 8 and 18, CR 300 may be realigned upon approval by the Engineering and Road and Bridge Departments subject to an approved plat for those lots and the issuance of a grading permit for the associated improvements, and an express dedication for such roads in the new alignment established under the standards set forth herein. CR 300, north of the entrance to the driveway on Lot 16, shall be left in a primitive state and shall not be paved, widened or improved unless approved by the County Engineering or Road and Bridge Departments.
- i) Retaining walls or other stabilization mechanisms approved by the County shall be used in lieu of large areas of large cut or fill in order to reduce the limits of disturbance and lessen the amount of tree removal.
- j) Cut and fill slopes should be tied with existing grade within 40 feet from the road or driveway in order to limit disturbance. If grade cannot be met at that point, retaining walls or other stabilization mechanism approved by the County may be required. If landscaping is used within the Property and not within private property, then the Owner/Developer shall bring water in from an outside source.
- k) Prior to the recordation of the Final Plat, the Owner/Developer shall obtain an access easement across Thomas and Julie Schwaiger's property, as described under Schedule Number 6501765, and in the general alignment as shown on Exhibit B. If the Schwaiger's do not agree to grant this easement, then the driveway access to Lots 1 and 2 may be modified so long as it is in substantial accordance with the driveway alignment shown in Exhibit B and is approved by the Planning and Engineering Departments.

5. Fire Mitigation

Fire Mitigation boundaries around each disturbance envelope have been established for each residential lot (except for Lots 16 and 17) based upon the County's wildfire hazard mitigation requirements as depicted on Exhibit B. All future residential development of the Property shall comply with Exhibit B and the County's wildfire hazard mitigation requirements concurrent with the building permit process.

The Western Sky Ranch Homeowners Association ("HOA") shall distribute the "Forest Management Plan for Eureka Estates", dated March 30, 2004, to all home owners upon

transfer of title. The HOA shall also take affirmative measures, including annual mailings and discussion items at regularly scheduled HOA meetings, to ensure that home owners remain educated regarding the recommendations contained therein.

6. Fire Protection

- a) The Property is located within the Red, White and Blue Fire Protection District (“District”). Except as otherwise specifically provided for herein, all development on the property shall meet all fire protection requirements of the District or its successors. Approved fire sprinkler systems that meet the applicable requirements of the Building Code shall be installed in each new single family dwelling built after the Effective Date, regardless of size.
- b) Within one year of the final plat recordation or prior to the issuance of the first building permit within the Property, whichever occurs first, two 4,000 gallon cisterns and associated fire connection shall be buried in the locations shown on the development plan or in locations otherwise approved by the Red, White, and Blue Fire Protection District. The Subdivision Improvements Agreement shall include cost estimates for the installation of the cisterns and a completion date of either one year from the recordation of the final plat or prior to the issuance of the first building permit within the Property, whichever occurs first.
- c) All switchbacks and turns on new roadways shall have a minimum inside turning radius of 26 feet and a minimum outside radius of 42 feet to accommodate emergency vehicles.
- d) All residences shall post approved addressing as required by the District.

7. Real Estate Transfer Fee

- a) The Owner/Developer has established a private, perpetual real estate transfer fee equal to 1% of the purchase price, to be collected upon every sale of each lot. This private real estate transfer fee is for both the initial sales of the lots within the Property, and subsequent resales of such lots (with or without dwellings constructed upon them).
- b) Prior to the County approving the final plat, the Owner/Developer has proposed to develop deed restrictions for the lots within the Property that reflect the real estate transfer fee requirement of this section and how such tax will be administered. Moreover, prior to the approval of the final plat, such fee requirement shall also be incorporated into the Covenants, Codes and Restrictions (“CC&R’s”) for the property, and a mechanism for the collection and dedication of such fees shall be established.
- c) The real estate transfer fee, once collected by Owner/Developer or its designee or assign, shall be dedicated to a fund to be administered by the County or by an entity assigned by the County, as an endowment fund, with the provisions that 100% of the interest earnings go towards the intended beneficiaries.
- d) Principal from endowment funds shall never be used for funding. Only interest earnings may ever be dispersed.
- e) Fifty percent of the interest earnings from the real estate transfer fee will go towards the Community Care Clinic Endowment Fund, or other successor fund as may be approved by the County. The other 50% of the interest earnings will go towards affordable housing or other community care needs as determined by the County with an endowment fund set up for that purpose.

8. Trails

- a) All trails shall be located and constructed in substantial accordance with locations of the trails shown on Exhibit B.
- b) The Owner/Developer shall construct all trails and trail improvements within the Property within one year of recordation of any final plat where those trails are located with the following exceptions:
 - ii. For the trail that crosses Lots 6, 9, 10, 16, and 17, as depicted on Exhibit B, the Owner/Developer shall construct the trail in the alignment mutually agreed upon by the Owner/Developer and the Open Space and Trails Department on Lots 6, 9, 10, and 17 and in the easement location for Lot 16. On Lots 6, 9, 10, and 17 the Owner/Developer and the County shall endeavor to locate the trail more than 25 feet from the road, where feasible. On Lot 16, the width of the trail easement is limited to 25 feet unless otherwise agreed upon by the owner of Lot 16. If the trail is not constructed and easements are not recorded prior to the recordation of the 2011 PUD Amendment, then the Owner/Developer shall submit a Subdivision Improvements Agreement including the cost for the surveying, construction, and the dedication of the easement, and shall submit a financial guarantee to cover the cost of realigning this portion of the trail and all other costs included in the Subdivision Improvements Agreement. The trail shall be constructed within eighteen months of the recordation of the 2011 PUD Amendment and the existing trail across Lots 6, 9, and 10 shall be revegetated as needed. If the trail is constructed prior to the recordation of the 2011 PUD, then a Subdivision Improvements Agreement and financial guarantee will not be required. The trail across the southern portion of Lots 3 and 4 is not required to be constructed by the Owner/Developer. Rather, the County or Town of Breckenridge may construct this trail at some point in the future.
 - iii. The extension of the Chantilly trail across the northerly portion of Lot 4, adjacent to CR 484, from where the Chantilly Trail crosses over CR 484 to access the trail on Lot 7, is not required to be constructed by the Owner/Developer. Rather, the County or Town of Breckenridge may construct this trail at some point in the future.
- c) For all new trails and realigned trails within the Property, those trails shall be surveyed after construction in order to ensure the correct alignment is conveyed on the applicable easements. Applicable easements shall be recorded via the applicable plat or within one year of the recordation of the applicable plat.
- d) All new trails shall be aligned to meet Summit County natural surface trail standards and shall be constructed by the Owner/Developer to the satisfaction of the Open Space and Trails Department, including but not limited to the installation of culverts, bridge-structures over adits, widths of trails, and grade of trails. Except where otherwise approved by the Open Space and Trails Department, the standard trail easement width shall be 20 feet.
- e) Pending a positive response from the U.S. Forest Service authorizing the Owner/Developer to construct a trail and secure a trail access across National Forest Service property for the trail that is proposed to connect from the Little Maude, M.S. #2967 to the Chantilly and Wicklow, M.S. #8352A, the Developer is responsible for the construction of the trail.
- f) The trail proposed across Lots 13, 12, and 19, shall be constructed prior to the issuance of the certificate of occupancy for Lot 19. Until such time that the construction on the driveway begins, the trail may be located in the existing alignment of the jeep trail. Once the driveway is constructed, the trail shall be located to either side of the driveway, but in no case shall be located within the driveway.
- g) The existing trail leading up to the Eureka mine, across Lots 9 and 10 Private Open Space, shall either be reclaimed back to a natural state or boulders shall be placed to

block access to the remainder of this trail. This work shall be completed prior to the completion of the realignment of CR 484. If boulders are put in place, then they may be temporarily relocated to facilitate the removal of dead or diseased trees.

9. Open Space

- a) Ownership of the private open space tracts shown on Exhibit B, attached hereto and incorporated herein, shall run with the title to Lot 1, Lot 2, Lot 8, Lot 9, Lot 10 and Lot 21 in perpetuity and be owned as tenants in common by the applicable property owners of Lot 1, Lot 2, Lot 8, Lot 9, Lot 10 and Lot 21 as conceptually shown in Exhibit B. All maintenance obligations for such private open space tracts shall also run with the title to such lots.
- b) A plat note shall be added to the plat that limits the uses of the open space shown in Exhibit B to passive open space uses (except the trails which may have special events in accordance with applicable County regulations) and other uses as may be permitted by this Designation. Such a plat note shall also require either a restrictive covenant with the County or other restrictive mechanism approved by the County to ensure the open space values are preserved.
- c) The Property's HOA covenants, conditions, and restrictions shall also have a provision that requires the owner of the open space tracts to maintain said parcels as such.
- d) The Open Space Tracts shall remain open and free from development except for those improvements allowed as set forth in this section of the Designation.
- e) Access across such private open space parcels shall be limited to use of the driveway to Lots 1 and 2, which crosses Tract B, to public non-motorized trail access wherever applicable, access for emergency response whenever necessary, and to any other public access as held or acquired by the County or other public entity at any time.
- f) New trail construction is permitted within the Open Space Tracts as shown in Exhibit B or as otherwise reviewed and approved by the Open Space and Trails Department.
- g) Buried utilities shall be allowed only along the road cut through Tract B.

10. Historic Mine Site Parcels A & B

- a. Historic Mine Sites A & B ("mining parcels") may be established via subdivision accordingly and transferred to ownership by separate entities. These properties shall be designated as open space parcels to remain free from any development or activity not expressly allowed per such designation, and closed to the public with no public access permitted. A plat note reflecting this limitation on use and development shall be provided in any plat establishing the parcels.
- b. Historic Mine sites A and B shall remain fenced and inaccessible to the public from the Property at all times. The responsibility for such maintenance, including fence maintenance, weed pulling if necessary, and general upkeep, shall be the responsibility of the Homeowner's Association for the property.
- c. Prior to BOCC review of any final plat application for a plat which establishes these subject mining parcels, Applicant shall provide proof of formal application to the Colorado Department of Public Health and Environment, for a voluntary clean of such mine sites, in accordance with the Voluntary Clean-up and Redevelopment Act, C.R.S. §§ 25-16-301, *et. seq*
- d. Prior to recordation of any final plat for a plat that establishes these subject mining parcels, Applicant shall provide proof of formal conveyance of both such parcels to RGDM, Ltd., a Colorado Limited Liability Company. Moreover, RDGM shall not take any action to

dissolve as an entity under Colorado law, until such time as it has first provided ninety days advance notice and an opportunity for formal comment by either the County or the WSRA to the Colorado Secretary of State.

- e. In addition to the private real estate transfer fee set forth in section c.8 above, the Owner/Developer has established a private real estate transfer fee equal to 1% of the purchase price, to be collected only upon the initial sale of each lot presently owned by Danny Middleton or DDMCWM (expressly including, but not limited to Western Sky Ranch lots 1, 2, 5, 7, 8, 9, 10, 12, 13, 17) to an unrelated third party not owned or affiliated with the applicant(s). The money set aside will be known as the "Preservation Fund", and will be contributed expressly and solely toward preservation and maintenance of the site, as well as maintenance of property tax obligations of the historic mining claims.
- f. The Preservation Fund will be managed by a trust known as the "Western Sky Ranch Preservation Trust" (WSPT). The trustee of WSPT will be the Western Sky Ranch Association or any other entity formally designated as the Homeowner's Association for the Property ("WSRA"), as expressly approved by the County, and the beneficiaries will be RGDM and the County. The terms of the trust document will provide that the sole use of the Preservation Fund is to ensure preservation and maintenance of the site, as well as maintenance of property tax obligations of the historic mining claims.
- g. Prior to recordation of any final plat for a plat that establishes these subject mining parcels, trust documents for the WSPT that effectively establish the required elements set forth herein shall be prepared by Applicant, reviewed and approved by the Office of the County Attorney, and executed by all parties to the same. These trust documents shall contain substantive provisions including, but not limited to, the following:
 - i. At any time prior to completion of a voluntary clean up of the mining parcels, per the Voluntary Clean-up and Redevelopment Act, C.R.S. §§ 25-16-301, *et. seq.*, WSRA may, in its sole discretion, terminate the WSPT and retain the trust assets for any purpose, so long as WSRA (or its successor in interest) takes and retains title to the historic mining claims.
 - ii. If no such voluntary cleanup is completed sooner, and if WSRA has not sooner voluntarily terminated the WSPT, the WSPT will continue until July 1, 2090, at which time it will terminate and the funds will be transferred to WSRA.
 - iii. In the event that Owner/Developer is able to obtain approval of a voluntary clean up from the State, per C.R.S. §§ 25-16-301, *et. seq.* the Preservation Fund may be used to carry out the remediation required. The balance of the Preservation Fund after complete remediation will become the property of Mr. Middleton, the WSPT will then terminate, and there will no longer be a requirement to collect the 1% fee. Upon certification by the State Department of Public Health and Environment that the voluntary clean up has been successfully completed, title for the mining parcels shall pass directly to the WRSA.
 - iv. In the event that a voluntary clean up is completed for only one of the historic mining claims, there will only be a .6% fee collected for the Preservation Fund thereafter instead of 1%.
 - v. The trust shall be responsible for the payment of any ad valorem taxes upon the mining parcels, if applicable.
 - vi. Both the Summit County Board of County Commissioners and RDGM, Ltd. shall be made express beneficiaries to the trust.
- h. In the event that any of the measures set forth herein fail to be effectively performed by the establishment and administration of the Trust, said obligations, including any ad

valorem obligations, if applicable, shall revert directly to the WSRA per the express dictate of this Designation.

D. Implementation

1. Platting Requirements

A preliminary and final plat shall be approved by the County prior to any development that involves selling or conveying any interest in the property to others. Lot 17 may not be subdivided to create separate interests in the primary residence and the guest home.

2. Formation of Homeowner's Association

A homeowner's association or other legal entity shall be created to ensure, at minimum, the maintenance of the roads, driveways and other common areas of the Property. The covenants for this PUD Designation shall include the same provisions for fencing, building colors and materials, exterior lighting standards, and the illegal tree clearing provisions as outlined in this Designation. Prior to scheduling the preliminary plat before the Planning Commission, the Owner/Developer shall submit the covenants with these provisions.

3. Specific Obligations of Additional Owners under this Designation

The provisions of this Designation which shall be applicable to the Additional Owners, and their heirs, assigns and successors shall be limited to the following:

| Section | Subject |
|-----------------------------------|--|
| A.1 | Density, Permitted Uses, Accessory Uses, & Caretaker Units |
| A.2.a-i | Accessory Uses |
| B.1.a-k(i.-vii.) | Development Areas and Disturbance Envelopes |
| B.2.a-d & f | Driveway Access Restriction Areas |
| B.3.a-c | Building and Structure Height |
| B.4 | Colors and Materials |
| B.5.a-d | Exterior Light Fixtures |
| B.6 | Design Standards |
| B.7.a-c | Fencing and Accent Walls |
| B.8.b (i.-ii.)&c | Environmental Standards |
| B.9.a-h & j-n | Landscaping |
| B.10.a.i-v(a.-i.) | Lead Remediation |
| B.11.b(i.-iv.)-d | Geotechnical Hazards |
| B.12.a.ii | Water Quality |
| B.13 | Parking |
| B.14 | Animal Keeping |
| B.15 | Site Plan Review |
| C.1.b | Water |
| C.2 | Wastewater Disposal |
| C.3 | Utilities |
| C.4.b C.4.h. C.4.i C.4.j | Access |
| C.5 | Fire Mitigation |
| C.6a.& c-d | Fire Protection |
| C.7. a.& c-e | Real Estate Transfer Fee |

| | |
|---------------|---|
| C.8 | Trails – to the limited extent that easements may be required for those portions of the trail that may traverse the subject property/properties. |
| C.9. a & d-g | Open Space and Trails |
| D. 1 & 2 | Platting Requirements and Formation of Homeowner’s Association: To the limited extent that the Additional Owners must be a part of the subdivision plat and the Homeowner’s Association |
| D. 3 | Specific Obligations of Additional Owners under this Designation |
| E (1) & (3-8) | General Provisions |
| | Additional Owners shall remain subject to all applicable provisions of the Summit County Land Use and Development Code , as amended |

E. General Provisions

1. Enforcement

The provisions of this Designation and its development plan relating to the use of land and the location of private open space shall run in favor of the County and shall be enforceable at law or in equity by the County without limitation on any power or regulation otherwise granted by law. Other provisions of this Designation and the development plan shall run in favor of the residents, occupants, and owners of the planned unit development but only to the extent expressly provided in, and in accordance with the terms of this Designation and the development plan. Provisions not expressly stated as running in favor of the residents, occupants, or owners of the planned unit development shall run in favor of the County.

2. Breach of Provisions

If at any time any provision or requirement stated in this Designation has been breached by the Owner/Developer, the County may withhold approval of any or all site plans or plat maps, or the issuance of any or all grading or building permits or occupancy permits applied for on the Property, until such breach has been remedied; provided, however that the County shall not take affirmative action on account of such breach until it shall have first notified the Owner/Developer in writing and afforded the Owner/Developer a reasonable opportunity to remedy the same. The parcels now owned by the Additional Owners (identified in the first paragraph of this Designation) shall be exempt from this provision.

3. Binding Effect

This Designation shall run with the land and be binding upon the Owner/Developer, its respective successors, representatives and assigns, and all persons who may hereafter acquire an interest in the Property or any part thereof, with the exception that provisions of this Designation may be modified through a PUD amendment in accordance with the procedure stated in the Development Code. This Designation shall be recorded in order to put prospective purchasers or other interested persons on notice as to the terms contained herein.

4. Amendments

Amendments to the provisions of this Designation shall be reviewed and acted upon as a rezoning application, subject to the County's procedures for zoning amendments and to the requirement for findings under the Planned Unit Development Act of 1972 at CRS 24-67-106(3)(b), unless such amendment is determined to be minor in nature in accordance with the provisions outlined in the Development Code.

5. Notices

All notices required by this Designation shall be in writing and shall be either hand delivered or sent by certified mail, return receipt requested, postage prepaid, as follows:

Notice to County:

Board of County Commissioners
PO Box 68
Breckenridge, CO 80424

Notice to Owner/Developer:

Danny Middleton
P.O. Box 430757
Houston, TX 77243

All notices so given shall be considered delivered three days after the mailing thereof. Either party, by notice so given, may change the name or address to which future notices shall be sent.

6. Entire Designation

This Designation contains all provisions and requirements incumbent upon the Owner/Developer relative to Western Sky Ranch Planned Unit Development, formally known as the Big Star Ranch Planned Unit Development, except as modified by subsequent action of the Board of County Commissioners in accordance with the procedures set forth in the Development Code and the Colorado Planned Unit Development Act (CRS 24-67-106) for amending planned unit developments, and except that nothing contained herein shall be construed as waiving any requirements of the Development Code or other regulations otherwise applicable to the development of the Property.

7. Effective Date

To be legally effective and binding, this Designation must be recorded by the Summit County Clerk and Recorder. The date of such recording is referred to herein as the "Effective Date."

8. Legality of Provisions

In the case one or more of the provisions contained in this Designation, or any application hereof, shall be invalid, illegal or unenforceable in any respect, the validity, legality and enforceability of the remaining provisions contained in this Designation and the application thereof shall not in any way be affected or impaired thereby.

IN WITNESS WHEREOF, the County and the Owner/Developer have executed this Designation as of the date first above written above.

BOARD OF COUNTY COMMISSIONERS
OF SUMMIT COUNTY COLORADO

/s/ THOMAS A. LONG, CHAIRMAN
Thomas A. Long, Chairman

ATTEST:

/s/ CHERI BRUNVAND, CLERK & RECORDER
Cheri Brunvand, Clerk and Recorder

By: /s/DANNY MIDDLETON
Danny Middleton, Agent for Owner/Developer

By: /s/ RODNEY ALLEN
Rodney Allen, Agent for Owner/Developer

By: /s/ DALE LOUIS
Title: Trustee
Louis Lodge Trust I and Louis Lodge Trust II,
Additional Owners

By: /s/ JACK A. BURGAN
Jack A. Burgan, Additional Owner

By: /s/ ROSEMARY S. BURGAN,
Rosemary S. Burgan, Additional Owner

By: /s/ SCOTT BURGAN
Scott Burgan, Additional Owner

By: /s/ LAURIE MIDDLETON
Laurie Middleton, Owner/Developer

By: /s/DANNY MIDDLETON
Sterling Trust Company FBO Danny D. Middleton
IRA
By

Danny Middleton, Owner/Developer

By: /s/ MELISSA MIDDLETON
Melissa Middleton, Owner/Developer

By: RGDM Ltd.
By: /s/ DANNY MIDDLETON
Danny Middleton, Owner/Developer

By: /s/ DOROTHY TYLER
Dorothy Tyler, Owner/Developer

By: DDMCWM
By: /s/ DANNY MIDDLETON
Danny Middleton, Owner/Developer

By: /s/ PHILLIP SCUDERI
Phillip Scuderi, Additional Owner

By: /s/ Mike Carricarte
JLC La Mancha, LLC, Additional Owner

By: /s/ Mike Carricarte
MAC La Mancha, LLC, Additional Owner

APPROVAL OF AMENDMENTS

The foregoing document is the Western Sky Ranch Planned Unit Development Designation as approved and signed by the Summit County Board of County Commissioners on the 11th day of October, 2005 and recorded at Reception No. 827660 and as amended by the Summit County Board of County Commissioners as follows:

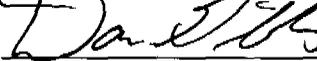
| Resolution Number | PUD Reception Number |
|------------------------------|----------------------|
| 05-82 (Reception No. 827659) | 827660 |
| 06-86 (Reception No. 841729) | 841730 |
| 07-09 (Reception No. 878862) | 878863 |
| 08-43 (Reception No. 891471) | 891952 |
| 11-32 (Reception No. 971314) | 977287 |
| 12-056 Reception no. 1011013 | 1011014 |

The planned unit development document dated the 11th day of October, 2005 and recorded at Reception No. 827660 and revised to incorporate the amendments approved as noted above shall remain in force as revised. The foregoing document is issued as a continuation of the original document. Copies of the original Planned Unit Development Designation and the amendments noted above are available from the Summit County Clerk and Recorder.

Adopted this 25th day of September, 2012.

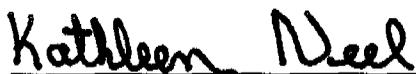


**COUNTY OF SUMMIT
STATE OF COLORADO
BY AND THROUGH ITS
BOARD OF COUNTY COMMISSIONERS**



Dan Gibbs, Chair

ATTEST:



Kathleen Neel, Clerk and Recorder

Exhibit A

LODES WITHIN WESTERN SKY RANCH

| | Lodes | MS# |
|-----|--|-----------|
| 1. | Barbara Lode | MS #2978 |
| 2. | Elizabeth Lode | MS #2975 |
| 3. | Anna Lode | MS #2974 |
| 4. | Mathilda Lode | MS #2973 |
| 6. | Elanora Lode | MS #2972 |
| 8. | Princeton Lode | MS #2971 |
| 7. | Eureka Lode | MS #2338 |
| 8. | Naperville Lode | MS #2966 |
| 9. | Blue River Lode | MS #2966 |
| 10. | Iron Lode | MS #4349 |
| 11. | Wyneta Lode | MS #8362A |
| 12. | Minerals Lode | MS #8362A |
| 13. | Roslyn Lode | MS #8352A |
| 14. | Alice A Lode | MS #8352A |
| 15. | Widow Lode | MS #8352A |
| 16. | Charity Lode | MS #8352A |
| 17. | Franclyn Lode | MS #8591 |
| 18. | Shamokin Lode | MS #2983 |
| 19. | Company #2 Lode | MS #2984 |
| 20. | Dirigo Lode | MS #2982 |
| 21. | Little Grace Silver (see the deed from USA at Rec. No. 659980) | No MS # |
| 22. | Naperville Silver (see the deed from USA at Rec. No. 559980) | No MS # |
| 23. | Standard #1 and #2 | MS #4888A |
| 24. | Georgetown Miner | MS #1174 |
| 25. | Fraction | MS #12720 |
| 26. | Leona | MS #12720 |
| 27. | Mountain Lion | MS #12720 |
| 28. | Kate | MS #12720 |
| 29. | Harrison | MS #5744 |
| 30. | Morian | MS #5744 |
| 31. | Mary Gardner | MS #5744 |
| 32. | Bessie | MS #5744 |
| 33. | Jennie | MS #5744 |
| 34. | Little May | MS #5744 |
| 35. | Treble Extension | MS #3954 |
| 36. | Intentionally left blank | |
| 37. | Three Brothers | MS #5891 |
| 38. | New York No. 3 | MS #20285 |
| 39. | New York No. 9 | MS #20285 |
| 40. | New York No. 6 | MS #20285 |
| 41. | A portion of the Alliance Lode, MS #2970 cont approx. 2.4 acres, PPI 2211-3040-00-022 | MS #2970 |
| 42. | A portion of the Stark Lode MS #2980 cont approx. 2.8 acres, PPI 2211-3040-00-044 | MS #2989 |
| 43. | A portion of the Snowstorm Lode MS #14253 cont approx. 2.0 acres, PPI 2211-3040-00-044 | MS #14253 |
| 44. | Paris | MS #2968 |
| 45. | Little Maud | MS #2967 |

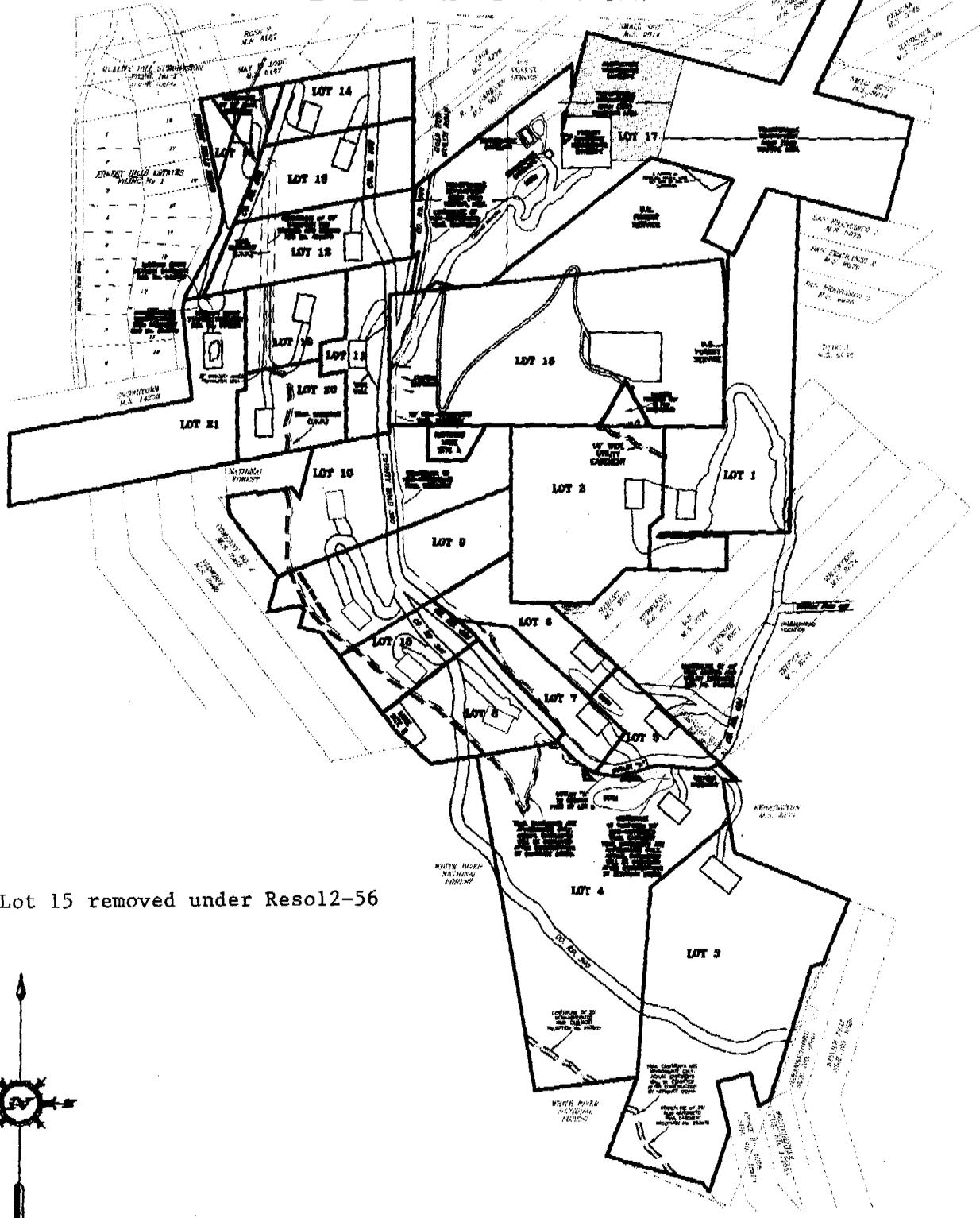
EXCEPTING THEREFROM THOSE PORTIONS AS RECORDED ON THE PLATS OF QUALITY HILLS SUBDIVISION FILING NO. 1, A SUBDIVISION AS FILED FOR RECORD AT RECEPTION NUMBER 106042, FOREST HILLS ESTATES FILING No. 1, A SUBDIVISION AS FILED FOR RECORD AT RECEPTION NUMBER 102925, ALL IN THE OFFICE OF THE CLERK AND RECORDER FOR SUMMIT COUNTY, STATE OF COLORADO.

CONTAINING 308 ACRES, MORE OR LESS.

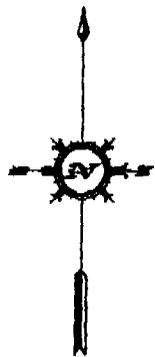
Containing 19⁺ acres more or less

Excepting Lot 15: Removed from The PUD under Reso 12-56

EXHIBIT B WESTERN SKY RANCH MAJOR PUD AMENDMENT 2011 DEVELOPEMENT PLAN



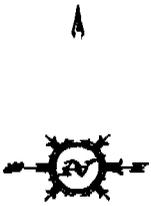
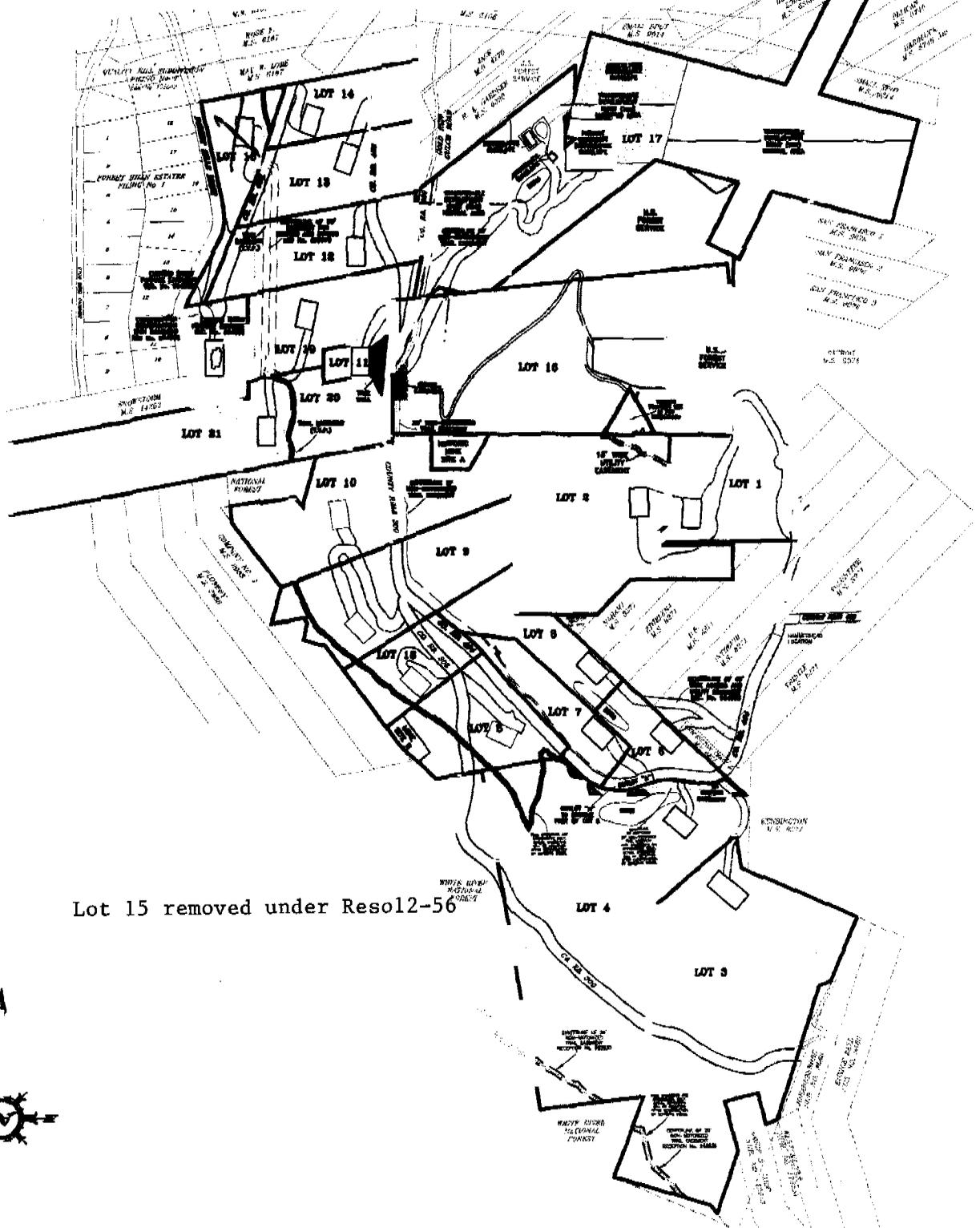
*Lot 15 removed under Resol12-56



SCALE: 1" = 600'

BASELINE SURVEYS, LLC.
04/19/2011, P.U.D. AMENDMENT 2011, SHT No.1

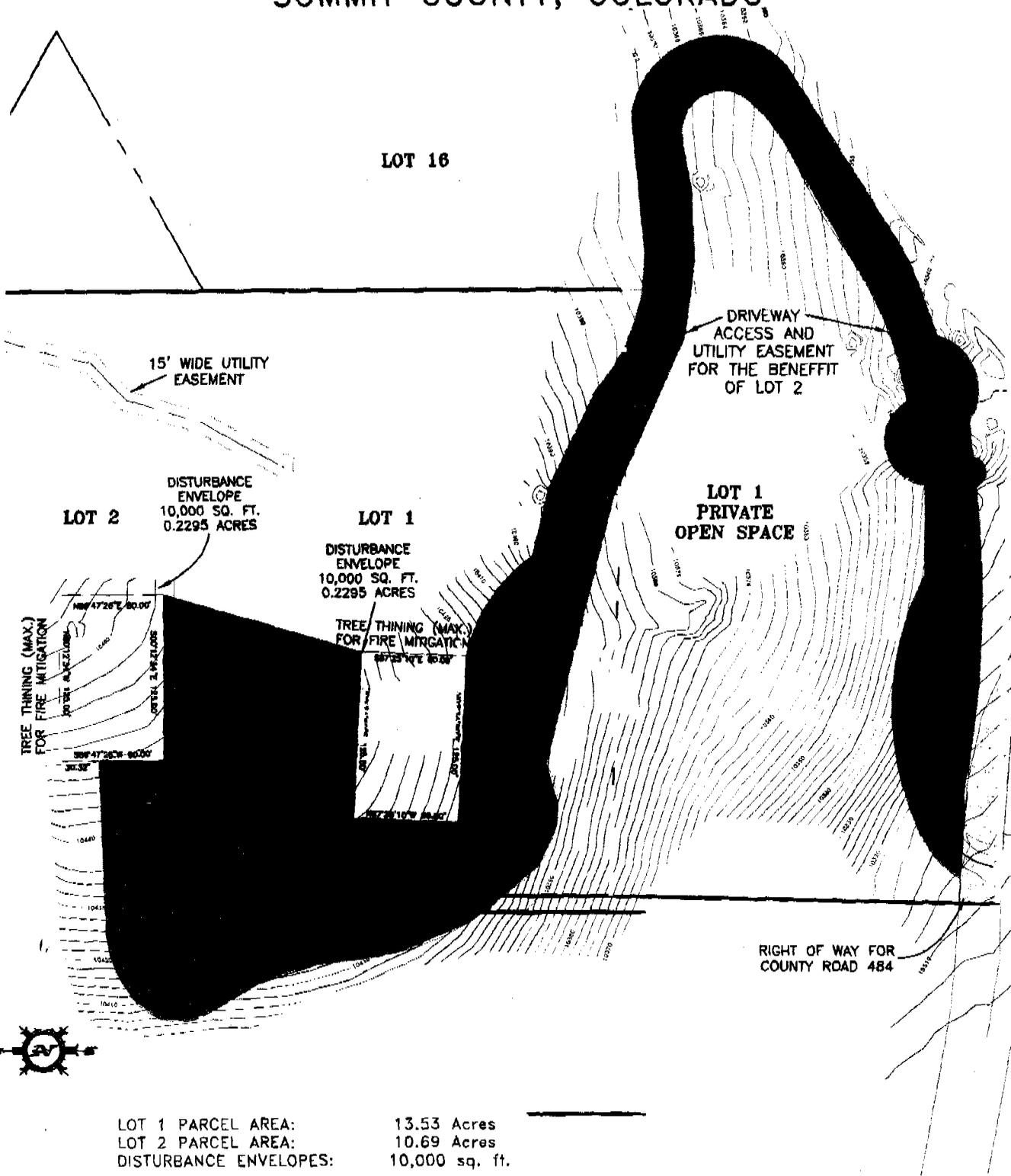
EXHIBIT B WESTERN SKY RANCH MAJOR PUD AMENDMENT 2011 TREE THINNING DIAGRAM



SCALE: 1' = 600"

BASELINE SURVEYS, LLC.
04/19/2011, P.U.D. AMENDMENT 2011, SHT No.2

WESTERN SKY RANCH
 LOTS 1 AND 2
 SUMMIT COUNTY, COLORADO



LOT 1 PARCEL AREA: 13.53 Acres
 LOT 2 PARCEL AREA: 10.69 Acres
 DISTURBANCE ENVELOPES: 10,000 sq. ft.

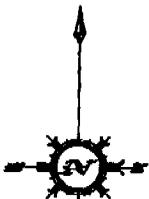
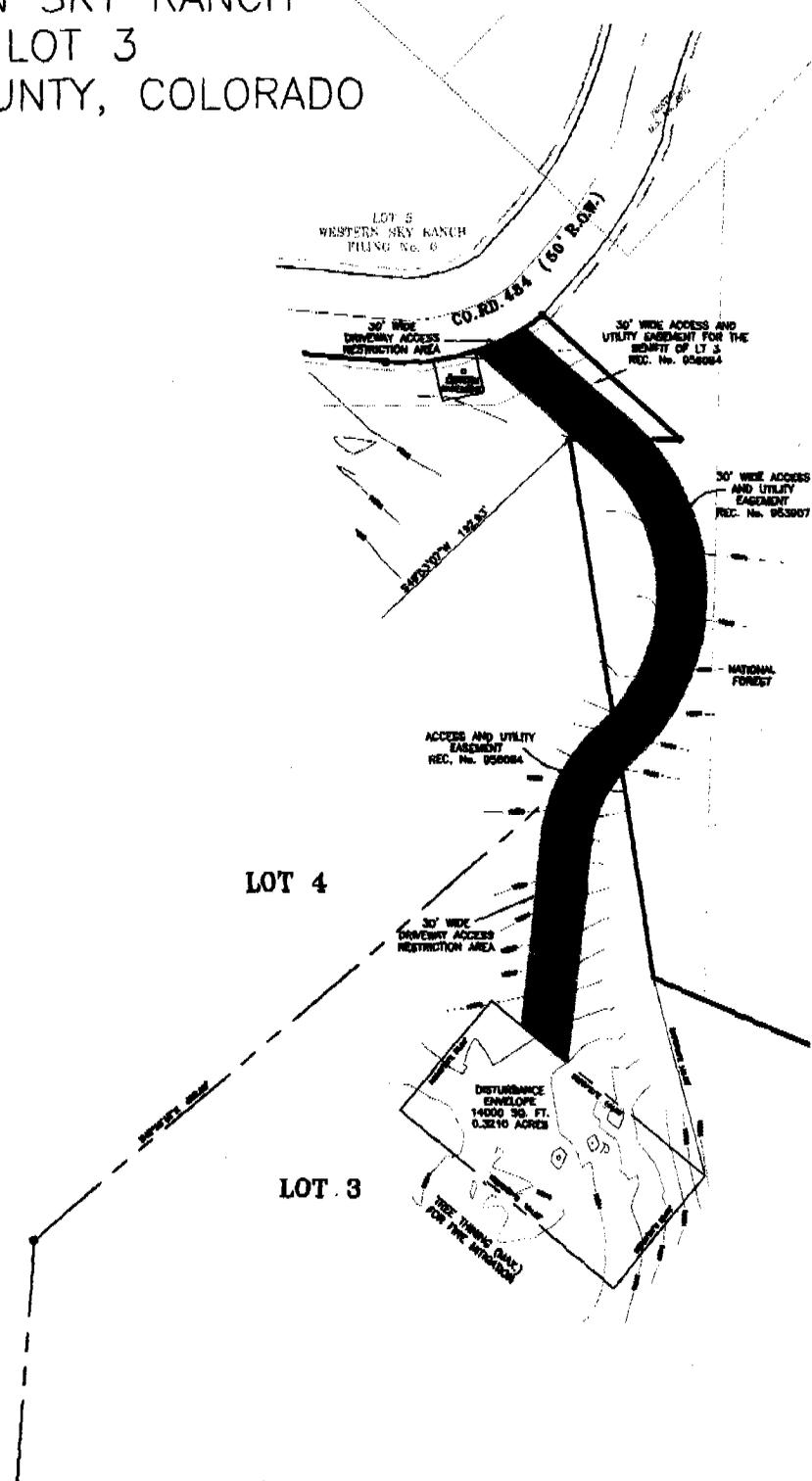
SCALE 1" = 100'
 DENOTES DRIVEWAY ([Symbol])
 DISTURBANCE AREA ([Symbol])

BASELINE SURVEYS, LLC.

04/19/2011 LOTS 1 AND 2

SHT No.4

WESTERN SKY RANCH
 LOT 3
 SUMMIT COUNTY, COLORADO



PARCEL AREA: 20.35 Acres
 DISTURBANCE ENVELOPE: 14,000 sq. ft.
 APPROX. DRIVEWAY LENGTH: 450 ft.

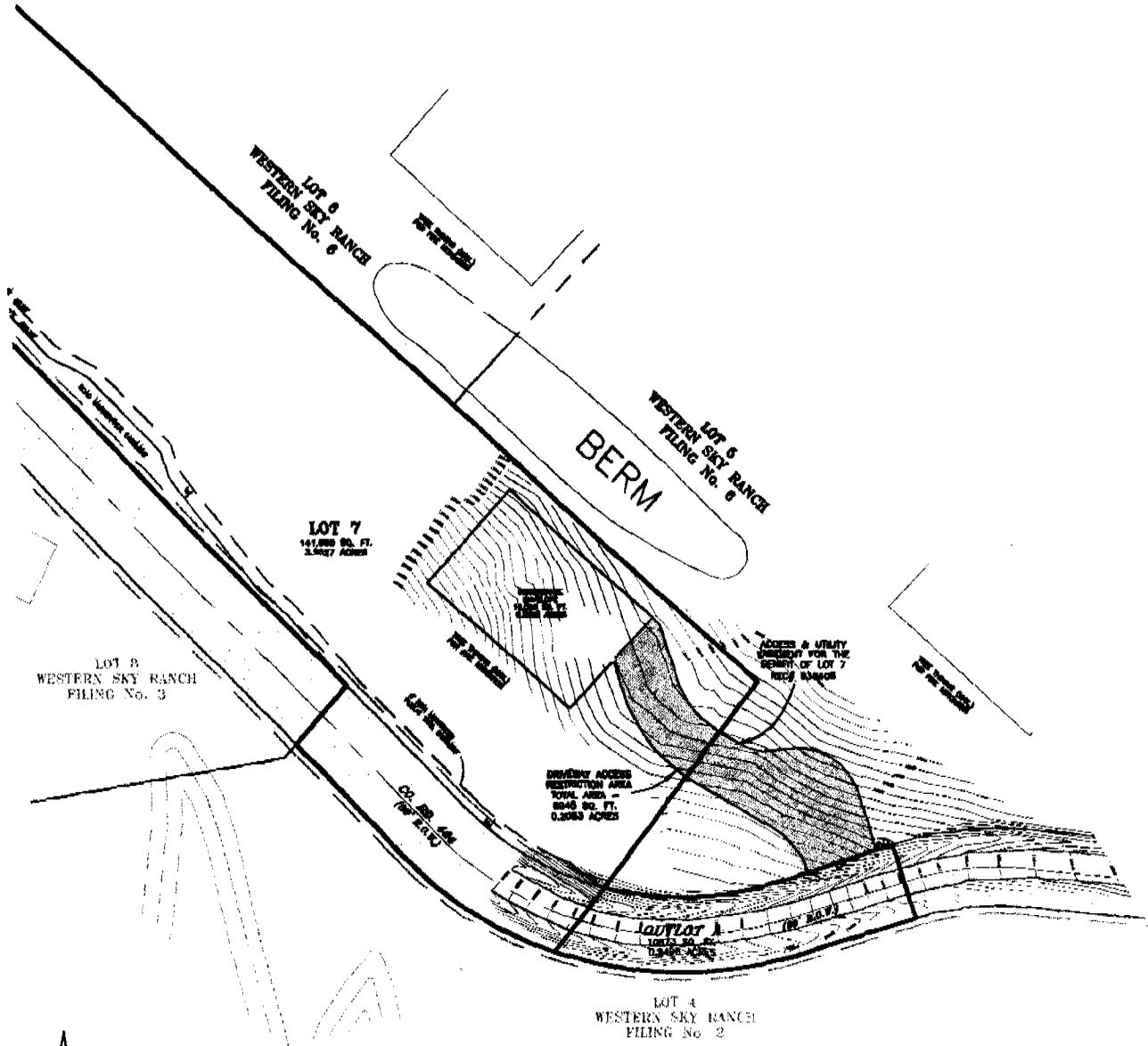
SCALE: 1' = 100"

BASELINE SURVEYS, LLC.

04/19/2011, LOT 3

SHT No.5

WESTERN SKY RANCH
 LOT 7
 SUMMIT COUNTY, COLORADO



PARCEL AREA: 3.25 Acres
 DISTURBANCE ENVELOPE: 10,000 sq. ft.
 APPROX. DRIVEWAY LENGTH: 200 ft.

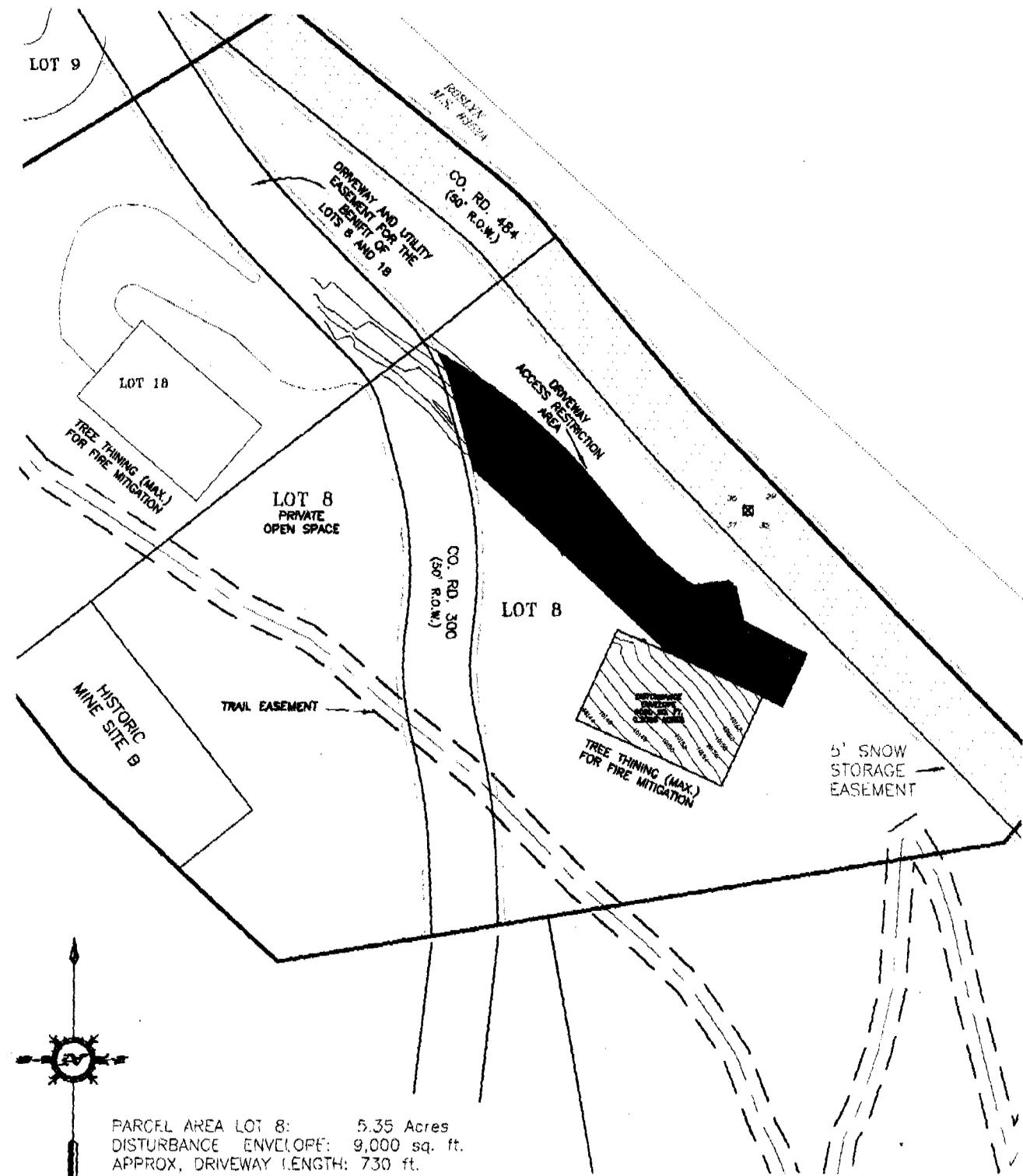
SCALE: 1" = 100'

BASELINE SURVEYS, LLC.

04/19/2011, LOT 7

SHT No.8

WESTERN SKY RANCH
 LOT 8
 SUMMIT COUNTY, COLORADO



PARCEL AREA LOT 8: 5.35 Acres
 DISTURBANCE ENVELOPE: 9,000 sq. ft.
 APPROX. DRIVEWAY LENGTH: 730 ft.

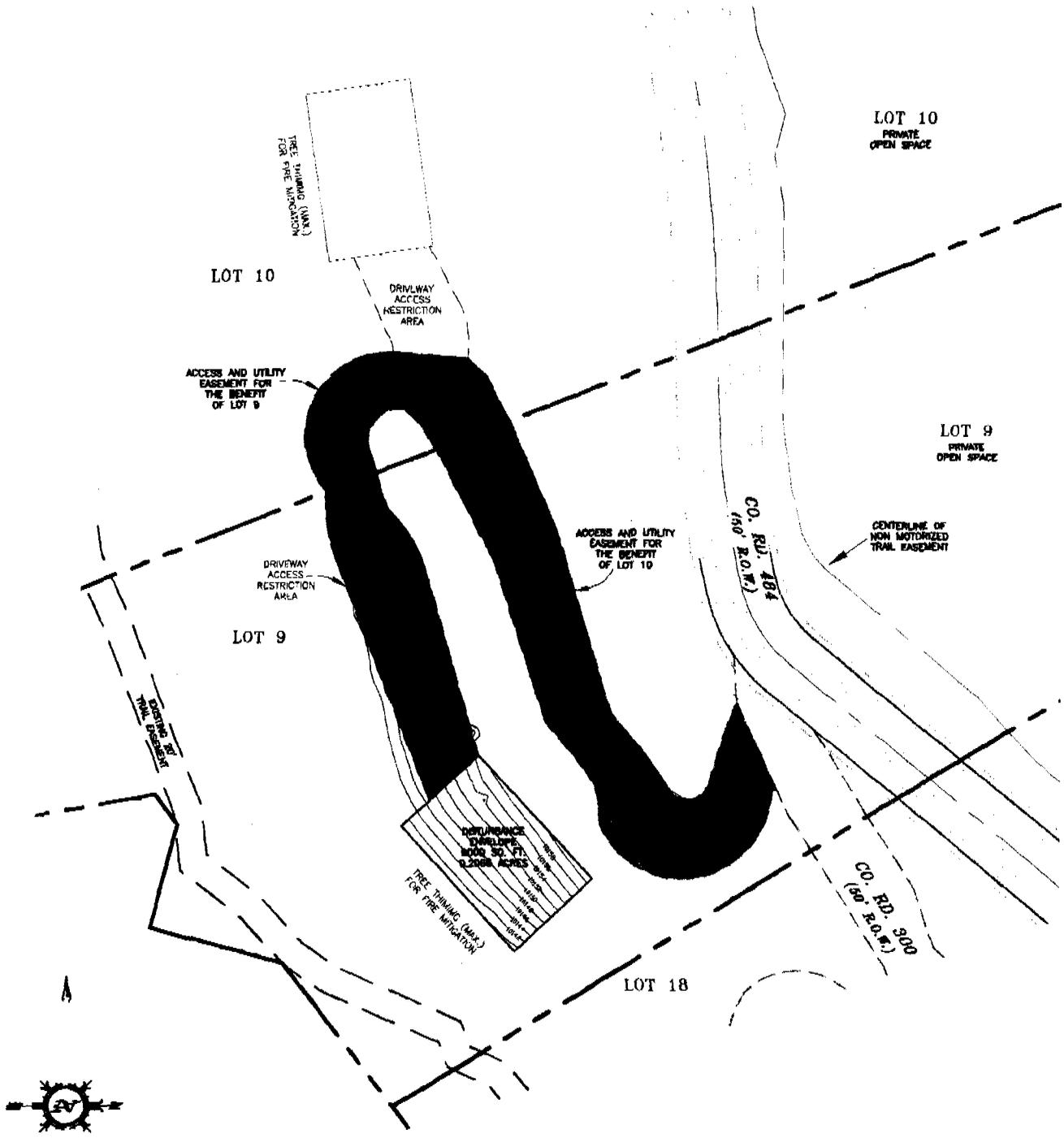
SCALE: 1" = 100'

BASELINE SURVEYS, LLC.

04/19/2011, LOT 8

SHT No.9

WESTERN SKY RANCH
 LOT 9
 SUMMIT COUNTY, COLORADO

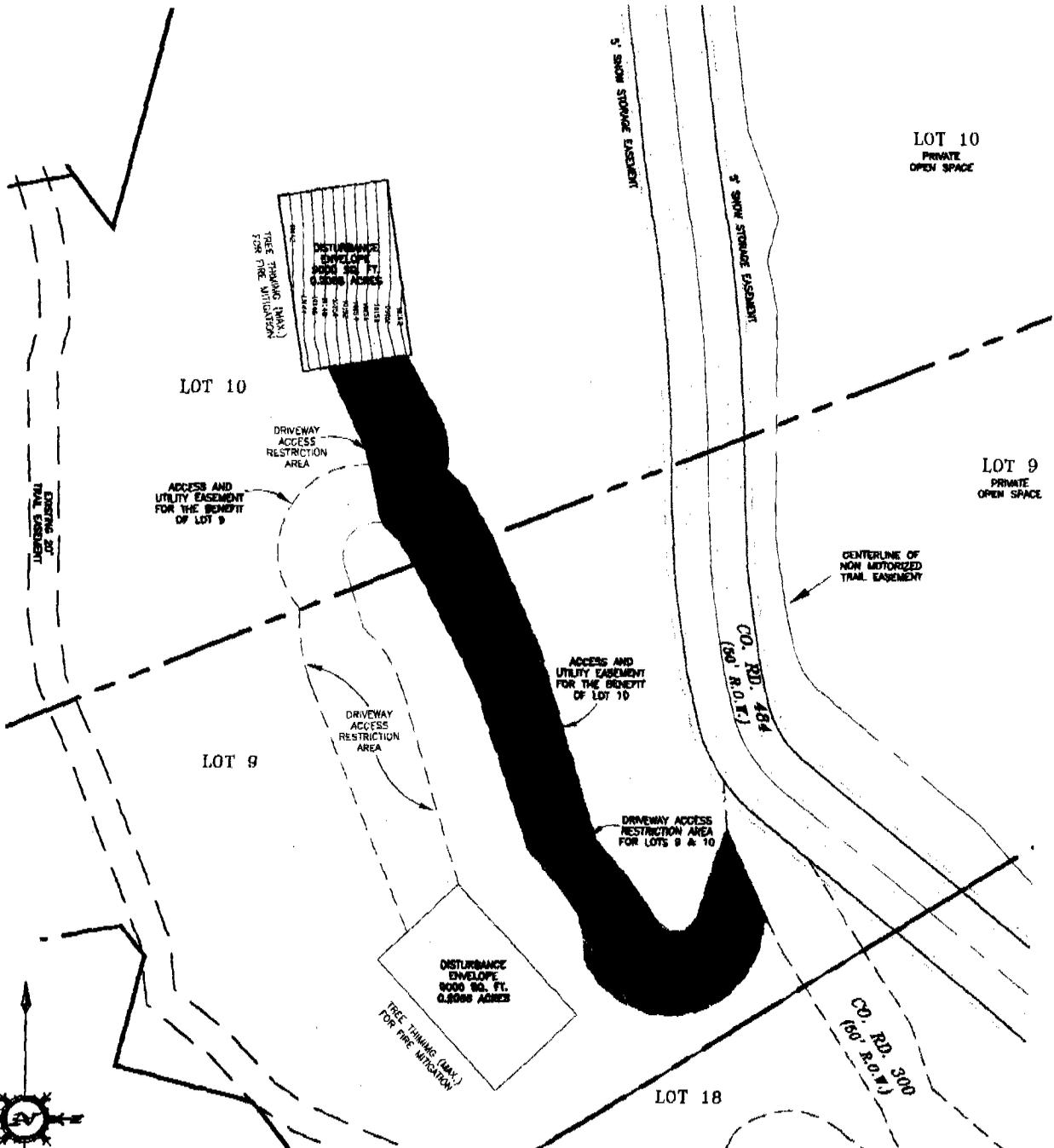


PARCEL AREA LOT 9: 8.13 Acres
 DISTURBANCE ENVELOPE: 9,000 sq. ft.
 APPROX. DRIVEWAY LENGTH: 780 ft.

SCALE: 1" = 100'

BASELINE SURVEYS, LLC.
 04/19/2011, LOT 9 SHT No.10

WESTERN SKY RANCH LOT 10 SUMMIT COUNTY, COLORADO

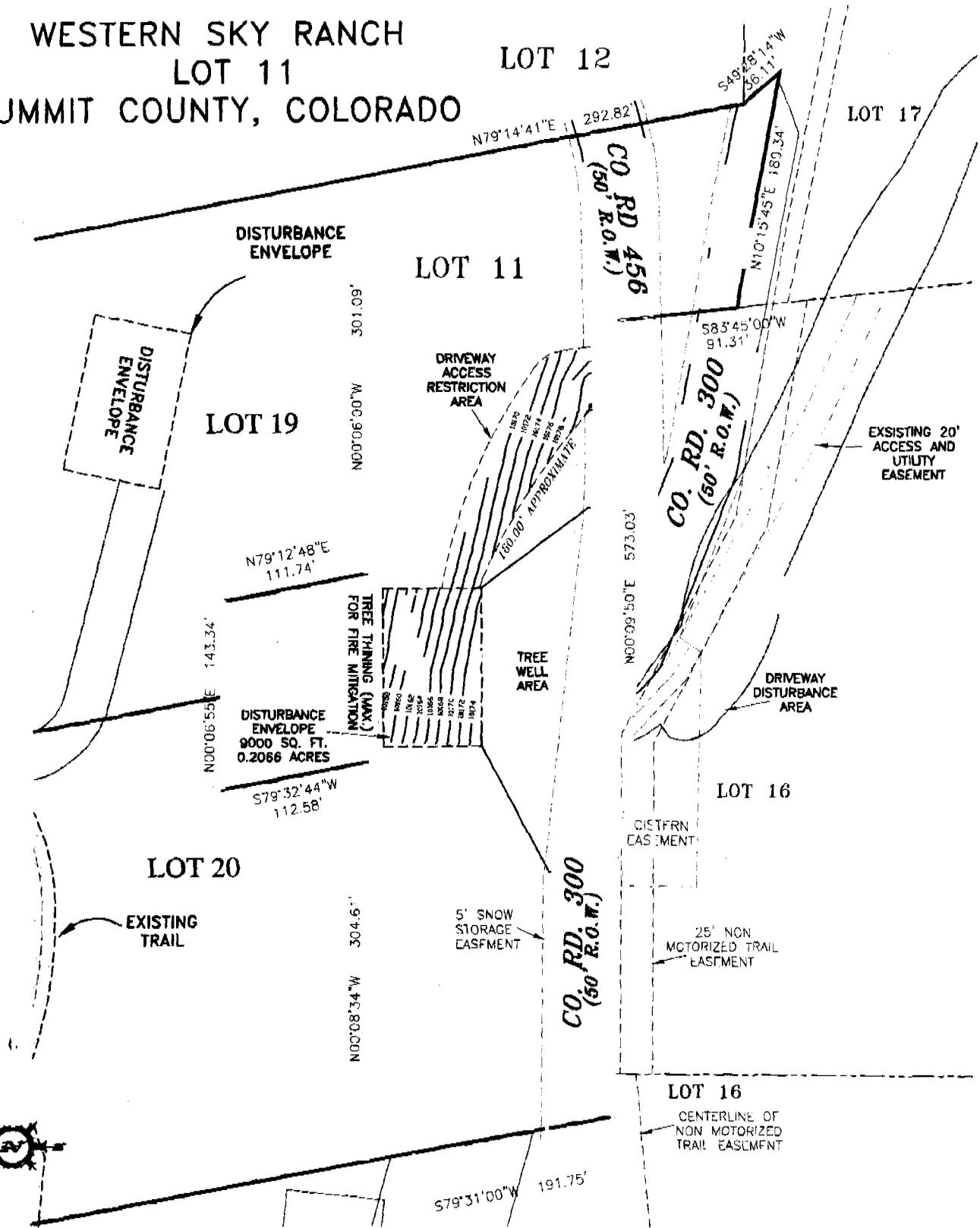


PARCEL AREA LOT 10: 9.53 Acres
 DISTURBANCE ENVELOPE: 9,000 sq. ft.
 APROX, DRIVEWAY LENGTH: 550 ft.

SCALE: 1" = 100'

BASELINE SURVEYS, LLC.
 04/19/2011, LOT 10 SHT No.11

WESTERN SKY RANCH
 LOT 11
 SUMMIT COUNTY, COLORADO

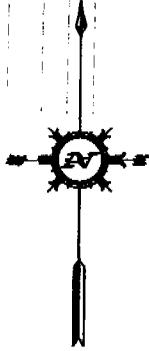
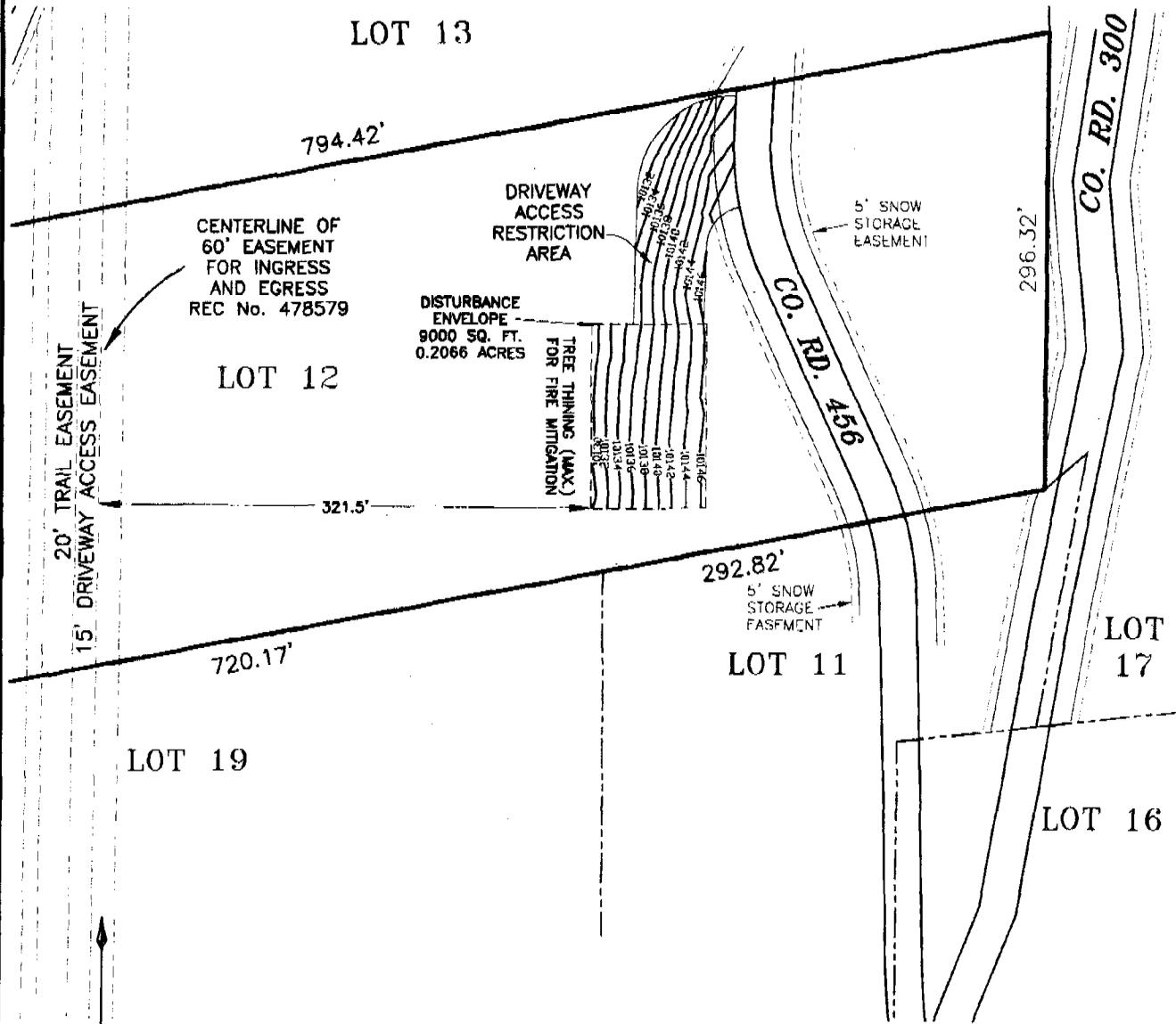


PARCEL AREA: 4.01 Acres
 DISTURBANCE ENVELOPE: 9,000 sq. ft.
 APPROX. DRIVEWAY LENGTH: 160 ft.

SCALE: 1' = 100"

BASELINE SURVEYS, LLC.
 04/19/2011, LOT 11 SHT No.12

WESTERN SKY RANCH
 LOT 12
 SUMMIT COUNTY, COLORADO

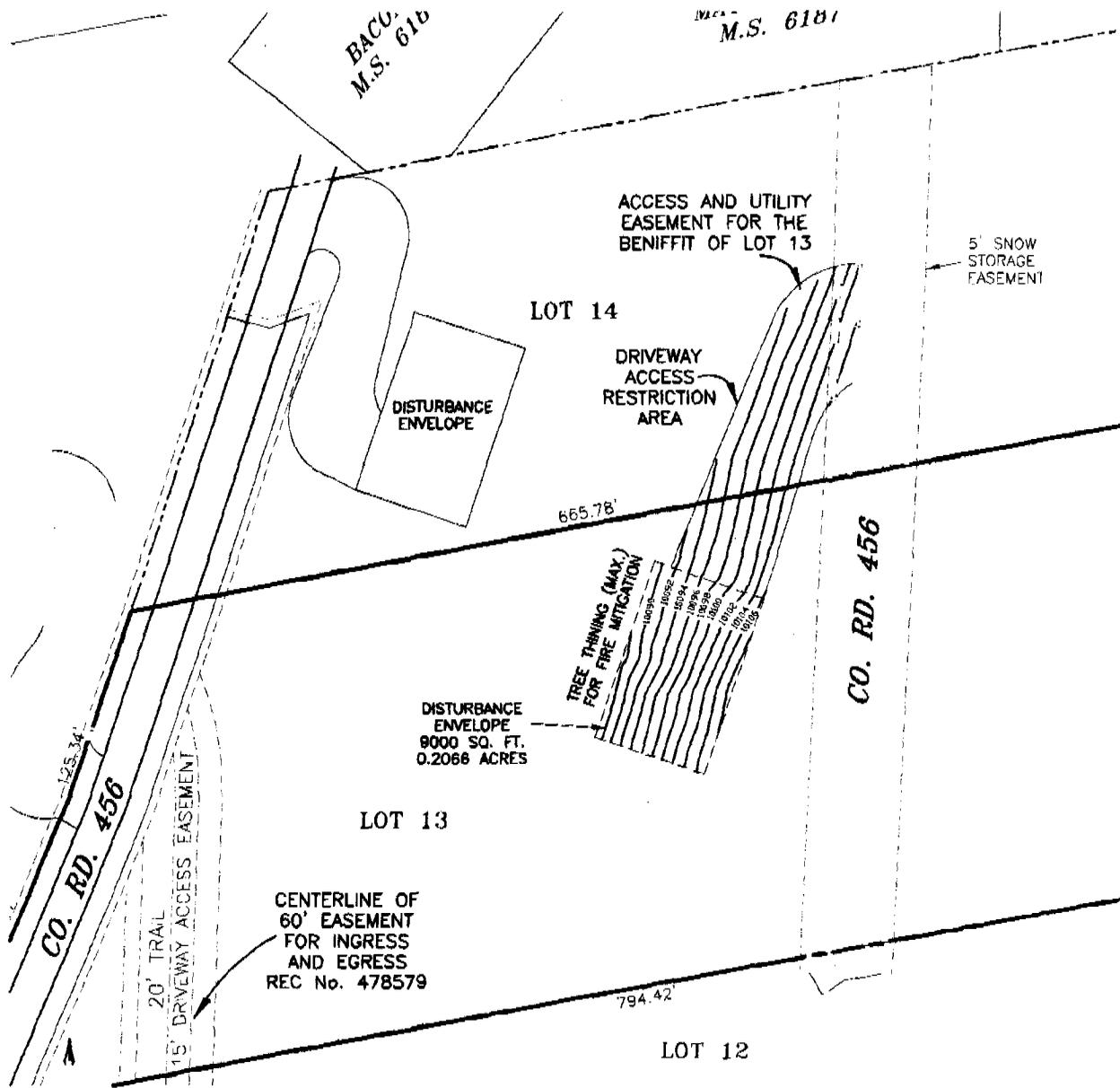


PARCEL AREA: 5.76 Acres
 DISTURBANCE ENVELOPE: 9,000 sq. ft.
 APPROX. DRIVEWAY LENGTH: 110 ft.

SCALE: 1" = 100'

BASELINE SURVEYS, LLC.
 04/19/2011, LOT 12 SHT No.13

WESTERN SKY RANCH
 LOT 13
 SUMMIT COUNTY, COLORADO



PARCEL AREA: 4.98 Acres
 DISTURBANCE ENVELOPE: 9,000 sq. ft.
 APPROX. DRIVEWAY LENGTH: 185 ft.

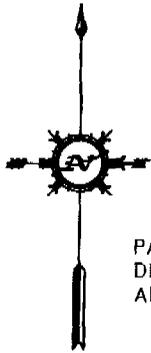
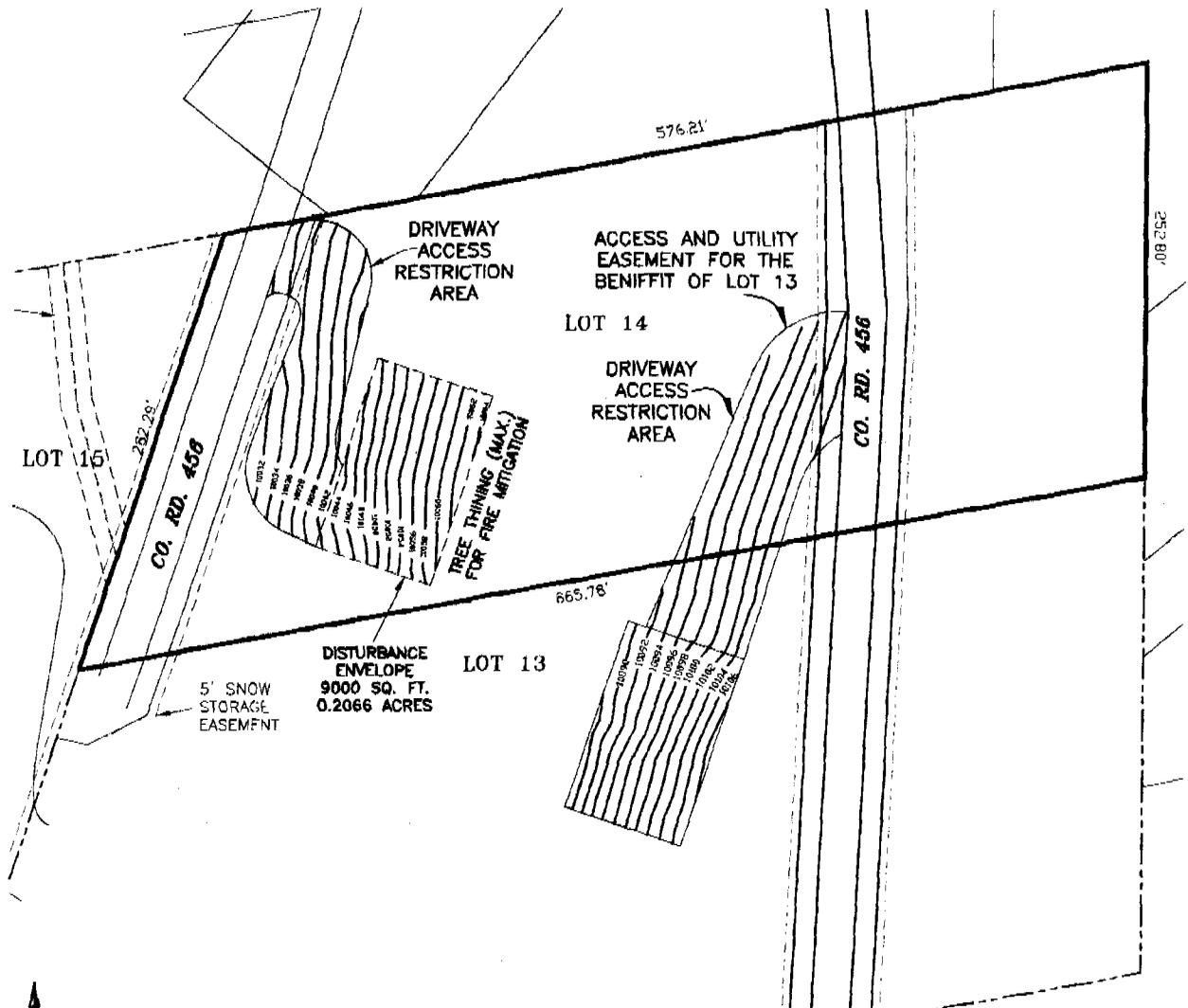
SCALE: 1" = 100'

BASELINE SURVEYS, LLC.

04/19/2011, LOT 13

SHT No.14

WESTERN SKY RANCH
 LOT 14
 SUMMIT COUNTY, COLORADO

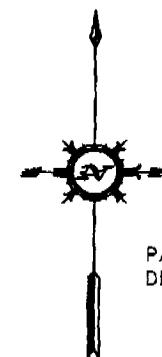
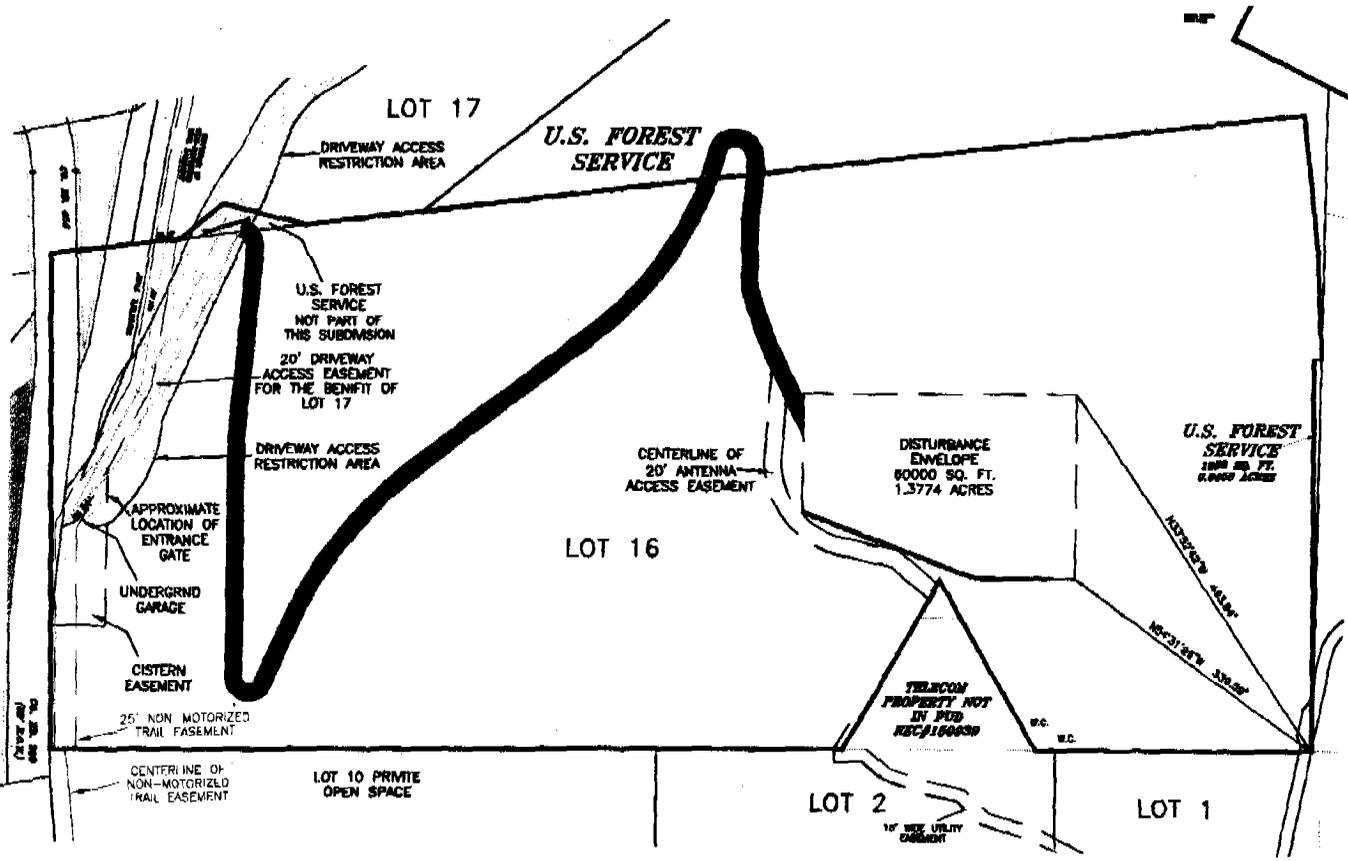


PARCEL AREA: 3.53 Acres
 DISTURBANCE ENVELOPE: 9,000 sq. ft.
 APPROX. DRIVEWAY LENGTH: 150 ft.

SCALE: 1" = 100'

BASELINE SURVEYS, LLC.
 04/19/2011, LOT 14 SHT No.15

WESTERN SKY RANCH
 LOT 16
 SUMMIT COUNTY, COLORADO

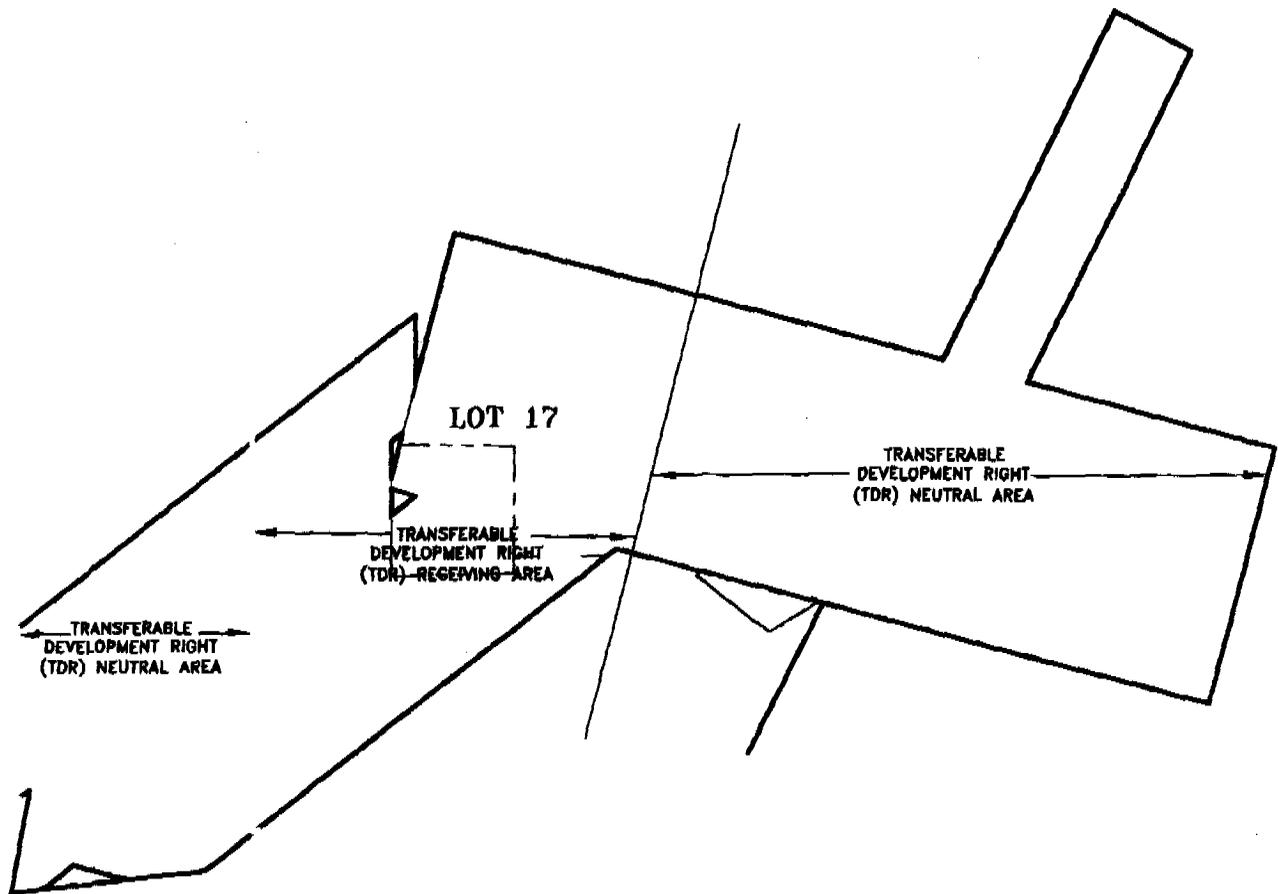


PARCEL AREA LOT 17: 21.48 Acres
 DISTURBANCE ENVELOPE: 60000 sq. ft.

SCALE: 1' = 200"

BASELINE SURVEYS, LLC.
 04/19/2011, LOT 16 SHT No.17

WESTERN SKY RANCH
DETAIL TDR, LOT 17
SUMMIT COUNTY, COLORADO

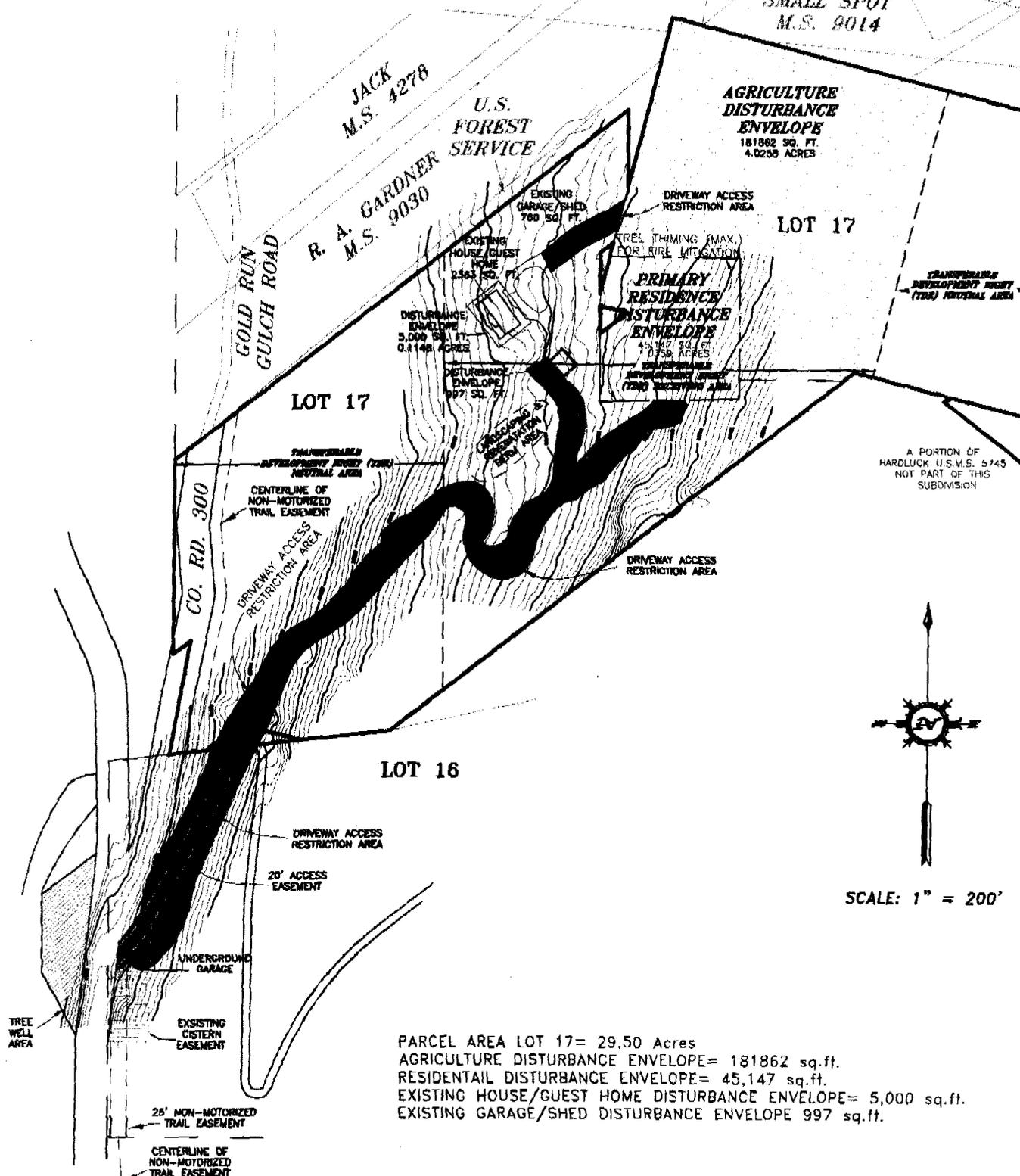


SCALE: 1" = 300'

BASELINE SURVEYS, LLC.
04/19/2011 DETAIL TDR LOT 17 SHT No.1

WESTERN SKY RANCH LOT 17 SUMMIT COUNTY, COLORADO

SMALL SPOT
M.S. 9014



PARCEL AREA LOT 17= 29.50 Acres
 AGRICULTURE DISTURBANCE ENVELOPE= 181862 sq.ft.
 RESIDENTIAL DISTURBANCE ENVELOPE= 45,147 sq.ft.
 EXISTING HOUSE/GUEST HOME DISTURBANCE ENVELOPE= 5,000 sq.ft.
 EXISTING GARAGE/SHED DISTURBANCE ENVELOPE 997 sq.ft.

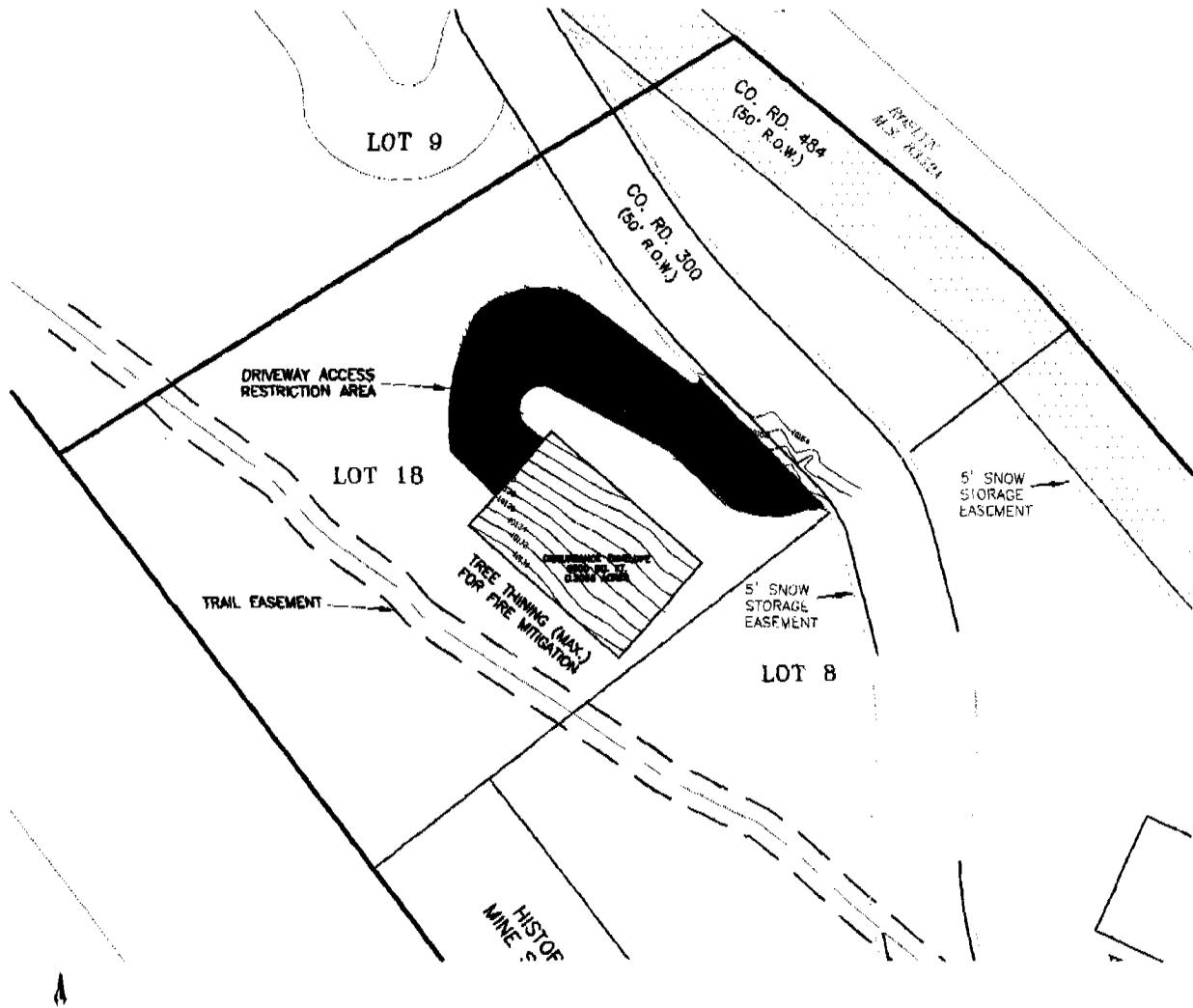
BASELINE SURVEYS, LLC.

04/19/2011,

LOT 17

SHT No.18

WESTERN SKY RANCH
LOT 18
SUMMIT COUNTY, COLORADO



PARCEL AREA LOT 18: 3.29 Acres
DISTURBANCE ENVELOPE: 9,000 sq. ft.
APPROX. DRIVEWAY LENGTH 600 ft

SCALE: 1" = 100'

BASELINE SURVEYS, LLC.

04/19/2011, LOT 18

SHT No.19

WESTERN SKY RANCH
 LOTS 19, 20 AND 21
 SUMMIT COUNTY, COLORADO

AND EGRESS
 REC No. 478579

EXISTING
 ENTRY
 FEATURE
 EASEMENT
 REC. No.
 964357

LOT 12

DISTURBANCE
 ENVELOPE
 10,000.0 SQ. FT.

EXISTING ENTRY
 FEATURE EASEMENT
 REC. No. 964356

LOT 19

CONSTRUCTION
 IDENTIFICATION
 SIGN
 EASEMENT
 REC No.
 964358

ACCESS AND UTILITY
 EASEMENT FOR THE
 BENEFIT OF LOT 20

EXISTING
 DRIVEWAY

TREE THINNING (MAX.)
 FOR FIRE MITIGATION

35' DRIVEWAY ACCESS
 RESTRICTION AREA

EXISTING
 HOUSE
 DISTURBANCE
 ENVELOPE
 10,000. SQ. FT.

TREE THINNING (MAX.)
 FOR FIRE MITIGATION

LOT 11

TREE THINNING (MAX.)
 FOR FIRE MITIGATION

35' DRIVEWAY ACCESS
 RESTRICTION AREA

ACCESS AND UTILITY
 EASEMENT FOR THE
 BENEFIT OF LOT 19

LOT 21

LOT 20

LOT 21
 PRIVATE
 OPEN SPACE

EXISTING
 TRAIL

DISTURBANCE
 ENVELOPE
 10,000.0 SQ. FT.

TREE THINNING (MAX.)
 FOR FIRE MITIGATION



SCALE: 1" = 100'

| | |
|------------------------|----------------|
| PARCEL AREA LOT 19: | 3.58 Acres |
| PARCEL AREA LOT 20: | 3.86 Acres |
| PARCEL AREA LOT 21: | 9.31 Acres |
| DIST. ENVELOPE LOT 19: | 9,000 sq. ft. |
| DIST. ENVELOPE LOT 20: | 9,000 sq. ft. |
| DIST. ENVELOPE LOT 21: | 10,000 sq. ft. |

BASELINE SURVEYS, LLC.

04/19/2011, LOTS 19, 20 AND 21 SHT No.20

WESTERN SKY RANCH
 LOT TABLE
 SUMMIT COUNTY, COLORADO

| LOTS 1-21 | SITE AREA | CALCS | | | | | | | | | | | |
|-------------------------------------|-------------|---------------|------------------|--------------------|------------------------------|-------------------------------|--------------------------|-------------------------|--|--|--|--|--|
| | TOTAL ACRES | TOTAL SQ. FT. | OPEN SPACE ACRES | OPEN SPACE SQ. FT. | DISTURBANCE ENVELOPE SQ. FT. | ENVELOPE DISTURBANCE % ON LOT | AVG. SLOPE (WITHIN ENV.) | ALLOWED BUILDING HEIGHT | | | | | |
| 1 | 13.52 | 588,931 | 9.60 | 418,176 | 10,000 | 1.69% | 20% | 32' | | | | | |
| 2 | 10.69 | 465,656 | 4.67 | 203,425 | 10,000 | 2.15% | 13 | 32' | | | | | |
| 3 | 20.35 | 886,446 | | | 14,000 | 1.56% | 12 | 35' | | | | | |
| 4 | 23.13 | 1,007,543 | | | 10,000 | 1.00% | 10 | 35' | | | | | |
| 5 (INCLUDING OUTLOT "A" 0.25 AC.) | 2.91 | 126,760 | | | 10,000 | 7.89% | 22 | 32' | | | | | |
| 6 | 3.60 | 156,816 | | | 10,000 | 6.37% | 17 | 32' | | | | | |
| 7 | 3.25 | 141,570 | | | 10,000 | 7.06% | 21 | 32' | | | | | |
| 8 | 4.97 | 216,493 | 2.00 | 87,120 | 9,000 | 4.15% | 29 | 32' | | | | | |
| 9 | 8.14 | 354,578 | 3.50 | 152,460 | 9,000 | 2.54% | 24 | 32' | | | | | |
| 10 | 9.72 | 423,403 | 3.52 | 153,331 | 9,000 | 2.12% | 27 | 32' | | | | | |
| 11 | 4.00 | 174,240 | | | 9,000 | 5.17% | 29 | 32' | | | | | |
| 12 | 5.76 | 250,906 | | | 9,000 | 3.59% | 24 | 32' | | | | | |
| 13 | 4.98 | 216,929 | | | 9,000 | 4.15% | 29 | 32' | | | | | |
| 14 | 3.53 | 153,767 | | | 9,000 | 5.85% | 24 | 32' | | | | | |
| 15 | 3.17 | 136,985 | | | 9,000 | 6.52% | 25 | 32' | | | | | |
| 16 | 21.48 | 935,669 | | | 60,000 | 6.41% | 11 | 35' | | | | | |
| 17 (TOTAL) | 29.50 | 1,285,020 | | | 233,006 | 18.13% | 14 | 35' | | | | | |
| 17 (PRIMARY RESIDENTIAL DIST ENV.) | | | | | 45,147 | 3.51% | 14 | 35' | | | | | |
| 17 (EXISTING HOUSE/GUEST HOME ENV.) | | | | | 5,000 | 0.39% | 16 | 35' | | | | | |
| 17 (EXISTING GARAGE/SHED ENV.) | | | | | 997 | 0.08% | 14 | 35' | | | | | |
| 17 (AGRICULTURAL ENV.) | | | | | 181,862 | 14.15% | 13 | 35' | | | | | |
| 18 | 3.29 | 143,312 | | | 9,000 | 6.28% | 24 | 32' | | | | | |
| 19 | 3.58 | 155,945 | | | 9,000 | 5.77% | 21 | 32' | | | | | |
| 20 | 3.86 | 168,141 | | | 9,000 | 5.35% | 26 | 32' | | | | | |
| 21 | 9.68 | 421,661 | 5.22 | 227,383 | 10,000 | 2.37% | 28 | 35' | | | | | |
| HISTORIC MINE SITE A | 0.71 | 30,928 | | | | | | | | | | | |
| HISTORIC MINE SITE B | 0.38 | 16,553 | | | | | | | | | | | |
| TOTALS | 191.1 ac | 8,321,267 | 28.51 AC | 1,241,895 S.F. | 467,006 S.F. | | | | | | | | |

BASELINE SURVEYS, LLC.
 04/19/2011, LOT TABLE SHT No. 21

EXHIBIT C

Golder Associates Inc.
44 Union Boulevard, Suite 800
Lakewood, CO USA 80228
Telephone: (303) 980-0840
Fax: (303) 988-2000
www.golder.com



February 9, 2004

Our Ref: 043-2271

Summit County Planning
PO Box 5660
Frisco, Colorado 80443

Attention: Ms. Kristin Dean

RE: THE WOODLANDS PUD SITE NEAR BRECKENRIDGE COLORADO

Dear Ms. Dean:

Golder Associates Inc. (Golder) has prepared this letter on behalf of DDMCWMLLC. at your request to document appropriate measures to manage elevated soil lead concentrations in the The Woodlands. In general, the approach will include sampling soil and testing for lead, action levels and Best Management Practices (BMPs) designed to minimize the potential to contact soil lead by residents and during construction. This plan relates to naturally occurring soil lead that may be excavated during construction.

BACKGROUND

Golder sampled and tested surface soils on the property during August 2004. The results were documented in a report submitted to Summit County Planning in November 2004 (Golder 2004). Lead concentrations range from 30 mg/kg to 2,772 mg/kg, averaging 587 mg/kg. Eight samples exceed the Generic Soil Screening Level (SSL) of 400 mg/kg established by the US Environmental Protection Agency (EPA). The identified elevated lead concentrations are distributed throughout the property, although they are concentrated on the north portion of the property (5 samples) in claims Princeton, Elcnora, Mathilda, Anna, Elizabeth and Barbara.

It is important to note that the SSLs are not mandatory action levels; rather they are concentrations at which EPA recommends further investigation. The SSLs are derived based on human health risk models that incorporate a conservative set of assumptions. For instance, the model assumes a bare soil surface and direct contact with the soil by a child 350 days/year (EPA 2001). EPA has established screening levels for bare residential soil: a hazard standard of 400 ppm (ppm and mg/kg are equivalent) by weight in play areas based on the play area bare soil sample and an average of 1,200 ppm in bare soil in the remainder of the yard (40 CFR Part 745).

EPA recommends that measures to minimize contact be taken for soils with lead concentrations between 400 and 1,200 ppm. For soils exceeding 1,200 ppm, removal of the contaminated soil or installation of a permanent covering is recommended. Golder performed a review of soil lead action levels developed for historic mining area remediation projects located predominantly in the western US. The results are summarized in Table 1. Action levels for residential use range from 500 to 3,500 ppm, averaging 1,041 ppm. Of particular interest is the Smuggler Mine, located in Aspen, Colorado, where an action level of 1,000 ppm was established. The EPA implemented remedy was to excavate soils exceeding 3,000 ppm lead for disposal at the local landfill. Soils with lead concentrations between 1,000 and 3,000 ppm were covered by 6 to 12 inches of soil and revegetated (EPA 2002).

Most of the action levels below 1,000 ppm are at sites where the lead contamination was anthropogenic, due to emissions from smelters. The bioavailability of lead from smelters is much

higher than naturally occurring lead, because the particles are much smaller and more easily absorbed into the body. The soil lead at the The Woodlands property is naturally occurring and expected to be similar to the Straggler Mine. In addition, EPA Lead Sites Workgroup guidance (EPA 2003) recommends that at sites where lead is naturally occurring and not restricted to the upper 1 to 2 inches of soil, that covering is preferred to excavating.

The following sections present the proposed sampling plan, evaluation criteria and mitigation measures for development of The Woodlands. The recommendations are based on Golder's previous experience at similar sites and a review of guidance by EPA and other regulators. In particular, the following documents were reviewed:

- Lead Safe Yards, Developing and Implementing a Monitoring, Assessment and Outreach Program for Your Community (EPA 2001b)
- Superfund Lead-Contaminated Residential Sites Handbook (EPA 2003)

SAMPLING PLAN

Sample Locations

House Footprints and Access

Prior to any construction activities, the disturbance envelope soil will be sampled as follows. Samples will be collected by coring, shovel or backhoe. The soil profile at the center of the proposed foundation will be sampled by collecting a series of stratified samples to a depth equal to 1 foot below the proposed depth of excavation for the foundation. These samples will be analyzed to characterize the soil that will be excavated during construction. One sample will be collected from each 2-foot vertical interval. For example if the depth of excavation for the foundation is 10 feet, six samples will be collected (0-2, 2-4, 4-6, 6-8, 8-10 and 10-12 feet). In addition, representative samples will be collected from the access road right-of-way.

Yards and Landscaped Areas

Four additional representative locations will be sampled to characterize the surface soils within the residential use area (i.e., the landscaped lawn). The sample points will be collected from the midpoint between the edge of the foundation and the edge of the disturbance envelope in each of the four cardinal directions. Samples will be collected from the mineral soil layer (e.g., below the litter layer). Samples will be collected from five depth intervals:

- 0 - 1 inch;
- 1 - 6 inches;
- 6 - 12 inches;
- 12 - 18 inches; and
- 18 - 24 inches.

Sample Collection and Handling

Samples will be collected in accordance with ASTM method E-1727-04 (Standard Practice for Field Collection of Soil Samples for Subsequent Lead Determination). The samples will be stored at 4°C

and protected from direct sunlight. Duplicate samples will be collected for 10 percent of the samples, with at least one duplicate sampled collected per lot.

Samples can be analyzed by either X-Ray Fluorescence (XRF) or acid-digestion followed by ICP-AES (EPA Method 3050B or 3051 and 6010B). All samples will be screened through a #60 sieve (250 micron, ASTM E-11) prior to analysis.

ACTION LEVELS

Action levels are based on the EPA Guidelines established in 40 CFR Part 745 and the EPA Lead Sites Workgroup (EPA 2003). The no-action level is 400mg/kg. If a sample exceeds 400 mg/kg, four additional points will be sampled at a distance of 10 feet from the initial sample point. If the additional samples exceed 400 mg/kg, sampling will continue at 10 foot intervals until a sample less than 400 mg/kg is collected or the boundary of the landscaping is reached. The results will be used to delineate the extent of lead-contaminated soils.

All areas with soil lead concentrations between 400 mg/kg and 1,200 mg/kg will be classified as "elevated". Soil lead concentrations exceeding 1,200 mg/kg will be classified as "moderately high".

MITIGATION

Common mitigation measures include avoidance, barriers or excavation. DDMCWLLC has already incorporated avoidance into the plan by revising building locations to avoid previously identified areas of elevated soil lead. EPA recommends that property owners and other decision makers should implement effective measures to reduce or prevent children's' exposure to lead in soil that exceeds these levels. These measures may incorporate, but are not limited to, interim controls that include covering bare soil and placement of washable doormats in entryways. EPA recommends that mitigation methods could include modest actions, such as planting grass (or other ground cover) to more extensive actions such as covering the bare soil with several inches of clean fill (EPA 2001a).

Excavation - House footprint and Access

Much of the soil that is excavated will be reused as fill. For instance, excavated material from below the foundation will remain for use as fill, or cut material for access roads and driveways that will be used as fill below a paved driveway. This amounts to placement of a permanent cover. All other soil exceeding 400 ppm lead that is excavated during construction will be managed to minimize the potential for direct contact. Two options will be available:

- The soil will remain on the property and be covered by a minimum of 1 foot of clean soil and revegetated or a permanent barrier, such as concrete or asphalt.
- The soil will be removed and hauled to an approved municipal landfill for disposal.

Where possible, the first option (covering with clean soil) is preferred. As stated previously, lead is relatively immobile in soils. In addition, the larger particle sizes in naturally occurring soil are too large to be absorbed in the human body, significantly reducing the bioavailability when compared to anthropogenic lead from such sources as smelters. Loading and hauling soil offsite will result in crushing of particles, reducing the size and increasing the bioavailability. In addition, hauling will increase the potential to expose off-site populations.

In some cases, such as when excavation volumes are too large to store on the property, it may be necessary to dispose of soil off-site. One possible disposal site is the Summit County Landfill. Soil

proposed to be disposed of offsite will be tested using EPA Method 1311 (Toxicity Characteristics Leaching Procedure) to determine appropriate disposal options.

Surface Soils -- Yards and Landscaped Areas

Mitigation of surface soils within the disturbance footprint is based on EPA recommendations (40 CFR Part 745 and Lead Sites Work Group [EPA 2003]). Soils classified as elevated (lead concentrations between 400 ppm and 1,200 ppm) will not be used as children's play areas or gardens, unless the area is covered to minimize potential for contact using one of the following methods:

- Install raised-bed garden and supplement with clean topsoil.
- Install wood-framed raised play and picnic area filled with woodchips.
- Install path of walking stones for high-traffic areas.
- Seed and fertilize grassy areas, or cover with mulch or woodchips if not suitable for grass.

Areas within the disturbance footprint with soil lead concentrations exceeding 1,200 ppm will be treated as follows:

- Areas may not be used for children's play area, picnic area or gardening.
- Soils will be covered with a minimum of 1 foot of clean soil and revegetated.
- A visible barrier will be placed at the boundary between the contaminated soil and clean fill. Examples of suitable barriers/markers include snow fencing (usually orange), a clean, crushed limestone layer, and geofabric.

Protection of Workers During Construction

OSHA regulation 1926.62 (29CFR part 1926.62), the "lead in construction standard," applies to all private sector workers, no matter how few are employed. The regulation requires a written description of the work to be done, an estimate of the anticipated exposure to lead, and a statement detailing the precautions to be taken. If the anticipated exposure to lead reaches the "action level"—30 micrograms per cubic centimeter of air, averaged over an 8-hour day—extensive guidelines come into play to protect workers. Prior to construction an assessment will be performed to determine whether exposure levels are expected to exceed the action level. Regardless, the following actions will be implemented during construction to limit exposure of workers to lead.

- Prior to activities which will disturb soil, the ground will be dampened to minimize the dust that may be generated.
- Leather or comparable work gloves will be worn to cut down on hand contamination.
- Workers will not eat, drink, or smoke in the work area.

Workers will be provided with safety training prior to construction activities. In addition to the workplace precautions listed above, workers will be advised to:

- Wash their face and hands as soon as possible after leaving the site and before eating, drinking or smoking.

- Remove their boots or shoes at the door of their home to keep from tracking in contaminated soil.
- Wash their work clothing separately from their other clothing.

CONCLUSION

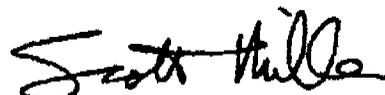
Golder has developed the sampling, testing and mitigation methods proposed herein based on available analysis of soil lead concentrations in the project area, a review of Federal Regulations and Guidance for lead contaminated soils and a review of clean up criteria and mitigation activities at similar sites in the western US. It should be noted that there are no statutory limits for these sites. However, the guidelines proposed in this report generally conform to EPA Guidance (EPA 2003) and are considered to be protective of human health.

Sincerely,

GOLDER ASSOCIATES INC.



Michael W. Bellitto
Senior Project Scientist



Scott Miller P.G.
Associate

MWB/PEH/jd

cc: Bobby Craig, Anapah Architects P.C.
Danny Middleton, DDMCWMLLC

REFERENCES

- U.S. Environmental Protection Agency (EPA). 2001 Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. Peer Review Draft. United States Environmental Protection Agency, Solid Waste and Emergency Response. OSWER 9355.4-24. March 2001.
- EPA. 2001a. Lead; Identification of Dangerous Levels of Lead; Final Rule. FR Vol. 66 No. 4. January 5. Available online : http://www.epa.gov/lead/403_final.pdf.
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- EPA. 2002. Five-Year Review Report. Second Five-Year Review Report for Smuggler Mountain Superfund Site. Pitkin County, Colorado. September 2002. Prepared By: Region VIII United States Environmental Protection Agency. Denver, Colorado.
- EPA 2003. Superfund Lead-Contaminated Residential Sites Handbook. Office of Emergency and Remedial Response. OSWER 9285.7-50. August 2003.

TABLE 1
LEAD CLEANUP GOALS AT RESIDENTIAL SITES

| Site | Contaminant | Cleanup Level | Regulatory Agency |
|---|-------------|---------------|--|
| Bartlesville, OK (National Zinc Co. NPL Site) | Lead | 925 mg/kg | Oklahoma DEQ |
| Park City, UT (Flagstaff Comfort Letter) | Lead | 500 mg/kg | U.S. EPA Region VIII |
| Butte, MT | Lead | 1,200 mg/kg | U.S. EPA Region VIII |
| Coeur d'Alene Basin, ID | Lead | 1,000 mg/kg | U.S. EPA, Region X |
| Coppertown, UT (Kamecott - South Zone) | Lead | 1,100 mg/kg | U.S. EPA |
| Denver, CO (Vasquez Blvd./I-70 Site) | Lead | 540 mg/kg | U.S. EPA Region VIII |
| Jasper County, MS | Lead | 800 mg/kg | U.S. EPA Region VII |
| Kellogg, ID (Bunker Hill Superfund Site) | Lead | 1,000 mg/kg | U.S. EPA, Region X |
| Leadville, CO | Lead | 3,500 mg/kg | County Health Dept utilizing community protection measures |
| Murray City, UT (Murray Smelter) | Lead | 1,200 mg/kg | U.S. EPA Region VIII |
| Palmerton, PA | Lead | 650 mg/kg | U.S. EPA Region III |
| Ruston/North Tacoma, WA | Lead | 500 mg/kg | U.S. EPA Region X |
| Aspen, CO | Lead | 1,000 mg/kg | U.S. EPA, Region VIII |
| Sandy, UT | Lead | 1,200 mg/kg | U.S. EPA, Region VIII |
| Winslow Township, NJ (King of Prussia Technical Corporation Superfund Site) | Lead | 500 mg/kg | U.S. EPA Region II |

EXHIBIT D

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FINAL REPORT ON ENVIRONMENTAL AND GEOLOGIC HAZARDS FOR THE BIG SKY RANCH AND ADDENDA

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- 1 Copy - Arapahoe Architects
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October 5, 2005

043-2271

TABLE OF CONTENTS

| | | |
|---------|---|----|
| 1.0 | INTRODUCTION..... | 1 |
| 1.1 | Objectives | 2 |
| 1.2 | Overview of Development issues | 2 |
| 2.0 | REVIEW OF GEOLOGIC HAZARDS | 4 |
| 2.1 | Site Geology, Physical Setting overview..... | 4 |
| 2.1 | Findings of Site Review..... | 5 |
| 2.1.1 | Slope Stability and Rockfall Hazard Potential | 5 |
| 2.1.2 | Mine Waste Deposits and the Potential for Underground Openings from Historic Mining Activities..... | 5 |
| 2.1.3 | Other Potential Geologic-related Hazards..... | 6 |
| 2.1.4 | Review of Published Historic Mine Records | 6 |
| 2.2 | Proposed Mitigation for Mine Openings | 7 |
| 3.0 | ENVIRONMENTAL HAZARDS..... | 9 |
| 3.1 | Review of Existing Geochemical Testing..... | 9 |
| 3.2 | Sampling | 10 |
| 3.2.1 | Mine Waste Pile Sampling | 10 |
| 3.2.2 | Soil Sampling | 11 |
| 3.2.3 | Adit Seepage Sampling | 11 |
| 3.3 | Testing Results..... | 11 |
| 3.3.1 | Chantilly adit drainage | 11 |
| 3.3.2 | Mine Waste | 12 |
| 3.3.2.1 | Chantilly Mine Waste..... | 12 |
| 3.3.2.2 | Eureka Mine Waste Pile..... | 13 |
| 3.3.3 | Soil | 14 |
| 3.4 | Conclusions..... | 15 |
| 3.5 | Recommendations..... | 16 |
| 3.5.1 | Mine Waste | 16 |
| 3.5.2 | Soils..... | 16 |
| 3.5.3 | Exploration Pits..... | 17 |
| 4.0 | SUMMARY | 18 |
| 5.0 | REFERENCES | 19 |

LIST OF ADDENDA

- Addendum 1 Letter to Summit County Planning, dated February 9, 2005
 Addendum 2 Email to Kristin Dean, dated July 22, 2005

LIST OF TABLES

| | |
|---------|---|
| Table 1 | Mining activity by claim block as documented by Ransome (1911, Plate II) |
| Table 2 | Acid Base Accounting for Soil Samples Collected from the Chantilly Mine and Eureka Mine Waste Piles |
| Table 3 | Chantilly Mine Pile Scep Water Sample Analytical Results |
| Table 4 | Reported Lead and Arsenic Concentrations, Soil, Exploration Pits and Mine Waste |
| Table 5 | Synthetic Precipitation Leaching Procedure Analytical Results for Samples Collected from the Chantilly Mine and the Eureka Mine Waste Piles |

LIST OF PHOTOGRAPHS

| | |
|--------------|--|
| Photograph 1 | Photograph of typical test pit (Test pit on Lot 1 – Standard Mine area) |
| Photograph 2 | Photograph of recent test pit looking southeast |
| Photograph 3 | Photograph of collapsed adit on the Iron Claim (Kellogg Mine) |
| Photograph 4 | Photograph of the collapsed shaft at the top of the Eureka mine waste pile |
| Photograph 5 | Photograph of the possible shaft below the Eureka mine waste pile |
| Photograph 6 | Photograph of the mine drainage and collapsed adit on the Wicklow Claim (Chantilly Mine) |
| Photograph 7 | Photograph of the Chantilly mine waste pile looking west |

LIST OF DRAWINGS

| | |
|-----------|------------------------------------|
| Drawing 1 | Big Sky Ranch Geologic Hazards Map |
|-----------|------------------------------------|

LIST OF APPENDICES

| | |
|------------|---|
| Appendix A | Eureka Mine Waste Pile and Chantilly Mine Waste Pile ABA, SPLP and TCLP Analytical Results from Hepworth-Pawlak Geotechnical, Inc. HPG 2003 |
| Appendix B | Chantilly Adit Drainage Water Quality and Soil and Mine Waste SPLP Analytical Report |
| Appendix C | X-Ray Fluorescence (XRF) Analysis and X-Ray Diffraction (XRD) Analytical Reports |

1.0 INTRODUCTION

This Final Report has been prepared by Golder Associates Inc. (Golder) to document a review of potential environmental and geologic hazards at the proposed Woodlands PUD Site (formerly known as Big Sky Ranch). The Draft Report was submitted on November 24, 2004. Recommendations made by Golder in the Draft were subsequently revised in a letter addressed to Ms. Kristin Dean of Summit County Planning dated February 9, 2005 and an email from Mike Bellitto (Golder) to Ms. Dean dated July 22, 2005. This Final Report consists of the original Draft Report with the letter and email attached as Addendum 1 and 2.

Golder Associates Inc. has performed a review of potential environmental and geologic hazards at the proposed 134 acre Big Sky Ranch located approximately 2 miles northeast of the Town of Breckenridge at the request of Arapahoe Architects, P.C. Golder's Scope of Work was documented in a proposal dated August 13, 2004. The property is located in a historic mining area. Active mining ceased during the 1930's and no mineral processing, milling or amalgamation took place on the property, according to Colorado Geologic Survey (CGS) records and published reports. Remnants from historic mining include shafts, adits, exploration pits, and mine waste piles. The review included the following activities:

- Review of existing studies provided by Arapahoe Architects, P.C.
- Review of CGS historic mining records
- Field reconnaissance
- Soil, mine waste, adit seepage sampling, and laboratory analyses

Golder conducted a reconnaissance level review to evaluate the potential for geologic hazards associated with the historic adits and shafts and recommended mitigation measures. Golder also collected samples of soil and mine waste to evaluate the potential the potential for environmental impacts and potential risks to human health. The following sections describe the evaluation and present recommended mitigation measures.

1.1 Objectives

This report has been prepared to provide information for Summit County Planning to evaluate the proposed Big Sky Ranch development. In a letter dated April 29, 2004, Ms. T.C. Wait, of CGS, recommended that a detailed geologic hazards evaluation be performed, "to ensure that mine sites are identified and avoided or mitigate prior to County approval." Ms. Wait also expressed concern over the potential for acidic drainage and elevated lead levels. This report provides Summit County Planning the additional information to facilitate evaluation of the proposed residential development, including:

- Characterize geologic and environmental hazards;
- Evaluate geologic and environmental hazards relative to the land development proposal; and,
- Recommend additional study and/or conceptual mitigation.

1.2 Overview of Development issues

Historic mining areas usually contain features that have the potential to complicate residential development. The main concerns are related to mine openings (adits, shafts, stopes, etc.) and mining waste. Shafts and adits pose a potential safety hazard. Shaft collars may be partially collapsed and appear stable on the surface, but voids below the surface may cause unstable conditions with the potential for a person to fall into the shaft. Likewise, abandoned adits, if the entrance is not completely collapsed may provide access to underground workings, where the potential exists for cave-ins, suffocation or being overcome by toxic gasses in poorly ventilated areas. Historic workings cause problems with foundations and roads related to subsidence as underground voids collapse and consolidate. In addition, adits that penetrate to groundwater create preferential flowpaths that can result in drainage from the adit opening. Adit drainage has the potential to be low pH and contain elevated metals.

Ore bodies are by definition mineralized zones containing certain metals in concentrations that are elevated above normal concentrations. Waste rock is often associated with historic workings. A portion of the waste rock is from the mineralized zone adjacent to the ore body and may contain elevated metal concentrations. In addition, the ore bodies may be hosted in sulfide-containing

minerals that when brought to the surface oxidize to form sulfuric acid, further increasing the mobility of metals in the waste rock.

Surface soils in historic mining areas are may contain elevated metals. The soils are often weathered from the mineralized parent material. In addition, surface soils may be contaminated by indirectly by wind-blown dust from mine wasterock or contaminated runoff. Finally, if the minerals were processed on site, surface soils may be contaminated due to spillage along haul routes or at the processing facilities.

2.0 REVIEW OF GEOLOGIC HAZARDS

Golder has completed a review of geologic hazards at the above-referenced property. On August 26 and 27, 2004, a Golder Engineering Geologist visited the site and performed a reconnaissance-level review of potential geologic hazards. The review includes a preliminary assessment of slope stability, rockfall hazard potential, unfavorable geologic conditions, delineation of mine waste and waste rock deposits, and the potential for underground openings from historic mining activities. The purpose of this review is to provide initial identification of potential geologic hazard areas or areas of special conditions within the site for planning site use and development.

During our site review, no unfavorable geologic conditions were noted. However, historic mining features on the site could pose a hazard to public safety and should be mitigated as appropriate to site use.

2.1 Site Geology, Physical Setting overview

The property is located on the top and west to south-facing sideslopes of Gibson Hill. Slopes range from less than 10 percent to about 60 percent. The steeper slopes are on the southern edge of the property where no residential development is planned. Slopes in the area proposed for residences range from 4 to 24 percent, averaging 19 percent. Gibson Gulch is on the south boundary of the property and the blue river is approximately 0.5 miles west of the western boundary of the property. The soils consist of colluvium and residuum developed from the local bedrock. Vegetation consists of lodgepole pine (*Pinus contorta*) forest with sparse understory dominated by bearberry (*Arctostaphylos uva-ursi*). The soils are mantled by a litter layer ranging from 3 to 6-inches thick.

The following description of site is from Bishop-Brogden Associates, Inc. (2004).

"The development is located in an area where Chinle Formation, Entrada Sandstone, Morrison Formation and Dakota Sandstone outcrop at the surface. These formations are sedimentary rocks consisting of sandstone, siltstone, conglomerate and shale...in this geologic environment, groundwater flow to wells occurs mostly through fractures in the bedrock formations...there is probably limited interconnectedness between the water bearing bedrock fracture, and the aerial extent of specific aquifers is probably limited.

2.1.3 Other Potential Geologic-related Hazards

A recent test pit has been left open and is poorly roped off with orange plastic fencing (Photograph 2). This hazard should be removed by backfilling.

Several mine waste piles are present within the property. These are not likely to constitute a physical hazard, but could provide an environmental hazard. They are not suitable sites for construction of site improvements without further analysis and mitigation.

Examination of the hazard map (flooding) for the Breckenridge quadrangle available at the Colorado Geologic Survey shows no flooding or avalanche hazards for the site.

2.1.4 Review of Published Historic Mine Records

The project site has been subject to previous mining activity (Ransome 1911; Lovering 1934; Lovering and Goddard 1950). Gibson Hill (Standard or Detroit-Hicks Mine) was first worked about 1890 through an inclined shaft. In 1930, two vertical shafts were sunk (Lovering and Goddard 1950). The recorded mining activity is discussed below. However, the depth of shafts and length of adits is poorly documented.

Table 1 summarizes information from the mine records pertinent to the proposed development. Examination of the U.S.G.S. Professional Paper Plate II (Ransome 1911) shows several mine shafts and adits that were not documented or observed during field observation.

Examination of the U.S.G.S. Professional Paper Plate I (Geologic Map; Ransome 1911) shows four mines on the property (Kellogg Mine, Eureka Shaft New York Mine, and Alice A. Tunnel). The Kellogg Mine is the collapsed adit on the western edge of Iron Claim (Photograph 3). The Eureka Shaft is the shaft on the Eureka Claim at the top of the waste rock pile (Photograph 4). A second depression below the Eureka Waste Rock pile is probably the other Eureka shaft (Photograph 5). The Alice A. Tunnel is the collapsed adit on the Wicklow Claim (Chantilly Mine) (Photographs 6 and 7). The New York Mine is the collapsed adit on claim New York No. 6. Plate I of Ransome also shows the Standard Mine with two shafts on the property, and one shaft and an adit outside the property near the eastern edge of the property.

Examination of the U.S.G.S. Professional Paper (Lovering 1934) shows the Detroit Mine east of Gibson Hill, off the property and east of Standard Mine (Ransome 1911) does not contain any drifts under the property (see Figure 6 in Lovering 1934). Plate 1 of Lovering (1934) shows the Owl Tunnel (off the property and to the southwest of the property) indicating it does not extend under the property.

Historic mining claims and mine inspector's reports from the Colorado State Archive Office and State of Colorado Bureau of Mines were also reviewed. The only named mines that were on file include the Standard Mine, Eureka Mine, Detroit Mine, and Owl Tunnel. The Standard mine contained no mill works and had a shaft 4 foot by 6 foot, 100 feet deep, 40 feet of raises, and 75 feet of drifts. In 1924, the Eureka Mine had a 4 foot by 8 foot shaft that was 225 feet deep and was cribbed throughout. In 1924, the Owl Tunnel was 4.5 feet by 6.5 feet, and 285 feet in length, as documented by the inspector's report. In 1928, the Detroit Mine had two vertical shafts. Number 1 shaft was 100 feet deep and contained three levels at 35, 70, and 90 feet. Number 2 shaft was 90 feet deep and contained three levels at 35 or 40, 70, and 90 feet.

2.2 Proposed Mitigation for Mine Openings

There are numerous prospect pits and several mine openings present on the site. Potentially hazardous openings should be mitigated to minimize the risks to public safety. Prospect pits can be adequately mitigated by backfilling with site soils. Often the spoil pile for the pit will be adequate for this purpose. If the pit underlies an area proposed for any kind of construction, including residences, utilities, or roads, the backfill should be compacted to a suitable specification appropriate to the proposed construction.

Mine openings (adits and shafts) should be closed to potential human entry. Each feature must be treated individually, as is most appropriate to its condition. Additional characterization and formal mitigation is recommended prior to closing any of these mine openings. Where a competent cribbed shaft and collar is present, closure can be most effective by use of a pre-cast concrete slab specifically designed for the purpose. Where the opening is mostly collapsed, backfilling with coarse granular material is recommended. Prior to backfilling collapsed features or features which are potentially open under surface cover, the feature should be sufficiently excavated to determine if the opening enlarges at depth. If so, more extensive treatment may be required. The following features observed

2.1 Findings of Site Review

2.1.1 Slope Stability and Rockfall Hazard Potential

The geologic map of the 7 ½' Breckenridge Quadrangle (Wallace and others, Preliminary 2004) shows no landslides on the property. During our site review, no features of current or recent ground movements were observed. The slopes within the site show no evidence of significant ground movement and appear stable under present conditions. On slopes greater than 20 degrees, there is only limited evidence of soil creep (as evidenced by only a very few trees with slightly curved trunks).

Potential for rock fall is minor because of thick vegetation and lack of source areas. Rock outcrops (Drawing 1) do exist on the property, but are below all the areas of proposed residential development.

2.1.2 Mine Waste Deposits and the Potential for Underground Openings from Historic Mining Activities

Drawing 1 shows the surface manifestations of historic mining activities observed during the field review. The most common type of historic mining features observed on the property are shallow prospect pits (2-9 feet deep) scattered throughout the property. Photograph 1 shows a typical prospect pit (location of photos indicated on Drawing 1).

Two collapsed shafts and seven collapsed adits were identified on the site (Table 1). Most are collapsed to the point of being closed from all entry. However, there are a few locations where these features could pose a hazard to public safety due to potentially unsafe openings and/or unstable ground. Features of this type observed during our field review are shown on Drawing 1.

Examination of previous published papers and mining records from the Colorado State Archive and the State of Colorado Bureau of Mines are discussed below. An attempt was made to correlate the observed mine surface features with the records of historic mining. Table 1 presents a listing of the mine features found in the published records, and our corresponding observations on the site. As is typical of an old mining area, there may be other features not found and not listed in existing records.

on the site are recommended for closure (list does not include prospect pits, to be closed by backfilling).

- Eureka Shaft, at the top of the waste rock pile. This shaft is collapsed to near the surface. The existing depression is approximately 6 feet deep. This opening should be closed by placing a concrete plug. The opening should be backfilled with coarse granular material to within two feet of the surface (waste rock from the Eureka Waste Rock pile may be used) and covered with a concrete plug. Alternatively, access to the shaft may be restricted by constructing a fence.
- The hole below the Eureka waste rock pile which may be the second Eureka shaft. This shaft should be backfilled with granular material or soil. This feature is approximately 100 feet below (west of) the Eureka shaft. Alternatively, access to the shaft may be restricted by constructing a fence.
- The large exploration pit on the north boundary of the Alice A claim should be backfilled.
- Seven collapsed adits (Drawing 1) were identified on the property. There is no surface access to any of the adits. No visible safety hazards are associated with the adits, with the exception of the adit above the Chantilly Waste Rock Pile. The ground surface above the adit consists of discontinuous collapsed and uncollapsed segments extending approximately 100 feet to the northeast. The uncollapsed segments should be tamped using a backhoe or excavator to remove any voids.
- The collapsed adits pose a geotechnical hazard due to settlement. Residential construction is not recommended in these areas.
- Any exploration pit located within a disturbance envelope should be backfilled with coarse granular material or soil. The backfill should be compacted to a suitable specification appropriate to the proposed construction.

3.0 ENVIRONMENTAL HAZARDS

Golder evaluated the property for potential environmental hazards. The evaluation included a review of previous sampling and testing of the mine waste piles and a field visit to identify additional mine waste and collect additional samples for chemical and geochemical analyses.

3.1 Review of Existing Geochemical Testing

Acid Base Accounting (ABA) laboratory analyses provide an estimate of the potential for mine wastes to produce acidity. ABA estimates the amount of sulfide minerals that can be oxidized to create acidity (Acid Generating Potential [AGP]) and the presence of minerals that reduce the acidity by neutralizing acidity (Acid Neutralizing Potential [ANP]). These results provide an indication of the potential for precipitation or surface water contacting the waste rock to produce low pH (acid) drainage. Acid drainage has a greater potential to solubilize metals in the waste rock and mobilize metals in runoff from the waste rock piles.

Golder reviewed analytical tests of samples collected from the Eureka Mine Waste Pile and the Chantilly Mine Waste pile by Hepworth-Pawlak Geotechnical, Inc. (HPG 2003). The Analytical reports are included as Appendix A. Based on the Acid Base Analyses (ABA), HPG reported Acid Base Potentials (ABP) for the three samples from the Chantilly Mine waste pile ranging from 383 to -8 tons $\text{CaCO}_3/\text{k ton}$ and from the Eureka Mine Waste Pile ranging from 59 to -107 tons $\text{CaCO}_3/\text{k ton}$. However, ABP was calculated using total sulfur, which includes all forms of sulfur in the mine waste. ABP calculated using total sulfur can overestimate the potential for the mine waste to create acidity, because it is only the sulfide (pyritic) sulfur and some forms of sulfate (as discussed below) that has the potential to produce acidity. Golder recalculated the ABP using pyritic sulfur. The results are presented in Table 2. The recalculated pyritic sulfur ABPs range from 392 to 1.7 tons $\text{CaCO}_3/\text{k ton}$ for the Chantilly mine Waste pile, and 101.2 to -5.6 tons $\text{CaCO}_3/\text{k ton}$.

Two approaches are commonly used to arrive at a material designation, the NNP and the ANP to AGP ratio. The NNP is defined as $\text{ANP} - \text{AGP}$ (B.C. AMD Task force 1989). The following classification is used:

- $\text{ABP} < -20 \text{ kg CaCO}_3/\text{tonne}$ potentially acid generating

- $-20 < \text{ABP} < +20 \text{ kg CaCO}_3/\text{tonne}$ uncertain
- $\text{ABP} > +20 \text{ kg CaCO}_3/\text{tonne}$ non-acid generating

An alternative, widely-applied classification scheme involves use of the ANP:AGP ratio (Price 1997):

- $\text{ANP:AGP} < 1$ likely acid generating
- $1 < \text{ANP:AGP} < 2$ possibly acid generating
- $2 < \text{ANP:AGP} < 4$ low potential for acid generation
- $\text{ANP:AGP} > 4$ non-acid generating

In the presence of very small percentages of sulfide, a third, more qualitative criterion may be applied (Price 1997):

- Sulfide (pyritic) sulfur $< 0.3 \text{ wt\%}$ and paste pH > 5.5 non-acid generating

Using the above criteria, two of the Chantilly samples are considered non-acid generating, while the third sample has a low potential to generate acid. The Eureka sample TCLP#5 is considered non-acid generating, while TCLP #4 and #6 are considered "uncertain" based on NNP and possibly acid generating and likely acid generating according to Price (1997).

3.2 Sampling

3.2.1 Mine Waste Pile Sampling

Golder collected three composite samples from each of the two known mine waste piles (Chantilly and Eureka). The samples were analyzed for pH, Synthetic Precipitation Leachability Procedure (SPLP), total metals as oxides using X-Ray Fluorescence (XRF) analysis and X-Ray Diffraction (XRD) to provide the mineralogy of the waste. XRD supplements the ABA analysis. The previous testing evaluated the potential for future acid generation. During the July 29, 2004 site visit, Golder observed unoxidized sulfides on the mine waste piles and staining indicative of sulfate salts derived from sulfide oxidation. The XRD analysis provides an estimate of the presence of sulfate salts (e.g., jarosite) that may generate additional acidity due to hydrolysis.

In addition, given the proposed residential zoning, the mine waste was evaluated for total metal content in order to compare to other mine site cleanup standards considered protective of human health.

3.2.2 Soil Sampling

Golder collected one composite sample from the upper 1 foot from 21 locations. The sample locations correspond to the proposed disturbance envelopes at the time (Drawing 1). The site plan has been revised since the August sampling event, so the sample locations do not correspond directly to the current lots. However, the samples are representative of soils in the property. The composite samples were analyzed for total metals as oxides using X-Ray Fluorescence (XRF) analysis. The results were compared to Preliminary Remediation Goals for Residential Soil established by the EPA (2001a) and remediation standards proposed for metal contaminated soils in Colorado and Utah.

There are numerous small exploration pits throughout the site (Drawing 1). Golder collected representative samples from 5 of the exploration pits to screen for metals using XRF.

3.2.3 Adit Seepage Sampling

Golder collected a sample from the flow above the Chantilly mine waste pile (Drawing 1). It appears that the flow is from a collapsed adit. The sample was analyzed for pH, Total Dissolved Solids, iron, sulfate, copper, zinc and the seven RCRA metals.

3.3 Testing Results

3.3.1 Chantilly adit drainage

The analytical results for the Chantilly Adit Drainage are presented in Table 3. The drainage is alkaline with only two metals at detectable levels (barium and zinc). Both metals are well below the applicable Federal drinking water standards. Analytical reports are presented in Appendix B.

3.3.2 Mine Waste

3.3.2.1 Chantilly Mine Waste

Three composite samples were collected from the Chantilly Waste pile (Drawing 1). Each composite sample consisted of material from the upper 1 foot of the upper, middle and lower one-third of the mine waste pile. Analytical Reports are presented in Appendices B and C. Total metal concentrations (Table 4) are elevated, but typical for mine waste and mineral enriched soil (Thornton 1996). Arsenic and lead in the mine waste exceed the EPA Generic Soil Screening Levels (SSL; EPA 2001a). The Generic SSLs apply to residential yards and gardens where there is a likelihood of direct contact and ingestion over an extended time period. There are no proposed residences within 300 feet of the Chantilly Mine Waste Pile. Therefore, direct contact and/or ingestion over an extended period are unlikely.

The mine waste samples were also analyzed using SPLP. SPLP utilizes a solution designed to simulate rainwater in the western United States to estimate the portion of the metal that could be soluble in rain water and the potential to impact water quality. The SPLP leachate results are presented in Table 5. Analytical reports are presented in Appendix B. The EPA considers leachate concentration greater than 100 times the applicable Drinking Water Maximum Contaminant Level (MCL) as toxic (40 CFR 261.24). Only two metals are reported at concentrations above the MCL: lead (0.05 mg/L, compared to the action level of 0.015 mg/L) and cadmium (0.006 mg/L, compared to the MCL of 0.005 mg/L) and no metals are near the EPA toxicity criteria.

These results were compared to results reported by HP Geotech (2003), that were analyzed using the Toxicity Characteristics leaching Procedure (TCLP, EPA method 1311; see Appendix A.) The TCLP analyses reported lead concentrations in the leachate ranging from 1.0 to 48.5 mg/l. Although the EPA Method 1311 results indicate lead concentrations in the leachate exceed RCRA limits for solid waste, it should be noted that EPA Method 1311 is designed to evaluate the behavior of waste placed in a municipal solid waste landfill where it would be subject to organic acids. EPA Method 1312 (Synthetic Precipitation Leaching Procedure, SPLP) uses a lixiviant that is representative of typical precipitation in the Western US and is more representative of the behavior of the mine waste if left in place.

XRD results are presented in Appendix C. No pyrite was identified and small amounts of jarosite and, indicating that the any sulfides in the waste rock have previously oxidized and there is little potential to generate future acidity. These results agree with the interpretation of the ABA data.

3.3.2.2 *Eureka Mine Waste Pile*

Total metal concentrations in the Eureka Mine Waste Pile are elevated (Appendix C, Table 4), but typical for mine waste and mineral enriched soil (Thornton 1996). Arsenic and lead in the mine waste exceed the EPA Generic Soil Screening Levels (SSL; EPA 2001a). The Generic SSLs apply to residential yards and gardens where there is a likelihood of direct contact and ingestion over an extended time period. There are no proposed residences within 300 feet of the Eureka Mine Waste Pile. Therefore, direct contact and/or ingestion over an extended period are unlikely.

The mine waste samples were also analyzed using SPLP. SPLP utilizes a solution designed to simulate rainwater in the western United States to estimate the portion of the metal that could be soluble in rain water and the potential to impact water quality. The SPLP leachate results are presented in Table 5. The EPA considers leachate concentration greater than 100 times the applicable Drinking Water Maximum Contaminant level (MCL) as toxic (40 CFR 261.24). Three metals are reported at concentrations above the MCL, lead, zinc and cadmium and no metals are near the EPA toxicity criteria.

These results were compared to results reported by HP Geotech (2003), that were analyzed using the Toxicity Characteristics leaching Procedure (TCLP, EPA Method 1311; see Appendix A.) The TCLP analyses reported lead concentrations in the leachate ranging from 0.12 to 35.6 mg/l. Although the EPA Method 1311 results indicate lead concentrations in the leachate exceed RCRA limits for solid waste, it should be noted that EPA Method 1311 is designed to evaluate the behavior of waste placed in a municipal solid waste landfill where it would be subject to organic acids. EPA Method 1312 (Synthetic Precipitation Leaching Procedure, SPLP) uses a lixiviant that is representative of typical precipitation in the Western US and is more representative of the behavior of the mine waste if left in place.

XRD results are presented in Appendix C. Jarosite and pyrite are identified in significant concentrations, indicating that the waste rock has a significant potential to generate additional acidity. These results agree with the interpretation of the ABA data.

5.0 REFERENCES

- EPA 2001 Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. Peer Review Draft. United States Environmental Protection Agency, Solid Waste and Emergency Response. OSWER 9355.4-24. March 2001.
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Based on visual observation, the mine waste piles are currently physically stable. During the field visit, no significant erosion (e.g., large rills or gullies) was observed from the surfaces of the mine waste piles. Any activities that disturb the mine waste piles will increase the potential to mobilize metals. As long as development activities avoid disturbing the piles, no environmental or human health impacts are expected due to residential development.

Several smaller mine waste piles are located above and below the road downhill from the Eureka Mine Waste pile (Drawing 1). Based on visual observation, the material in these piles is similar to the mine waste in the Eureka Mine Waste Pile. Golder recommends that the proposed residential location be located at least 100 feet away from the mining waste. Alternatively, appropriate mitigation should be performed to protect human health and reduce the potential to mobilize metals. This may include isolating or removing the material. These mitigation measures are discussed in the Section 3.5.

3.3.3 Soil

One composite soil sample was collected from each of the 21 proposed disturbance envelopes. Each composite sample was collected from the upper 6 inches of the mineral soil (i.e., below the litter layer). The samples were analyzed for metals using XRF. The analytical reports are included in Appendix C. Results were compared to Generic Soil Screening Levels (SSL) established by the US EPA (2001a). SSLs are not mandatory cleanup levels. SSLs are guidelines developed by EPA using EPA toxicity data and exposure pathway assumptions. If the soil concentrations fall below the Generic SSL, then no further study is required. If the soil concentrations are above the Generic SSL, then further study or mitigation is needed.

Two metals were identified at concentrations exceeding the Generic SSL. Eight of the 22 samples reported lead concentrations (Table 4) above the Generic SSL of 400 parts per million (ppm). The locations and concentrations are shown on Drawing 1. EPA has defined a Soil-lead hazard as bare soil on residential real property or on the property of a child-occupied facility that contains total lead equal to or exceeding 400 ppm in a play area or average of 1,200 ppm of bare soil in the rest of the yard based on soil samples. EPA recommends that measures to minimize contact be taken for soils with lead concentrations between 400 and 1,200 ppm. For soils exceeding 1,200 ppm, removal of the contaminated soil or installation of a permanent covering is recommended. However, in practice, all

soils exceeding 400 ppm are usually excavated. The EPA has developed a cleanup level for the Vasquez Boulevard 170 Superfund Site (VBI70) in Denver of 400 ppm (EPA 2001b).

Arsenic was reported on one sample above the Generic SSL of 0.4 ppm. The Generic SSL for arsenic was developed based on arsenic contamination associated with industrial activities. The arsenic at industrial sites is usually present as arsenite (AsO_3). While naturally occurring arsenic in mineralized soil is usually arsenate (AsO_4). Arsenite is significantly more mobile and toxic than arsenate (Opresko 1992). EPA has developed a cleanup level for the Vasquez Boulevard 170 Superfund Site (VBI70) in Denver of 70 ppm (EPA 2001b), where the arsenic is predominantly arsenate. A clean up level of 100 ppm has been established for a proposed residential development in a historic mining area in Utah (Golder 2002). The one detectable sample was reported as 51 ppm. All other samples were below the detection limit for XRF (20 ppm).

A soil sample was collected from 5 of the exploration pits. The exploration pits range from 4 feet to 9 feet deep and are likely representative of subsoil and parent material in the area. Each sample was analyzed for metals using XRF. The lab reports are included in Attachment A. Arsenic was reported in 3 of the 5 samples. Two samples exceeded the 70 ppm cleanup level established for the VBI70 Superfund Site. Lead exceeded the Generic SSL in four of the five samples (Table 4).

3.4 Conclusions

Analytical results of samples collected from mine waste piles, surface soil and subsoil indicate that lead exists throughout the property at concentrations that are considered by the EPA to be unsuitable for residential property. EPA has established two levels of soil lead that constitute a health hazard (40CFR Part 745.227): 400 ppm for bare soil in children's play area and 1,200 ppm for the rest of the yard. Four lots exceed 1,200 ppm and four lots exceed 400 ppm. Four of the exploration pit samples, which represent the subsoil, are greater than 400 ppm lead, with one sample showing concentrations similar to the mine waste in the Eureka Mine Waste Pile. These results indicate that the source of the lead is natural mineralization of the parent material and soils derived from the parent material.

Arsenic was identified in one surface soil sample at 51 ppm. This level exceeds the EPA Generic SSL of 0.4 ppm, but is below the Cleanup level established for residences at the VBI70 Superfund Site in Denver. Arsenic was detected in four of the exploration pit samples, two at levels above the

70 ppm cleanup criteria established for the VBI70 Superfund Site. These results indicate that arsenic exceeds concentrations considered protective of human health in subsoils, but not in surface soils.

Geochemical characterization of the mine waste (ABA, SPLP and XRD) indicates that the Chantilly waste pile is non-acid generating. SPLP results indicate that leachate generated by precipitation from the Chantilly waste pile is likely to be well below concentrations considered toxic by EPA and generally below MCLs for drinking water, with the exception of lead and cadmium.

The Eureka waste pile is likely acid generating. In addition, the Eureka waste pile contains detectable jarosite, a sulfate salt that can generate additional acidity in contact with water. SPLP results indicate that leachate generated by precipitation contacting the waste is below concentrations considered toxic by EPA. However, lead, cadmium and zinc are present at concentration exceeding the applicable MCLs for drinking water.

3.5 Recommendations

3.5.1 Mine Waste

Golder's sampling and testing program indicates that the lead and arsenic in the mine waste piles exceed concentration considered by EPA to be protective of human health. No residential development is proposed for the Chantilly Mine Waste Pile or the Eureka Mine Waste Pile. Golder recommends that construction footprints be located a minimum of 100 feet from all mine waste piles. If residential footprints are located closer to mine waste piles, the mine waste should be excavated along with the upper 1 foot of underlying soil.

3.5.2 Soils

The XRF results indicate that soil lead concentrations exceed concentrations considered safe for residential soils. The elevated concentrations are predominantly located in the northern part of the property. However, three samples with elevated lead are reported from the remainder of the property, indicating that elevated lead may be present in discontinuous areas throughout the property. Elevated lead in the samples collected from the exploration pits indicates that the source of lead is natural mineralization and that the lead is distributed through the soil profile. Golder recommends additional sampling to confirm this assumption. Additional samples should be collected from the six locations

within disturbance footprints where lead concentrations greater than 400 ppm were reported. Three samples should be collected from at along a vertical profile at three depth intervals (0 – 4 inches, 4 - 8 inches, and 8 – 12 inches). The samples should be tested for lead and the results evaluated to determine the vertical extent of lead contamination in the soil profile.

Prior to construction, each disturbance envelope should be sampled to determine the presence and extent of lead contamination. Additional surface samples should be collected from each disturbance footprint on a grid to determine the vertical and lateral extents of lead contaminated soil. Golder recommends that all soils with lead concentrations greater than 400 ppm be excavated or covered in place. The depth of excavation will be determined by the results of the vertical profile sampling discussed above.

If soil is excavated, it should be disposed of in an engineered facility. A managed disposal site may be developed on the property or soil can be disposed of off-site. Alternatively, if the soil is left in place, it should be covered to minimize the potential for contact. Potential cover materials include clean soil, paving or a compacted-clay barrier.

3.5.3 Exploration Pits

The XRF results indicate that material excavated from the exploration pits, may contain lead and arsenic at concentrations considered unsuitable for residential soils. Golder recommends that within the disturbance envelopes material removed from exploration pits be removed and disposed of in an engineered facility or covered to minimize the potential for contact. Potential cover materials include clean soil, paving or a compacted-clay barrier.

4.0 SUMMARY

Golder performed a geotechnical and environmental hazards evaluation of the proposed Big Sky Ranch residential development located approximately 2 miles north of Breckenridge, CO. Based on field observations, a review of published historic mining records and sampling and testing of soil and mine waste material, Golder's recommendations are summarized below.

- The Eureka shaft at top of the Eureka Mine Waste Rock Pile should be closed by excavating, backfilling and placing a concrete cap.
- The shaft below the Eureka Mine Waste Rock Pile and the large exploration pit on the Alice A claim should be closed by backfilling with coarse granular material or clean soil.
- Construction should not be performed on the surface above the seven collapsed adits shown on Drawing 1.
- The collapsed adit associated with the Chantilly Waste Rock Pile should be tamped with a backhoe to remove voids that could pose a safety hazard due to collapse.
- Additional soil sampling is recommended prior to construction to determine the presence and extent of lead contamination.
- Any soil exceeding 400 ppm lead should be excavated to a maximum depth of 1 foot and disposed in an engineered facility or isolated by placing a barrier over the soil.
- Exploration pits located within a disturbance envelope should have excavated material removed from the footprint and placed in the managed facility with the contaminated soil. The exploration pits should be backfilled with granular material or clean soil or isolated by placing a barrier over the excavation.
- Residential construction should be at least 100 feet from the Chantilly and Eureka Mine Waste piles. The smaller mine waste piles located below county Road 300 should also be avoided, if possible. If residential construction takes place near one of the smaller waste rock piles, the waste rock and underlying soil, to a depth of 1 foot, should be excavated and transported to a managed facility.

The mitigation methods recommended in this report are conceptual. Prior to implementing any mitigation formal designs should be developed.

ADDENDA

ADDENDUM 1

LETTER TO SUMMIT COUNTY PLANNING, DATED FEBRUARY 9, 2005

Golder Associates Inc.
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February 9, 2005

Our Ref.: 043-2271

Summit County Planning
PO Box 5660
Frisco, Colorado 80443

Attention: Ms. Kristin Dean

RE: THE WOODLANDS PUD SITE NEAR BRECKENRIDGE COLORADO

Dear Ms. Dean:

Golder Associates Inc. (Golder) has prepared this letter on behalf of DDMCWMLLC. at your request to document appropriate measures to manage elevated soil lead concentrations in the The Woodlands. In general, the approach will include sampling soil sampling and testing for lead, action levels and Best Management Practices (BMPs) designed to minimize the potential to contact soil lead by residents and during construction. This plan relates to naturally occurring soil lead that may be excavated during construction.

BACKGROUND

Golder sampled and tested surface soils on the property during August 2004. The results were documented in a report submitted to Summit County Planning in November 2004 (Golder 2004). Lead concentrations range from 30 mg/kg to 2,772 mg/kg, averaging 587 mg/kg. Eight samples exceed the Generic Soil Screening Level (SSL) of 400 mg/kg established by the US Environmental Protection Agency (EPA). The identified elevated lead concentrations are distributed throughout the property, although they are concentrated on the north portion of the property (5 samples) in claims Princeton, Elnora, Mathilda, Anna, Elizabeth and Barbara.

It is important to note that the SSLs are not mandatory action levels; rather they are concentrations at which EPA recommends further investigation. The SSLs are derived based on human health risk models that incorporate a conservative set of assumptions. For instance, the model assumes a bare soil surface and direct contact with the soil by a child 350 days/year (EPA 2001). EPA has established screening levels for bare residential soil: a hazard standard of 400 ppm (ppm and mg/kg are equivalent) by weight in play areas based on the play area bare soil sample and an average of 1,200 ppm in bare soil in the remainder of the yard (40 CFR Part 745).

EPA recommends that measures to minimize contact be taken for soils with lead concentrations between 400 and 1,200 ppm. For soils exceeding 1,200 ppm, removal of the contaminated soil or installation of a permanent covering is recommended. Golder performed a review of soil lead action levels developed for historic mining area remediation projects located predominantly in the western US. The results are summarized in Table 1. Action levels for residential use range from 500 to 3,500 ppm, averaging 1,041 ppm. Of particular interest is the Smuggler Mine, located in Aspen, Colorado, where an action level of 1,000 ppm was established. The EPA implemented remedy was to excavate soils exceeding 5,000 ppm lead for disposal at the local landfill. Soils with lead concentrations between 1,000 and 5,000 ppm were covered by 6 to 12 inches of soil and revegetated (EPA 2002).

Most of the action levels below 1,000 ppm are at sites where the lead contamination was anthropogenic, due to emissions from smelters. The bioavailability of lead from smelters is much

higher than naturally occurring lead, because the particles are much smaller and more easily absorbed into the body. The soil lead at the The Woodlands property is naturally occurring and expected to be similar to the Smuggler Mine. In addition, EPA Lead Sites Workgroup guidance (EPA 2003) recommends that at sites where lead is naturally occurring and not restricted to the upper 1 to 2 inches of soil, that covering is preferred to excavating.

The following sections present the proposed sampling plan, evaluation criteria and mitigation measures for development of The Woodlands. The recommendations are based on Golder's previous experience at similar sites and a review of guidance by EPA and other regulators. In particular, the following documents were reviewed:

- Lead Safe Yards, Developing and Implementing a Monitoring, Assessment and Outreach Program for Your Community (EPA 2001b)
- Superfund Lead-Contaminated Residential Sites Handbook (EPA 2003)

SAMPLING PLAN

Sample Locations

House Footprints and Access

Prior to any construction activities, the disturbance envelope soil will be sampled as follows. Samples will be collected by coring, shovel or backhoe. The soil profile at the center of the proposed foundation will be sampled by collecting a series of stratified samples to a depth equal to 1 foot below the proposed depth of excavation for the foundation. These samples will be analyzed to characterize the soil that will be excavated during construction. One sample will be collected from each 2-foot vertical interval. For example if the depth of excavation for the foundation is 10 feet, six samples will be collected (0-2, 2-4, 4-6, 6-8, 8-10 and 10-12 feet). In addition, representative samples will be collected from the access road right-of-way.

Yards and Landscaped Areas

Four additional representative locations will be sampled to characterize the surface soils within the residential use area (i.e., the landscaped lawn). The sample points will be collected from the mid-point between the edge of the foundation and the edge of the disturbance envelope in each of the four cardinal directions. Samples will be collected from the mineral soil layer (e.g., below the litter layer). Samples will be collected from five depth intervals:

- 0 - 1 inch;
- 1 - 6 inches;
- 6 -12 inches;
- 12 - 18 inches; and
- 18 - 24 inches.

Sample Collection and Handling

Samples will be collected in accordance with ASTM method E-1727-04 (Standard Practice for Field Collection of Soil Samples for Subsequent Lead Determination). The samples will be stored at 4°C

and protected from direct sunlight. Duplicate samples will be collected for 10 percent of the samples, with at least one duplicate sampled collected per lot.

Samples can be analyzed by either X-Ray Fluorescence (XRF) or acid-digestion followed by ICP-AES (EPA Method 3050B or 3051 and 6010B). All samples will be screened through a #60 sieve (250 micron, ASTM E-11) prior to analysis.

ACTION LEVELS

Action levels are based on the EPA Guidelines established in 40 CFR Part 745 and the EPA Lead Sites Workgroup (EPA 2003). The no-action level is 400mg/kg. If a sample exceeds 400 mg/kg, four additional points will be sampled at a distance of 10 feet from the initial sample point. If the additional samples exceed 400 mg/kg, sampling will continue at 10 foot intervals until a sample less than 400 mg/kg is collected or the boundary of the landscaping is reached. The results will be used to delineate the extent of lead-contaminated soils.

All areas with soil lead concentrations between 400 mg/kg and 1,200 mg/kg will be classified as "elevated". Soil lead concentrations exceeding 1,200 mg/kg will be classified as "moderately high".

MITIGATION

Common mitigation measures include avoidance, barriers or excavation. DDMCWMLLC has already incorporated avoidance into the plan by revising building locations to avoid previously identified areas of elevated soil lead. EPA recommends that property owners and other decision makers should implement effective measures to reduce or prevent children's exposure to lead in soil that exceeds these levels. These measures may incorporate, but are not limited to, interim controls that include covering bare soil and placement of washable doormats in entryways. EPA recommends that mitigation methods could include modest actions, such as planting grass (or other ground cover) to more extensive actions such as covering the bare soil with several inches of clean fill (EPA 2001a).

Excavation – House footprint and Access

Much of the soil that is excavated will be reused as fill. For instance, excavated material from below the foundation will remain for use as fill, or cut material for access roads and driveways that will be used as fill below a paved driveway. This amounts to placement of a permanent cover. All other soil exceeding 400 ppm lead that is excavated during construction will be managed to minimize the potential for direct contact. Two options will be available:

- The soil will remain on the property and be covered by a minimum of 1 foot of clean soil and revegetated or a permanent barrier, such as concrete or asphalt.
- The soil will be removed and hauled to an approved municipal landfill for disposal.

Where possible, the first option (covering with clean soil) is preferred. As stated previously, lead is relatively immobile in soils. In addition, the larger particle sizes in naturally occurring soil are too large to be absorbed in the human body, significantly reducing the bioavailability when compared to anthropogenic lead from such sources as smelters. Loading and hauling soil offsite will result in crushing of particles, reducing the size and increasing the bioavailability. In addition, hauling will increase the potential to expose off-site populations.

In some cases, such as when excavation volumes are too large to store on the property, it may be necessary to dispose of soil off-site. One possible disposal site is the Summit County Landfill. Soil

proposed to be disposed of offsite will be tested using EPA Method 1311 (Toxicity Characteristics Leaching Procedure) to determine appropriate disposal options.

Surface Soils – Yards and Landscaped Areas

Mitigation of surface soils within the disturbance footprint is based on EPA recommendations (40 CFR Part 745 and Lead Sites Work Group [EPA 2003]). Soils classified as elevated (lead concentrations between 400 ppm and 1,200 ppm) will not be used as children's play areas or gardens, unless the area is covered to minimize potential for contact using one of the following methods:

- Install raised-bed garden and supplement with clean topsoil.
- Install wood-framed raised play and picnic area filled with woodchips.
- Install path of walking stones for high-traffic areas.
- Seed and fertilize grassy areas, or cover with mulch or woodchips if not suitable for grass.

Areas within the disturbance footprint with soil lead concentrations exceeding 1,200 ppm will be treated as follows:

- Areas may not be used for children's play area, picnic area or gardening.
- Soils will be covered with a minimum of 1 foot of clean soil and revegetated.
- A visible barrier will be placed at the boundary between the contaminated soil and clean fill. Examples of suitable barriers/markers include snow fencing (usually orange), a clean, crushed limestone layer, and geofabric.

Protection of Workers During Construction

OSHA regulation 1926.62 (29CFR part 1926.62), the "lead in construction standard," applies to all private sector workers, no matter how few are employed. The regulation requires a written description of the work to be done, an estimate of the anticipated exposure to lead, and a statement detailing the precautions to be taken. If the anticipated exposure to lead reaches the "action level"—30 micrograms per cubic centimeter of air, averaged over an 8-hour day—extensive guidelines come into play to protect workers. Prior to construction an assessment will be performed to determine whether exposure levels are expected to exceed the action level. Regardless, the following actions will be implemented during construction to limit exposure of workers to lead.

- Prior to activities which will disturb soil, the ground will be dampened to minimize the dust that may be generated.
- Leather or comparable work gloves will be worn to cut down on hand contamination.
- Workers will not eat, drink, or smoke in the work area.

Workers will be provided with safety training prior to construction activities. In addition to the workplace precautions listed above, workers will be advised to:

- Wash their face and hands as soon as possible after leaving the site and before eating, drinking or smoking.

- Remove their boots or shoes at the door of their home to keep from tracking in contaminated soil.
- Wash their work clothing separately from their other clothing.

CONCLUSION

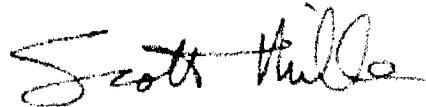
Golder has developed the sampling, testing and mitigation methods proposed herein based on available analysis of soil lead concentrations in the project area, a review of Federal Regulations and Guidance for lead contaminated soils and a review of clean up criteria and mitigation activities at similar sites in the western US. It should be noted that there are no statutory limits for these sites. However, the guidelines proposed in this report generally conform to EPA Guidance (EPA 2003) and are considered to be protective of human health.

Sincerely,

GOLDER ASSOCIATES INC.



Michael W. Bellitto
Senior Project Scientist



Scott Miller P.G.
Associate

MWB/FEH/ljd

cc: Bobby Craig, Arapahoe Architects P.C.
Danny Middleton, DDMCWMLLC

REFERENCES

- U.S. Environmental Protection Agency (EPA). 2001 Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. Peer Review Draft. United States Environmental Protection Agency, Solid Waste and Emergency Response. OSWER 9355.4-24. March 2001.
- EPA. 2001a. Lead; Identification of Dangerous Levels of Lead; Final Rule. FR Vol. 66 No. 4. January 5. Available online : http://www.epa.gov/lead/403_final.pdf.
- EPA. 2001b. Lead Safe Yards, Developing and Implementing a Monitoring, Assessment and Outreach Program for Your Community. EPA/625/R-00/012 January 2001.
- EPA. 2002. Five-Year Review Report. Second Five-Year Review Report for Smuggler Mountain Superfund Site. Pitkin County, Colorado. September 2002. Prepared By: Region VIII United States Environmental Protection Agency. Denver, Colorado.
- EPA 2003. Superfund Lead-Contaminated Residential Sites Handbook. Office of Emergency and Remedial Response. OSWER 9285.7-50. August 2003.

TABLE 1

LEAD CLEANUP GOALS AT RESIDENTIAL SITES

| Site | Contaminant | Cleanup Level | Regulatory Agency |
|---|--------------------|----------------------|--|
| Bartlesville, OK (National Zinc Co. NPL Site) | Lead | 925 mg/kg | Oklahoma DEQ |
| Park City, UT (Flagstaff Cornfort Letter) | Lead | 500 mg/kg | U.S. EPA Region VIII |
| Butte, MT | Lead | 1,200 mg/kg | U.S. EPA Region VIII |
| Coeur d'Alene Basin, ID | Lead | 1,000mg/kg | U.S. EPA, Region X |
| Coppertown, UT (Kennecott - South Zone) | Lead | 1,100 mg/kg | U.S. EPA |
| Denver, CO (Vasquez Blvd./I-70 Site) | Lead | 540 mg/kg | U.S. EPA Region VIII |
| Jasper County, MS | Lead | 800 mg/kg | U.S. EPA Region VII |
| Kellogg, ID (Bunker Hill Superfund Site) | Lead | 1,000 mg/kg | U.S. EPA, Region X |
| Leadville, CO | Lead | 3,500 mg/kg | County Health Dept utilizing community protection measures |
| Murray City, UT (Murray Smelter) | Lead | 1,200 mg/kg | U.S. EPA Region VIII |
| Palmerton, PA | Lead | 650 mg/kg | U.S. EPA Region III |
| Ruston/North Tacoma, WA | Lead | 500 mg/kg | U.S. EPA Region X |
| Aspen, CO | Lead | 1,000 mg/kg | U.S. EPA, Region VIII |
| Sandy, UT | Lead | 1,200 mg/kg | U.S. EPA, Region VIII |
| Winslow Township, NJ (King of Prussia Technical Corporation Superfund Site) | Lead | 500 mg/kg | U.S. EPA Region II |

ADDENDUM 2

EMAIL TO KRISTIN DEAN, DATED JULY 22, 2005

Bellitto, Mike

From: Bellitto, Mike
Sent: Friday, July 22, 2005 2:52 PM
To: 'kristinD@co.summit.co.us'
Cc: Miller, Scott; araparch@colorado.net
Subject: BIG SKY RANCH

Dear Kristin,

Golder Associates Inc. has prepared this email response to a request by Arapahoe Architects P.A. for Golder's recommendation concerning the wording of two statements in the PUD for the Woodlands. The statements are repeated below followed by Golder's recommendations.

PUD Statement

1. " Exploration pits located within a disturbance envelope should have excavated material removed from the footprint and placed in the managed facility with the contaminated soil. The exploration pits should be backfilled with granular material or clean soil or isolated by placing a barrier over the excavation."

Golder recommendation:

Golder originally recommended in the Draft Report on Environmental and Geologic Hazards for the Big Sky Ranch (November 2004) that:

- Exploration pits located within a disturbance envelope should have excavated, material removed from the footprint and placed in the managed facility with the contaminated soil. The exploration pits should be backfilled with granular material or clean soil or isolated by placing a barrier over the excavation.

However, we revised our recommendations for handling contaminated materials in the letter to Summit County Planning, dated February 9, 2005. As stated in the letter, Golder reviewed revised guidelines presented by EPA and mitigation measures implemented at other lead contaminated sites, such as the Smuggler Mine, located in Aspen, Colorado. Based on the review, we determined that the preferred mitigation is to cover the material with 1 foot of clean soil. Removing the material to a managed landfill is not preferred because excavating and handling has the potential to increase bioavailability of the metals. In addition, hauling will increase the potential to expose off-site populations.

Therefore, Golder recommends that a sample from the material excavated from the exploration pits be tested for lead. If concentrations exceed 400 ppm, the mitigation measures should be the same as recommended for soil:

- The excavated material will remain on the property, be placed back in the pit and be covered by a minimum of 1 foot of clean soil and revegetated or a permanent barrier, such as concrete or asphalt; or,
- The soil will be removed and hauled to an approved municipal landfill for disposal.

For the reasons stated above, covering is preferred. As recommended in our February 2005 letter, if

10/4/2005

material has to be removed from the site, it should be tested using EPA Method 1311 (Toxicity Characteristics Leaching Procedure) to determine appropriate disposal options. If the results are below EPA Toxicity Criteria listed in 40CFR Part 261.24, the material can be disposed of in a municipal solid waste landfill.

PUD Statement

2. "Yards: Four additional representative locations will be sampled to characterize the surface soils within the residential use area. The sample points will be collected from the midpoint between the edge of the foundation and the edge of the disturbance envelope in each of the four cardinal directions."

The intent of the sampling plan is to representatively sample the area that is most likely to be subject to direct human contact. If the foundation is located near to the disturbance boundary, the area between the foundation and disturbance envelope boundary may not be representative of the larger area more likely to be contacted by humans.

Therefore, Golder recommends that if the foundation is within 10 feet of the disturbance envelope boundary, no sample be collected from that side. Two samples should be collected from the opposite side of the house at spacing that provides representative samples from the residential use area. The important point is that four samples are collected that adequately characterize the soil in the proposed residential use area (i.e., the landscaped lawn).

If you have any other question, please do not hesitate to contact me.

Regards, Mike

Michael W. Bellitto
Restoration Ecologist

Golder Associates Inc.
44 Union Blvd., STE 300
Lakewood, CO 80228

Phone 303-980-0540
Fax 303-985-2080
Direct 720-920-4589

TABLES

TABLE 1
MINING ACTIVITY BY CLAIM BLOCK AS DOCUMENTED BY RANSOME
(1911, SEE PLATE II)

| Claim Block | Ransome (1911) Mining Activity | Field Observation |
|--------------------|--|---|
| Anna 2974 | Map shows adit in NE corner of claim | Observed a trench in the approximate location of adit, which may be collapsed adit. No surface opening was observed. |
| Princeton 2971 | Map shows two adits (one above and one below the 10,000 ft elevation contour) | This is the approximate location of the depression (el. 9994.8) off the road, which may be the collapsed adit. No surface opening was observed. Second adit not observed. |
| Stark 2969 | Map shows adit above 10,050 ft contour | Nothing observed. |
| Paris 2969 | Map shows adit on the eastern edge of claim | Trench observed in the claim just east of Paris 2969 claim may be collapsed adit. No surface opening was observed. |
| Eureka 2336 | Map shows two vertical shafts at eastern edge of claim (and two shafts and an adit just east of claim, off the property) and two vertical shafts (one above and below the 10,250 ft contour) | Two pits were observed in the approximate vicinity of the two vertical shafts at the eastern edge of the claim. There was no evidence that the pits are the vertical shafts. The shaft above the 10,250 ft contour is probably the Eureka Mine shaft at the top of the waste rock pile. The shaft below the 10,250 ft contour is probably represented by the hole observed below the waste rock pile. |
| Naperville 2965 | Map shows two shafts and an adit on western edge of claim (just above the road) | A possible pit was observed at location of shaft at 10,250 ft contour. There was no evidence that the pit is the vertical shaft. The collapsed adit was observed above (east of) County Road 300. No adit opening was observed. The second shaft was not observed. |
| Blue River 2966 | Map shows one adit in the north central part of claim | Not observed |
| Iron 4343 | Map shows an adit on western edge of claim above road | Collapsed adit observed just above road. No adit opening was observed. |
| Alice A 8352A | Map shows an adit just below road (west central part of claim) | Trench (adjacent to road covered with tree debris) was observed at approximate location of adit, believed to be the collapsed adit. No adit opening was observed. A large exploration pit (approximately 12 feet deep) on the north side of County road is likely a slope that connected to the adit. |
| Franklin 9591 | Map shows two shafts at western edge of claim | Only one pit observed, at approximate location of a shaft. There was no evidence that the pit is the vertical shaft. |
| Wicklow 8352A | Map shows one adit at bend in claim | Collapsed adit observed with seepage directly above the Chantilly Waste rock pile. No adit opening was observed. |
| Chantilly 8352A | Map shows one building | No building observed. |
| New York No. 1 | Map shows an adit in the central part of claim | Exploration pits observed in the approximate vicinity of adit. Adit was not observed. |
| New York No. 4 | Map shows one shaft at northern edge of claim (just south of Roslyn 8352A) | Pit observed in the approximate vicinity of shaft (that is the approximate location of yellow tape around pit. The shaft was not observed. |
| New York No. 6 | Map shows one adit at southern end of claim | Waste rock pile documented just across the claim boundary in New York No. 5. Adit not observed. |
| New York No. 9 | Map shows one adit at southern edge of claim above road | Nothing observed. |
| New York No. 2 | Map shows two adit in central part of claim (just below road) | Two pits observed that may reflect adit locations. No adit opening was observed. |

TABLE 2
ACID BASE ACCOUNTING FOR SOIL SAMPLES COLLECTED FROM THE CHANTILLY MINE AND EUREKA MINE WASTE PILES

| Sample ID | Total S % | Sulfate S % | Residual S % | Pyritic S % | AGP t CACO ₃ /td | ANP t CACO ₃ /td | NNP t CACO ₃ /td | ANP:AGP | Class (Price 1997) | Class (BC 1989) |
|-------------------|--------------|----------------|-----------------|----------------|--------------------------------|--------------------------------|--------------------------------|---------|-----------------------|--------------------|
| Chantilly TCLP #1 | 1.49 | 0.52 | 0.59 | 0.38 | 11.9 | 44 | 32.1 | 3.7 | Low | NAG |
| Chantilly TCLP #2 | 0.33 | <0.01 | 0.33 | <0.01 | 0.3 | 392 | 391.7 | 1254.4 | NAG | NAG |
| Chantilly TCLP #3 | 0.33 | 0.01 | 0.31 | 0.01 | 0.3 | 2 | 1.7 | 6.4 | NAG | Uncertain |
| Eureka TCLP #4 | 4.39 | 3.03 | 0.75 | 0.61 | 19.1 | 30 | 10.9 | 1.6 | Possibly AG | Uncertain |
| Eureka TCLP #5 | 1.77 | 1.18 | 0.18 | 0.41 | 12.8 | 114 | 101.2 | 8.9 | NAG | NAG |
| Eureka TCLP #6 | 2.46 | 1.18 | 1.1 | 0.18 | 5.6 | <1 | -5.6 | 0.2 | Likely AG | PAG |

Notes:

All Sulfur and ANP results are from HP Geotech (2003).

AGP, NNP and ANP:AGP were recalculated using Pyritic S.

TCLP - toxicity characteristic leaching procedure

S - sulfur

AGP - acid generating potential

ANP - acid neutralizing potential

NNP - net neutralization potential

NAG - non acid generating

AG - acid generating

PAG - potentially acid generating

BOLD - less than 0.3% pyrite

**TABLE 3
CHANTILLY MINE PILE SEEP WATER SAMPLE ANALYTICAL RESULTS**

| Analyte | MDL ¹ | PQL ² | Concentration | Qualifier ³ | MCL ⁴ | Units |
|---|------------------|------------------|---------------|------------------------|------------------|----------|
| Arsenic, dissolved | 0.04 | 0.2 | | U | 0.05 | mg/L |
| Barium, dissolved | 0.003 | 0.01 | 0.055 | | 2 | mg/L |
| Cadmium, dissolved | 0.005 | 0.02 | | U | 0.005 | mg/L |
| Chromium, dissolved | 0.01 | 0.05 | | U | 0.1 | mg/L |
| Copper, dissolved ⁵ | 0.01 | 0.05 | | U | 1.3 | mg/L |
| Lead, dissolved ⁵ | 0.04 | 0.2 | | U | 0.015 | mg/L |
| Mercury, dissolved | 0.0002 | 0.001 | | U | 0.002 | mg/L |
| Selenium, dissolved | 0.04 | 0.2 | | U | 0.05 | mg/L |
| Silver, dissolved ⁶ | 0.005 | 0.03 | | U | 0.1 | mg/L |
| Zinc, dissolved ⁶ | 0.01 | 0.05 | 0.13 | | 5 | mg/L |
| Conductivity @25C | 1 | 10 | 262 | | NA | umhos/cm |
| pH (lab) ⁶ | 0.1 | 0.1 | 7.9 | H | 6.5 - 8.5 | units |
| Residue, Filterable (TDS) @180 ⁶ | 10 | 20 | 140 | | 500 | mg/L |

Notes:

Water sample was collected on August 27, 2004.

1 - MDL - method detection limit

2 - PQL - practical quantitation limit

3 - Definition of qualifiers:

U - Analyte was analyzed for but not detected at the MDL

H - Analysis exceeded method hold time. A pH test is a field test with an immediate hold time.

4 - MCL - Drinking Water Maximum Contaminant Level (5 CCR 1003-1)

5 - There are no MCLs for lead or copper. The concentrations are action levels measured at the consumer's tap.

6 - Secondary MCL

**TABLE 4
REPORTED LEAD AND ARSENIC CONCENTRATIONS
SOIL, EXPLORATION PITS AND MINE WASTE SAMPLES**

| Sample ID | Reported Lead Concentration (ppm) | Reported Arsenic Concentration (ppm) |
|------------------|--|---|
| L1 | 215 | <20 |
| L2 | 162 | <20 |
| L3 | 195 | <20 |
| L4 | 78 | <20 |
| L5 | 1,077 | 51 |
| L6 | 198 | <20 |
| L7 | 1,303 | <20 |
| L8 | 266 | <20 |
| L9 | 990 | <20 |
| L10 | 164 | <20 |
| L11 | 244 | <20 |
| L12 | 385 | <20 |
| L13 | 2,772 | <20 |
| L14 | 1,060 | <20 |
| L15 | 626 | <20 |
| L16 | 690 | <20 |
| L17 | 1,367 | <20 |
| L18 | 227 | <20 |
| L19 | 226 | <20 |
| L21 | 46 | <20 |
| L22 | 30 | <20 |
| EP1 | 851 | <20 |
| EP2 | 306 | 24 |
| EP3 | 642 | 175 |
| EP4 | 915 | <20 |
| EP7 | 10,327 | 83 |
| CH1 | 4,008 | 70 |
| CH2 | 12,439 | 253 |
| CH3 | 7,370 | 125 |
| E1 | 30,900 | 170 |
| E2 | 11,110 | 306 |
| E3 | 11,227 | 78 |

Notes:

Analysis performed by Mineral Lab, Inc.

L - Lot

EP - Exploration Pit

CH - Chantilly Mine Waste Pile

E - Eureka Mine Waste Pile

TABLE 5
 SYNTHETIC PRECIPITATION LEACHING PROCEDURE ANALYTICAL RESULTS
 FOR SAMPLES COLLECTED FROM THE CHANTILLY MINE AND THE EUREKA MINE WASTE PILES

| Analyte | Units | MDL | PQL | CHI | | CH2 | | CH3 | | E1 | | E2 | | E3 | |
|---------------------|-------|--------|-------|--------|-----------|--------|-----------|--------|-----------|--------|-----------|--------|-----------|--------|-----------|
| | | | | Result | Qualifier |
| Arsenic (1312) | mg/L | 0.04 | 0.2 | | U | | U | | U | | U | | U | | U |
| Barium (1312) | mg/L | 0.003 | 0.01 | 0.029 | | 0.036 | | 0.021 | | | | | | | |
| Cadmium (1312) | mg/L | 0.005 | 0.02 | 0.006 | B | | U | | U | 0.06 | | 0.079 | | 0.047 | |
| Chromium (1312) | mg/L | 0.01 | 0.05 | | U | | U | | U | 0.01 | B | | U | | U |
| Copper (1312) | mg/L | 0.01 | 0.05 | | U | | U | | U | 0.08 | | 0.07 | | | U |
| Lead (1312) | mg/L | 0.04 | 0.2 | | U | | U | 0.05 | B | 2.81 | | 2.76 | | 1.49 | |
| Mercury (1312) | mg/L | 0.0002 | 0.001 | | U | | U | | U | | U | 0.001 | | | U |
| Selenium (1312) | mg/L | 0.04 | 0.2 | | U | 0.04 | B | | U | 0.04 | B | | U | | U |
| Silver (1312) | mg/L | 0.005 | 0.03 | | U | | U | | U | 0.009 | B | 0.007 | B | | U |
| Zinc (1312) | mg/L | 0.01 | 0.05 | 0.11 | | | U | 0.02 | B | 13.5 | | 15.3 | | 18.4 | |
| pH, Saturated Paste | units | 0.1 | 0.1 | 6.9 | | 7.3 | | 7.3 | | 1.9 | | 1.9 | | 3 | |

Notes:

Soil samples collected on August 27, 2004.

Synthetic Precipitation Leach Procedure (USEPA Method M1312).

MDL - method detection limit

PQL - practical quantitation limit

Definition of qualifiers:

U - Analyte was analyzed for but not detected at the MDL.

B - Analyte concentration detected at a value between MDL and PQL.

H - Analysis exceeded method hold time. A pH test is a field test with an immediate hold time.

PHOTOGRAPHS

PHOTOGRAPH 1
PHOTOGRAPH OF TYPICAL
TEST PIT (TEST PIT ON LOT 1
- STANDARD MINE AREA)



PHOTOGRAPH 2
PHOTOGRAPH OF RECENT
TEST PIT LOOKING
SOUTHEAST



PHOTOGRAPH 3
PHOTOGRAPH OF
COLLAPSED ADIT ON THE
IRON CLAIM (KELLOGG
MINE)



PHOTOGRAPH 4

**PHOTOGRAPH OF THE
COLLAPSED SHAFT AT THE
TOP OF THE EUREKA MINE
WASTE PILE**



PHOTOGRAPH 5

**PHOTOGRAPH OF THE
POSSIBLE SHAFT BELOW
THE EUREKA MINE WASTE
PILE**



PHOTOGRAPH 6

**PHOTOGRAPH OF THE MINE
DRAINAGE AND COLLAPSED
ADIT ON THE WICKLOW
CLAIM (CHANTILLY MINE)**



PHOTOGRAPH 7
PHOTOGRAPH OF THE
CHANTILLY MINE WASTE
PILE LOOKING WEST



DRAWINGS

APPENDIX A

**EUREKA MINE WASTE PILE AND CHANTILLY MINE WASTE PILE ABA, SPLP
AND TCLP ANALYTICAL RESULTS FROM HEPWORTH-PAWLAK
GEOTECHNICAL, INC. HPG 2003**

**HP
Geotech**
HEPWORTH-PAWLAK GEOTECHNICAL

Hepworth-Pawlak Geotechnical, Inc.
P. O. Drawer 1887
Silverthorne, Colorado 80498
Phone: 970-468-1989

Fax: 970-468-5891
email: hpgeo4@hpgeotech.com

November 18, 2003

Danny Middleton
4602 Frontier Drive
Houston, Texas 77041

Job No. 403 174

Subject: Suspected Mine Waste Piles Sampling, Chantilly MS 8352A and Eureka MS 2336, Summit County, Colorado.

Dear Mr. Middleton:

Hepworth-Pawlak Geotechnical, Inc. (HP-Geotech) has completed our due diligence sampling and laboratory testing at the subject site. The sampling was conducted to achieve an understanding of the potential environmental issues associated with the suspected mine waste piles identified by you on our May 29, 2003 site visit. The goals of the proposed due diligence sampling were to determine if: 1) the piles are classified as a hazardous waste using the toxicity characteristic leaching procedure (TCLP); 2) if there is an indication of whether acid mine drainage could occur from the piles; and, 3) if elevated levels of heavy metals may have migrated to the near-surface soils downhill of the piles. The sampling and laboratory testing was conducted in accordance with our proposal to you dated May 29, 2003. This report summarizes the work performed, observations made, and analytical laboratory test results.

Project Background: The subject site, shown on Figure 1, is located on Gibson Hill and has been extensively mined. We observed mine features that appear to be adits, shafts, and prospector pits. The suspected mine waste pile on the Eureka mining claim appears to have come from a nearby shaft. The possible shaft is partially caved with visible timbers. The suspected mine waste pile on the Chantilly mining claim appears to have come from a nearby adit. The area of the underground working is characterized by a linear depression at the ground surface which is likely the collapsed entrance to the mine. A small stream emanates from the possible adit. Based on the mining history in the area, it is likely that the objective of the underground workings was to mine gold and silver bearing ore. It was common at these mine sites to have a stamp mill onsite to crush the ore. In addition, extraction of the precious metals may have occurred onsite using amalgamation, although at the time of our site visits on May 29 and June 5, 2003 such extraction equipment was not observed.

Glenwood Springs 970-945-7988 • Parker 303-841-7119 • Colorado Springs 719-633-5562

Danny Middleton
November 18, 2003
Page 2

Soil Sampling Program: To determine if the piles constitute a hazardous waste under the Resource Conservation Recovery Act (RCRA), we sampled the piles to determine what RCRA hazardous metals (i.e., Pb, As, Cd, Cr, Ag, Hg, Ba, and Se) may exist. In addition, analytical tests to determine if Zn and Cu are present were performed since these metals are associated with these types of mines and can be harmful at toxic levels. A schematic of the Chantilly and Eureka mine spoil piles and sampling locations are presented on Figures 2 and 3, respectively.

Three samples from each pile were obtained for analytical testing. The samples were collected from 0.5 to 2 feet below the pile surface. Each sample was subjected to EPA SW-846, Method 1311(TCLP) testing to determine if any of the eight RCRA hazardous waste metals and Cu and Zn exist. To get a general indication of whether the heavy metals could be mobilized, the acid generation potential of the piles was evaluated. Acid base accounting (ABA) was performed on the samples. ABA results will give an indication of whether acid mine drainage could occur.

To determine a heavy metal baseline and whether elevated levels of metals may have migrated downhill from the piles, additional sampling was performed above the piles, in the piles and below the piles. Sampling was performed in a transect and samples were taken from 6 to 12 inches below the ground surface. Each transect sample was subjected to EPA SW-846, Method 1312 (SPLP-synthetic precipitation leachate procedure) testing to determine if Pb, As, Cd, Cu, Cr, Ag, Hg, Ba, Se and Zn are present.

Prior to sampling the soil, all necessary equipment was decontaminated. The samples were placed in designated sampling bags, sealed, placed in a container, and transported to ACZ Laboratories, Inc. under chain-of-custody procedures.

Analytical Laboratory Test Results for Chantilly MS 8352A: The results of the TCLP analytical testing performed at ACZ Laboratories, Inc. were compared with the RCRA maximum contaminant concentrations criteria presented on Table I. Soil

Danny Middleton
November 18, 2003
Page 3

samples TCLP #1, TCLP #2, and TCLP #3 indicate that seven of the metals (i.e., As, Cd, Cr, Ag, Hg, Ba, and Se) had concentrations below the RCRA maximum contaminant concentrations criteria. In addition, sample TCLP #2 had a Pb concentration that did not exceed the RCRA maximum contaminant concentration criteria of 5.0 mg/L for Pb. However, samples TCLP #1 and TCLP #3 had Pb concentrations of 23.5 and 48.5 mg/L, respectively, which exceeds the RCRA maximum concentration criteria for Pb.

Results of the TCLP analytical testing indicate that samples TCLP #1, TCLP #2, and TCLP #3 had Cu and Zn concentrations below or within typical concentration ranges of these metals in normal or uncontaminated soils. Generally, Cu concentrations of 2 to 100 mg/L and Zn concentrations of 10 to 300 mg/L are considered normal in uncontaminated soils.

Results of ABA testing performed on samples TCLP #1, TCLP #2, and TCLP #3 indicate an acid-base potential (ABP) ranging from 382 to -8 t CaCO_3/Kt . Generally, if the ABP is negative, leachate is likely to be acidic.

The results of the SPLP analytical testing performed on soil samples Transect #1, Transect #2, and Transect #3 were compared with each other to see if metal concentrations for Cu, Zn, Pb, As, Cd, Cr, Ag, Hg, Ba, and Se varied depending on sample location. It was assumed that sample Transect #3 obtained from above the pile had not been contaminated by the pile and would serve as a metal baseline sample. To determine whether elevated levels of metals may have migrated to the near-surface soils downhill from the pile, the results of the analytical testing performed on sample Transect #3 was compared with sample Transect #2 obtained in the pile and sample Transect #1 obtained from below the pile. Laboratory test results indicate the metal concentrations in samples Transect #1 and Transect #3 were generally within an order of magnitude with sample Transect #3 having slightly higher concentrations, except for Pb. Based on the test results, it appears that no significant Cu, Zn, Pb, As, Cd, Cr,

Danny Middleton
November 18, 2003
Page 4

Ag, Hg, Ba, and Se migration has occurred from the pile to the near-surface soils downhill of the pile.

A copy of the analytical laboratory test results are included in the Attachments.

Analytical Laboratory Test Results for Eureka MS 2336: The results of the TCLP analytical testing performed at ACZ Laboratories, Inc. were compared with the RCRA maximum contaminant concentrations criteria presented on Table 1. Soil samples TCLP #4, TCLP #5, and TCLP #6 indicate that seven of the metals (i.e., As, Cd, Cr, Ag, Hg, Ba, and Se) had concentrations below the RCRA maximum contaminant concentrations criteria. In addition, sample TCLP #5 had a Pb concentration that did not exceed the RCRA maximum contaminant concentration criteria of 5.0 mg/L for Pb. However, samples TCLP #4 and TCLP #6 had Pb concentrations of 16.1 and 35.6 mg/L, respectively, which exceeds the RCRA maximum concentration criteria for Pb.

Results of the TCLP analytical testing indicate that samples TCLP #4, TCLP #5 and TCLP #6 had Cu and Zn concentrations below or within typical concentration ranges of these metals in normal or uncontaminated soils. Generally, Cu concentrations of 2 to 100 mg/L and Zn concentrations of 10 to 300 mg/L are considered normal in uncontaminated soils.

Results of ABA testing performed on samples TCLP #4, TCLP #5, and TCLP #6 indicate an acid-base potential (ABP) ranging from 59 to -107 t CaCO₃/Kt. Generally, if the ABP is negative, leachate is likely to be acidic.

The results of the SPLP analytical testing performed on soil samples Transect #4, Transect #5, and Transect #6 were compared with each other to see if metal concentrations for Cu, Zn, Pb, As, Cd, Cr, Ag, Hg, Ba, and Se varied depending on sample location. It was assumed that sample Transect #6 obtained from above the pile had not been contaminated by the pile and would serve as a metal baseline sample. To determine whether elevated levels of metals may have migrated to the near-surface soils

Danny Middleton
November 18, 2003
Page 5

downhill from the pile, the results of the analytical testing performed on sample Transect #6 was compared with sample Transect #5 obtained in the pile and sample Transect #4 obtained from below the pile. Laboratory test results indicate the metal concentrations in samples Transect #4 and Transect #6 were generally within an order of magnitude with sample Transect #4 having slightly higher concentrations. Based on the test results, it appears that no significant Cu, Zn, Pb, As, Cd, Cr, Ag, Hg, Ba, and Se migration has occurred from the pile to the near-surface soils downhill of the pile.

A copy of the analytical laboratory test results are included in the Attachments.

Conclusions: The above test results can be used to make general conclusions regarding mine spoil pile geochemical characteristics and contaminant or potential containment migration given current site conditions. The pile and baseline sampling and testing program described above will not determine the exact extent and magnitude of contaminant or potential contaminant migration from the piles. Additional studies would be necessary to determine effects of the piles on soils and water quality as it exists today as well as upon excavation or other disturbances.

Based on the TCLP analytical test results, Pb concentrations exceed the RCRA maximum contaminant concentration criteria of 5 mg/L in 2 out of 3 samples from each pile. In addition, it appears that the potential exists for the piles to form acid and acidic drainage. Based on the limited sampling outside of each pile footprint and SPLP test results, it appears that no significant downgradient contaminant migration has occurred below the piles in the vicinity of the downhill transect samples.

The Pb levels in the piles may be of concern if human exposure is likely. In particular, human exposure from inhalation of air borne dust originating from the piles and direct contact and ingestion of pile material. To minimize human exposure, a fence could be placed around the piles to lower the risk of human contact with the piles. Other possible mitigation options could include removing the piles and properly disposing of them on or off site, regrading the piles to flatten the slopes and constructing a low

Danny Middleton
November 18, 2003
Page 6

permeability soil cap, or leaving the piles as is and stabilizing the slopes with vegetation (if possible) or other means of erosion control.

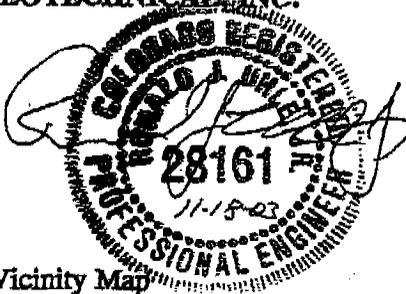
Based on the current regulatory environmental climate, it appears that if a historical mine working such as a mine spoil pile, adit or shaft is disturbed on private property, then the owner of the property can be held responsible for mitigating the mine workings and any off site degradation of surface and groundwater quality in accordance with all applicable regulations. Mitigating the piles would likely require state and federal permits which would involve additional studies to support a design and closure plan. Design and closure plans would likely have to comply with the EPA and State of Colorado Division of Minerals and Geology regulatory standards. Specific permitting and closure planning requirements have not been investigated with regards to pile management options. We recommend that a mine feature inventory be performed on the subject site, prior to evaluating mine waste rock management options.

Considering the potential for health, safety, and environmental impacts associated with construction, we recommend not placing residences within 200 feet of the mine workings. If there are any questions or if we may be of further assistance, please let us know.

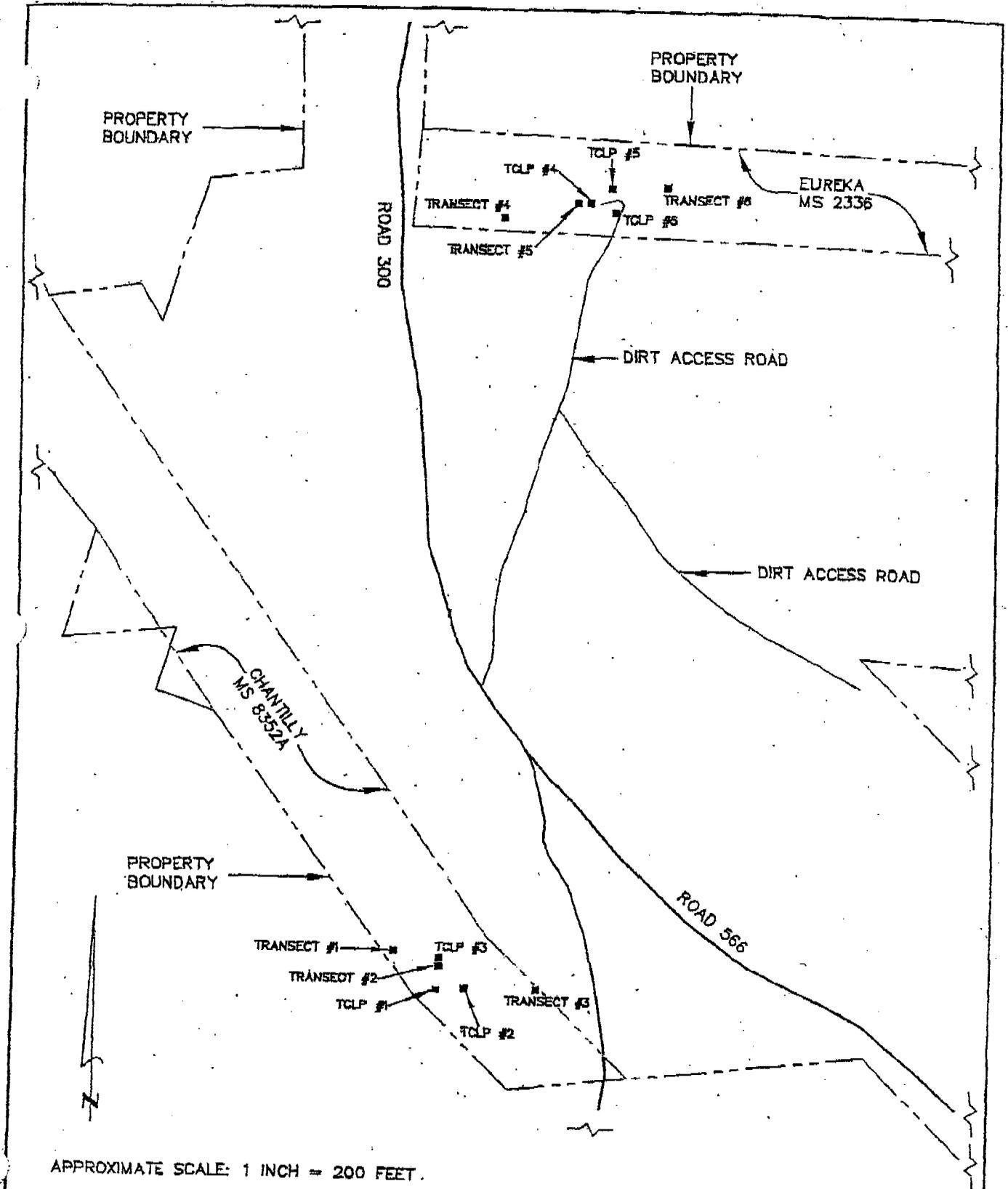
Sincerely,
HEPWORTH - PAWLAK GEOTECHNICAL, INC.

Ronald J. Uhle, P.E.
Associate

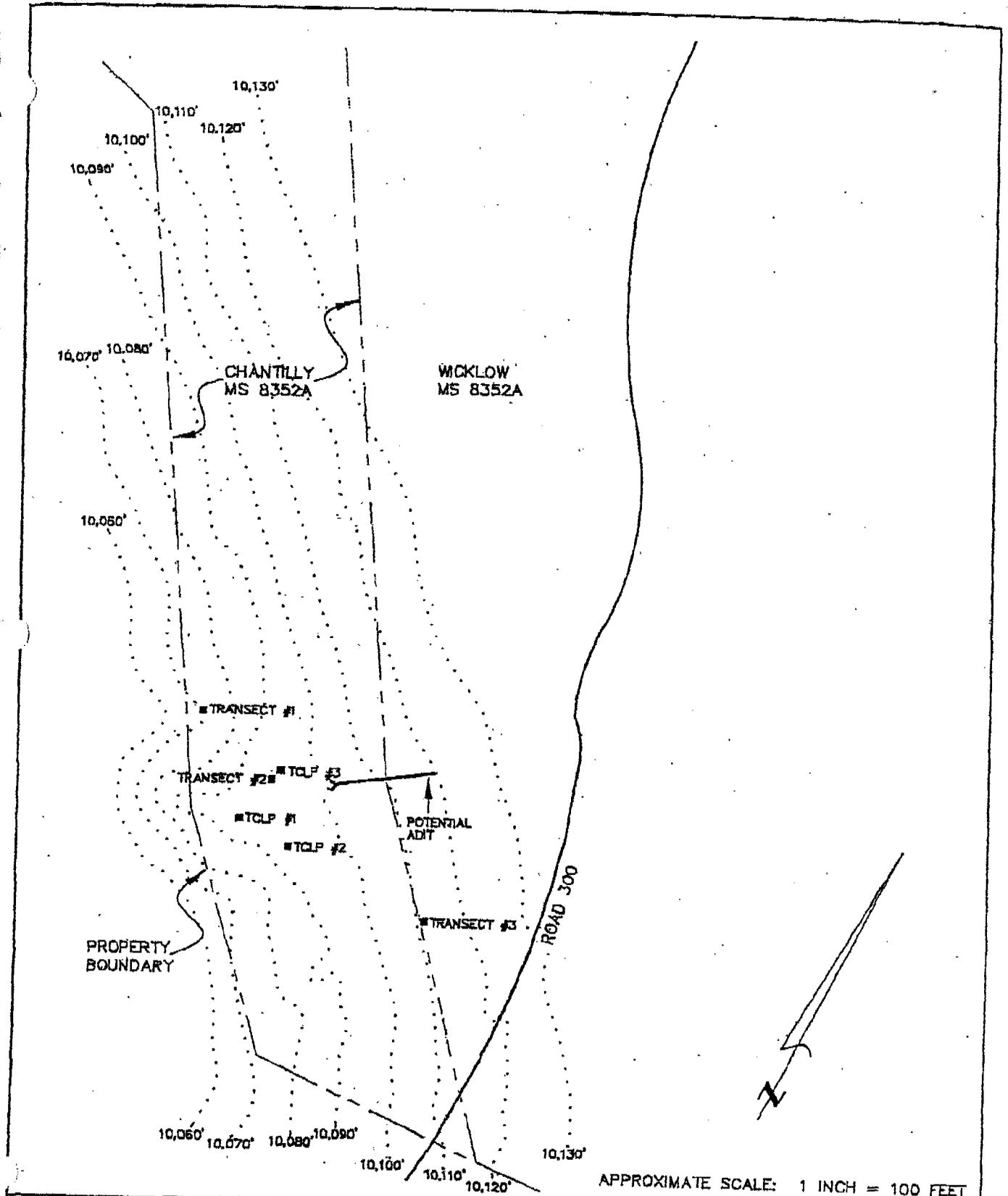
Rev. by: AJK



Attachments: Figure 1 - Site Vicinity Map
Figure 2 - Locations of Chantilly Samples
Figure 3 - Locations of Eureka Samples
Table 1 - EPA Toxicity Characteristic Wastes
Analytical Test Results

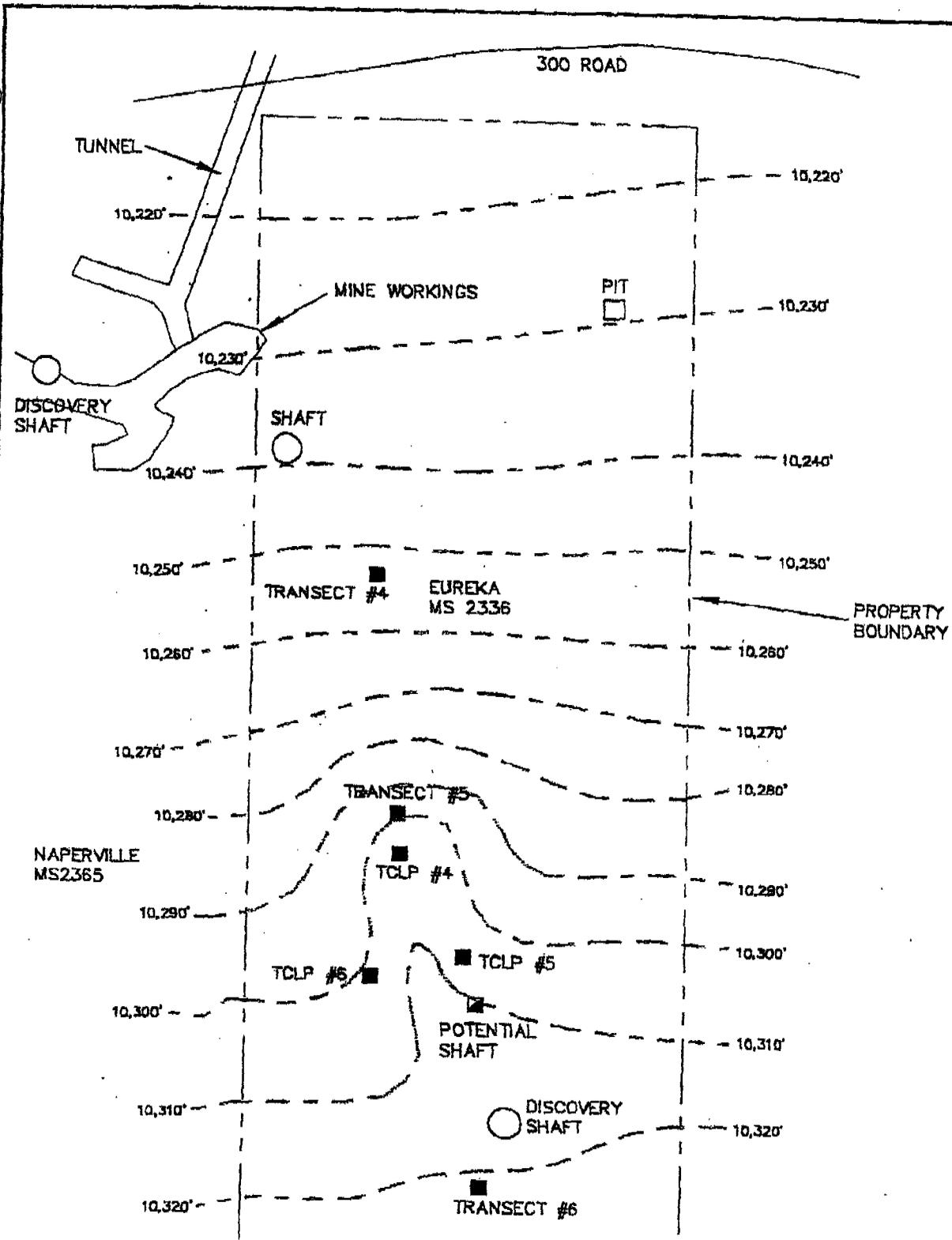


| | | | |
|---------|---|-------------------|----------|
| 403 174 | HEPWORTH - PAWLAK GEOTECHNICAL, INC. | SITE VICINITY MAP | FIGURE 1 |
|---------|---|-------------------|----------|



APPROXIMATE SCALE: 1 INCH = 100 FEET

| | | | |
|---------|---|--------------------------------|----------|
| 403 174 | HEPWORTH - PAWLAK GEOTECHNICAL, INC. | LOCATIONS OF CHANTILLY SAMPLES | FIGURE 2 |
|---------|---|--------------------------------|----------|



APPROXIMATE SCALE: 1 INCH = 50 FEET

| | | | |
|---------|---|-----------------------------|----------|
| 403 174 | HEPWORTH - PAWLAK GEOTECHNICAL, INC. | LOCATIONS OF EUREKA SAMPLES | FIGURE 3 |
|---------|---|-----------------------------|----------|

Table 1
 EPA Toxicity Characteristic Wastes
 Maximum Concentration of Contaminants

| Contaminant | Regulatory Level (mg/L) | EPA HW No. |
|-------------|----------------------------|------------|
| Arsenic | 5.0 | D004 |
| Barium | 100.0 | D005 |
| Cadmium | 1.0 | D006 |
| Chromium | 5.0 | D007 |
| Lead | 5.0 | D008 |
| Mercury | 0.2 | D009 |
| Selenium | 1.0 | D010 |
| Silver | 5.0 | D011 |

ACZ Laboratories, Inc.

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Analytical
Report

Ron Uhle
Hepworth Pawlak Geotechnical, Inc.
P.O. Drawer 1887 240 Annie Road
Silverthorne, CO 80498

June 30, 2003

Project ID: CHANTILLY AND EUREKA
ACZ Project ID: L41527

Ron Uhle:

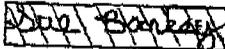
Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on June 06, 2003. This project has been assigned to ACZ's project number, L41527. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan, version 10.0. The enclosed results relate only to the samples received under L41527. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

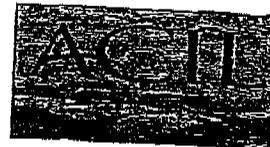
All samples and sub-samples associated with this project will be disposed of after July 30, 2003. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than \$10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years. Please notify your Project Manager if you have other needs.

If you have any questions, please contact your Project Manager or Customer Service Representative.



30/June/03

Sue Barkey, Project Manager, has reviewed and accepted this report in its entirety.



ACZ Laboratories, Inc.

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Case
Narrative

Hepworth Pawlak Geotechnical, Inc.

June 30, 2003

Project ID: CHANTILLY AND EUREKA

ACZ Project ID: L41527

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 12 soil samples from Hepworth Pawlak Geotechnical, Inc. on June 6, 2003. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L41527. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Time

All analyses were performed within EPA recommended holding times.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The following anomaly required further explanation not provided by the Extended Qualifier Report

1. For Lead by 1312 on samples L41527-10 through 12, the duplicate precision (RPD) was over the control limit at 54.4% due to sample matrix. The samples were not homogenous. The upper limit is 20%.

AGZ Laboratories, Inc.

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Inorganic Analytical Results

Hepworth Pawlak Geotechnical, Inc.
 Project ID: CHANTILLY AND EUREKA
 Sample ID: CHANTILLY TCLP#1

ACZ Sample ID: L41527-01
 Date Sampled: 06/05/03 12:35
 Date Received: 06/06/03
 Sample Matrix: Soil

Metals Analysis

| Parameter | EPA Method | Result | Unit | MDL | PQL | Date | Analyst |
|-----------------|------------------|--------|------|--------|-------|----------------|---------|
| Arsenic (TCLP) | M8010B ICP | | mg/L | 0.04 | 0.2 | 06/16/03 10:35 | bf |
| Barium (TCLP) | M8010B ICP | 0.087 | mg/L | 0.003 | 0.01 | 06/16/03 10:35 | bf |
| Cadmium (TCLP) | M8010B ICP | 0.385 | mg/L | 0.005 | 0.02 | 06/16/03 10:35 | bf |
| Chromium (TCLP) | M8010B ICP | | mg/L | 0.02 | 0.1 | 06/17/03 10:45 | sep |
| Copper (TCLP) | M8010B ICP | 0.08 | mg/L | 0.01 | 0.05 | 05/16/03 10:35 | bf |
| Lead (TCLP) | M8010B ICP | 23.50 | mg/L | 0.04 | 0.2 | 05/17/03 15:36 | sep |
| Mercury (TCLP) | M7470 CVAA | | mg/L | 0.0002 | 0.001 | 06/14/03 12:01 | ms |
| Selenium (TCLP) | M7742 AA-Hydride | | mg/L | 0.001 | 0.005 | 06/19/03 15:36 | ms |
| Silver (TCLP) | M8010B ICP | | mg/L | 0.005 | 0.03 | 06/16/03 10:35 | bf |
| Zinc (TCLP) | M8010B ICP | 62.90 | mg/L | 0.02 | 0.1 | 06/25/03 1:22 | sep |

Soil Analysis

| Parameter | EPA Method | Result | Unit | MDL | PQL | Date | Analyst | |
|--------------------------------------|---------------------|--------|--------|------------|------|------|----------------|-------|
| Acid Generation Potential (calc) | M600/2-78-054 1.3 | 11.9 | 47 Max | t CaCO3/Kt | 1 | 5 | 06/27/03 11:00 | as |
| Acid Neutralization Potential (calc) | M600/2-78-054 1.3 | 44 | | t CaCO3/Kt | 1 | 5 | 06/27/03 11:00 | as |
| Acid-Base Potential (calc) | M600/2-78-054 1.3 | 3.2 | -3 | t CaCO3/Kt | 1 | 5 | 06/27/03 11:00 | as |
| Neutralization Potential as CaCO3 | M600/2-78-054 3.2.3 | 4.4 | | % | 0.1 | 0.5 | 05/19/03 9:32 | lm |
| Sulfur Forms | M600/2-78-054 3.2.4 | | | | | | | |
| Sulfur Pyritic (HNO3 extractable) | | 0.38 | | % | 0.01 | 0.1 | 06/19/03 0:00 | lm/as |
| Sulfur Residual | | 0.69 | | % | 0.01 | 0.1 | 06/19/03 0:00 | lm/as |
| Sulfur Sulfate (HCl extractable) | | 0.52 | | % | 0.01 | 0.1 | 06/19/03 0:00 | lm/es |
| Sulfur Total | | 1.49 | | % | 0.01 | 0.1 | 06/19/03 0:00 | lm/as |

Soil Preparation

| Parameter | EPA Method | Result | Unit | MDL | PQL | Date | Analyst |
|-------------------------|------------------|--------|------|-----|-----|----------------|---------|
| Air Dry at 34 Degrees C | USDA No. 1, 1972 | | | | | 06/10/03 15:35 | lm |
| Crush and Pulverize | USDA No. 1, 1972 | | | | | 06/11/03 11:00 | lm |
| TCLP Metal Extraction | M1311 | | | | | 06/11/03 9:05 | as/lm |

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Inorganic Analytical Results

Hepworth Pawlak Geotechnical, Inc.
 Project ID: CHANTILLY AND EUREKA
 Sample ID: CHANTILLY TCLP#2

AGZ Sample ID: L41527-02
 Date Sampled: 06/05/03 12:45
 Date Received: 06/06/03
 Sample Matrix: Soil

Metals Analysis

| Parameter | EPA Method | Result | Qual. Xc | Unit | MDL | POL | Date | Analysis |
|-----------------|-----------------|-----------|----------|------|--------|-------|----------------|----------|
| Arsenic (TCLP) | M8010B ICP | .05 (.01) | U | mg/L | 0.04 | 0.2 | 06/16/03 10:39 | bf |
| Barium (TCLP) | M8010B ICP | 2.0 | | mg/L | 0.003 | 0.01 | 06/16/03 10:39 | bf |
| Cadmium (TCLP) | M6010B ICP | .005 | | mg/L | 0.005 | 0.02 | 06/16/03 10:39 | bf |
| Chromium (TCLP) | M6010B ICP | 0.1 | U | mg/L | 0.01 | 0.05 | 06/17/03 10:49 | scp |
| Copper (TCLP) | M6010B ICP | 1.0 | U | mg/L | 0.01 | 0.05 | 06/16/03 10:39 | bf |
| Lead (TCLP) | M6010B ICP | 1.00 | * | mg/L | 0.04 | 0.2 | 06/17/03 15:39 | scp |
| Mercury (TCLP) | M7470 CVAA | .002 | U | mg/L | 0.0002 | 0.001 | 06/14/03 12:02 | ms |
| Selenium (TCLP) | M7742 AA-Hydrde | .05 | U | mg/L | 0.001 | 0.005 | 06/19/03 15:37 | ms |
| Silver (TCLP) | M8010B ICP | .05 | U | mg/L | 0.005 | 0.03 | 06/16/03 10:39 | bf |
| Zinc (TCLP) | M6010B ICP | 5 | | mg/L | 0.01 | 0.05 | 06/16/03 10:39 | bf |

Soil Analysis

| Parameter | EPA Method | Result | Qual. Xc | Unit | MDL | POL | Date | Analysis |
|--------------------------------------|---------------------|--------|----------|------------|------|-----|----------------|----------|
| Acid Generation Potential (calc) | M600/2-78-054 1.3 | 10 | | l CaCO3/Kt | 1 | 5 | 06/27/03 11:24 | as |
| Acid Neutralization Potential (calc) | M600/2-78-054 1.3 | 392 | | l CaCO3/Kt | 1 | 5 | 06/27/03 11:24 | as |
| Acid-Base Potential (calc) | M600/2-78-054 1.3 | 382 | | l CaCO3/Kt | 1 | 5 | 06/27/03 11:24 | as |
| Neutralization Potential as CaCO3 | M600/2-78-054 3.2.3 | 38.2 | | % | 0.1 | 0.5 | 06/13/03 9:55 | lm |
| Sulfur Forms | M600/2-78-054 3.2.4 | | | | | | | |
| Sulfur Pyritic (HNO3 extractable) | | | U | % | 0.01 | 0.1 | 06/19/03 0:00 | lm/as |
| Sulfur Residual | | 0.33 | | % | 0.01 | 0.1 | 06/19/03 0:00 | lm/as |
| Sulfur Sulfate (HCl extractable) | | | U | % | 0.01 | 0.1 | 06/19/03 0:00 | lm/as |
| Sulfur Total | | 0.33 | | % | 0.01 | 0.1 | 06/19/03 0:00 | lm/as |

Soil Preparation

| Parameter | EPA Method | Result | Qual. Xc | Unit | MDL | POL | Date | Analysis |
|-------------------------|------------------|--------|----------|------|-----|-----|----------------|----------|
| Air Dry at 34 Degrees C | USDA No. 1, 1972 | | | | | | 06/10/03 15:37 | lm |
| Crush and Pulverize | USDA No. 1, 1972 | | | | | | 06/11/03 11:12 | lm |
| TCLP Metal Extraction | M1311 | | | | | | 06/11/03 9:10 | as/lm |

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Inorganic Analytical Results

Hepworth Pawlak Geotechnical, Inc.
 Project ID: CHANTILLY AND EUREKA
 Sample ID: CHANTILLY TCLP#3

ACZ Sample ID: L41527-03
 Date Sampled: 06/05/03 12:55
 Date Received: 06/06/03
 Sample Matrix: Soil

Metals Analysis

| Parameter | EPA Method | Result | Qual. Xc | Units | MDF | PQL | Date | Analyst |
|-----------------|------------------|--------|----------|-------|--------|-------|----------------|---------|
| Arsenic (TCLP) | M6010B ICP | | U | mg/L | 0.04 | 0.2 | 06/16/03 10:42 | bf |
| Barium (TCLP) | M6010B ICP | 2.540 | | mg/L | 0.003 | 0.01 | 06/16/03 10:42 | bf |
| Cadmium (TCLP) | M6010B ICP | 0.038 | | mg/L | 0.005 | 0.02 | 06/16/03 10:42 | bf |
| Chromium (TCLP) | M6010B ICP | | U | mg/L | 0.01 | 0.05 | 06/17/03 10:53 | scp |
| Copper (TCLP) | M6010B ICP | | U | mg/L | 0.01 | 0.05 | 06/16/03 10:42 | bf |
| Lead (TCLP) | M6010B ICP | 48.50 | * | mg/L | 0.04 | 0.2 | 06/17/03 15:43 | scp |
| Mercury (TCLP) | M7470 CVAA | | U | mg/L | 0.0002 | 0.001 | 06/14/03 12:04 | ms |
| Selenium (TCLP) | M7742 AA-Hydride | | U | mg/L | 0.001 | 0.005 | 06/19/03 16:39 | ms |
| Silver (TCLP) | M6010B ICP | | U | mg/L | 0.005 | 0.03 | 06/16/03 10:42 | bf |
| Zinc (TCLP) | M6010B ICP | 5.33 | * | mg/L | 0.01 | 0.05 | 06/16/03 10:42 | bf |

Soil Analysis

| Parameter | EPA Method | Result | Qual. Xc | Units | MDF | PQL | Date | Analyst |
|--------------------------------------|---------------------|--------|----------|------------|------|-----|----------------|---------|
| Acid Generation Potential (calc) | M600/2-78-054 1.8 | 2.3 10 | | t CaCO3/Kt | 1 | 5 | 06/27/03 11:48 | as |
| Acid Neutralization Potential (calc) | M600/2-78-054 1.3 | 2 | B | t CaCO3/Kt | 1 | 5 | 06/27/03 11:48 | as |
| Acid-Base Potential (calc) | M600/2-78-054 1.3 | >12 -8 | | t CaCO3/Kt | 1 | 5 | 06/27/03 11:48 | as |
| Neutralization Potential as CaCO3 | M600/2-78-054 3.2.3 | 0.2 | B | % | 0.1 | 0.5 | 06/13/03 9:40 | lrm |
| Sulfur Forms | M600/2-78-054 3.2.4 | | | | | | | |
| Sulfur Pyrrite (HNO3 extractable) | | 0.01 | B | % | 0.01 | 0.1 | 06/19/03 0:00 | lrm/as |
| Sulfur Residual | | 0.31 | | % | 0.01 | 0.1 | 06/19/03 0:00 | lrm/as |
| Sulfur Sulfate (HCl extractable) | | 0.01 | B | % | 0.01 | 0.1 | 06/19/03 0:00 | lrm/as |
| Sulfur Total | | 0.33 | | % | 0.01 | 0.1 | 06/19/03 0:00 | lrm/as |

Soil Preparation

| Parameter | EPA Method | Result | Qual. Xc | Units | MDF | PQL | Date | Analyst |
|-------------------------|------------------|--------|----------|-------|-----|-----|----------------|---------|
| Air Dry at 34 Degrees C | USDA No. 1, 1972 | | | | | | 06/10/03 15:39 | lrm |
| Crush and Pulverize | USDA No. 1, 1972 | | | | | | 06/11/03 11:24 | lrm |
| TCLP Metal Extraction | M1311 | | | | | | 06/11/03 9:15 | as/lrm |

ACZ Laboratories, Inc.

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Inorganic Analytical Results

Hepworth Pawlak Geotechnical, Inc.
 Project ID: CHANTILLY AND EUREKA
 Sample ID: CHANTILLY TRANSECT 1

ACZ Sample ID: L41527-04
 Date Sampled: 06/05/03 12:20
 Date Received: 06/06/03
 Sample Matrix: Soil

Metals Analysis

| Parameter | EPA Method | Result | Unit | QC | Units | MBL | MDL | Date | Analyst |
|-----------------|--------------|---------|------|----|-------|--------|--------|----------------|---------|
| Arsenic (1312) | M6020 ICP-MS | | U | | mg/L | 0.0005 | 0.003 | 06/21/03 18:49 | jb |
| Barium (1312) | M6010B ICP | | U | | mg/L | 0.003 | 0.01 | 06/24/03 1:51 | scp |
| Cadmium (1312) | M6020 ICP-MS | | U | | mg/L | 0.0001 | 0.0005 | 06/21/03 18:49 | jb |
| Chromium (1312) | M6020 ICP-MS | 0.0002 | B | | mg/L | 0.0001 | 0.0005 | 06/21/03 18:49 | jb |
| Copper (1312) | M6010B ICP | | U | | mg/L | 0.01 | 0.05 | 06/24/03 1:51 | scp |
| Lead (1312) | M6020 ICP-MS | 0.0054 | | | mg/L | 0.0001 | 0.0005 | 06/21/03 18:49 | jb |
| Mercury (1312) | M7470 CVAA | | U | | mg/L | 0.0002 | 0.001 | 05/23/03 21:33 | ms |
| Selenium (1312) | M6020 ICP-MS | | U | | mg/L | 0.002 | 0.008 | 06/21/03 18:49 | jb |
| Silver (1312) | M6020 ICP-MS | 0.00005 | B | | mg/L | 5E-05 | 0.0003 | 06/25/03 19:56 | jb |
| Zinc (1312) | M6010B ICP | 0.01 | B | | mg/L | 0.01 | 0.05 | 06/24/03 1:51 | scp |

Soil Preparation

| Parameter | EPA Method | Result | Unit | QC | Units | MBL | MDL | Date | Analyst |
|--------------------------------------|------------|--------|------|----|-------|-----|-----|----------------|---------|
| Synthetic Precip. Leaching Procedure | M1312 | | | | | | | 06/16/03 10:10 | irm/as |

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487(800) 334-5493

Inorganic Analytical Results

Hepworth Pawlak Geotechnical, Inc.

Project ID: CHANTILLY AND EUREKA

Sample ID: CHANTILLY TRANSECT 2

ACZ Sample ID: L41527-05

Date Sampled: 06/05/03 12:10

Date Received: 06/06/03

Sample Matrix: Soil

Metals Analysis

| Parameter | EPA Method | Result | Qual. CD | Unit | MLL | LOL | Date | Analyst |
|-----------------|--------------|---------|----------|------|--------|--------|----------------|---------|
| Arsenic (1312) | M6020 ICP-MS | | U | mg/L | 0.0005 | 0.003 | 06/21/03 19:06 | jb |
| Barium (1312) | M6010B ICP | 0.531 | | mg/L | 0.003 | 0.01 | 06/24/03 2:01 | scp |
| Cadmium (1312) | M6020 ICP-MS | 0.0143 | | mg/L | 0.0001 | 0.0005 | 06/21/03 19:06 | jb |
| Chromium (1312) | M6020 ICP-MS | | U | mg/L | 0.0001 | 0.0006 | 06/21/03 19:06 | jb |
| Copper (1312) | M6010B ICP | | U | mg/L | 0.01 | 0.05 | 06/24/03 2:01 | scp |
| Lead (1312) | M6020 ICP-MS | 0.1160 | | mg/L | 0.0001 | 0.0005 | 06/21/03 19:06 | jb |
| Mercury (1312) | M7470 CVAA | | U | mg/L | 0.0002 | 0.001 | 06/23/03 21:36 | ms |
| Selenium (1312) | M6020 ICP-MS | | U | mg/L | 0.002 | 0.008 | 06/21/03 19:06 | jb |
| Silver (1312) | M6020 ICP-MS | 0.00008 | B | mg/L | 5E-05 | 0.0003 | 06/25/03 20:07 | jb |
| Zinc (1312) | M6010B ICP | 1.27 | | mg/L | 0.01 | 0.05 | 06/24/03 2:01 | scp |

Soil Preparation

| Parameter | EPA Method | Result | Qual. CD | Unit | MLL | LOL | Date | Analyst |
|--------------------------------------|------------|--------|----------|------|-----|-----|----------------|---------|
| Synthetic Precip. Leaching Procedure | M1312 | | | | | | 06/16/03 10:32 | lrm/as |

Hepworth Pawlak Geotechnical, Inc.
 Project ID: CHANTILLY AND EUREKA
 Sample ID: CHANTILLY TRANSECT 3

ACZ Sample ID: L41527-06
 Date Sampled: 06/05/03 12:00
 Date Received: 06/06/03
 Sample Matrix: Soil

Metals Analysis

| Parameter | EPA Method | Result | Unit | XD | MDL | POI | Date | Analyst |
|-----------------|--------------|---------|------|----|------|--------|----------------|---------|
| Arsenic (1312) | M6020 ICP-MS | 0.0006 | B | * | mg/L | 0.0005 | 06/21/03 19:11 | jb |
| Barium (1312) | M6010B ICP | 0.006 | B | * | mg/L | 0.003 | 06/24/03 2:05 | scp |
| Cadmium (1312) | M6020 ICP-MS | | U | | mg/L | 0.0001 | 06/21/03 19:11 | jb |
| Chromium (1312) | M6020 ICP-MS | 0.0003 | B | * | mg/L | 0.0001 | 06/21/03 19:11 | jb |
| Copper (1312) | M6010B ICP | | U | | mg/L | 0.01 | 06/24/03 2:05 | scp |
| Lead (1312) | M6020 ICP-MS | 0.0047 | U | | mg/L | 0.0001 | 06/21/03 19:11 | jb |
| Mercury (1312) | M7470 CVAA | | U | | mg/L | 0.0002 | 06/23/03 21:37 | ms |
| Selenium (1312) | M6020 ICP-MS | | U | | mg/L | 0.002 | 06/21/03 19:11 | jb |
| Silver (1312) | M6020 ICP-MS | 0.00013 | B | * | mg/L | 5E-05 | 06/25/03 20:12 | jb |
| Zinc (1312) | M6010B ICP | 0.01 | B | * | mg/L | 0.01 | 06/24/03 2:05 | scp |

Soil Preparation

| Parameter | EPA Method | Result | Unit | XD | MDL | POI | Date | Analyst |
|---|------------|--------|------|----|-----|-----|----------------|---------|
| Synthetic Precip. Leaching Procedure | M1312 | | | | | | 05/16/03 10:43 | lm/as |

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487(900) 334-5493

Inorganic Analytical Results

Hepworth Pawlak Geotechnical, Inc.
 Project ID: CHANTILLY AND EUREKA
 Sample ID: EUREKA TCLP #4

ACZ Sample ID: L41527-07
 Date Sampled: 06/05/03 14:14
 Date Received: 06/06/03
 Sample Matrix: Soil

Metals Analysis

| Parameter | EPA Method | Result | Qual. XG | Units | MDL | POI | Date | Analyst |
|-----------------|------------------|--------|----------|-------|--------|-------|----------------|---------|
| Arsenic (TCLP) | M6010B ICP | | U | mg/L | 0.04 | 0.2 | 06/18/03 10:46 | bf |
| Barium (TCLP) | M6010B ICP | 0.015 | | mg/L | 0.003 | 0.01 | 06/18/03 10:46 | bf |
| Cadmium (TCLP) | M6010B ICP | 0.220 | | mg/L | 0.005 | 0.02 | 06/18/03 10:46 | bf |
| Chromium (TCLP) | M6010B ICP | | U | mg/L | 0.01 | 0.05 | 06/17/03 10:56 | scp |
| Copper (TCLP) | M6010B ICP | 9.03 | B | mg/L | 0.01 | 0.05 | 06/18/03 10:46 | bf |
| Lead (TCLP) | M6010B ICP | 16.10 | | mg/L | 0.04 | 0.2 | 06/17/03 15:47 | scp |
| Mercury (TCLP) | M7470 CVAA | | U | mg/L | 0.0002 | 0.001 | 06/14/03 12:05 | ms |
| Selenium (TCLP) | M7742 AA-Hydride | 0.001 | B | mg/L | 0.001 | 0.005 | 06/19/03 15:40 | ms |
| Silver (TCLP) | M6010B ICP | | U | mg/L | 0.005 | 0.03 | 06/16/03 10:46 | bf |
| Zinc (TCLP) | M6010B ICP | 35.50 | | mg/L | 0.01 | 0.05 | 06/16/03 10:46 | bf |

Soil Analysis

| Parameter | EPA Method | Result | Qual. XG | Units | MDL | POI | Date | Analyst |
|--------------------------------------|---------------------|--------|----------|------------|------|-----|----------------|---------|
| Acid Generation Potential (calc) | M600/2-78-054 1.3 | 137 | | t CaCO3/Kt | 1 | 5 | 06/27/03 12:12 | aa |
| Acid Neutralization Potential (calc) | M600/2-78-054 1.3 | 30 | | t CaCO3/Kt | 1 | 5 | 06/27/03 12:12 | aa |
| Acid-Base Potential (calc) | M600/2-78-054 1.3 | -107 | | t CaCO3/Kt | 1 | 5 | 06/27/03 12:12 | aa |
| Neutralization Potential as CaCO3 | M600/2-78-054 3.2.3 | 3.0 | | % | 0.1 | 0.5 | 06/13/03 9:49 | lrm |
| Sulfur Forms | M600/2-78-054 3.2.4 | | | | | | | |
| Sulfur Pyritic (HNO3 extractable) | | 0.81 | | % | 0.01 | 0.1 | 06/19/03 0:00 | lrm/aa |
| Sulfur Residual | | 0.75 | | % | 0.01 | 0.1 | 06/19/03 0:00 | lrm/aa |
| Sulfur Sulfate (HCl extractable) | | 3.03 | | % | 0.01 | 0.1 | 06/19/03 0:00 | lrm/aa |
| Sulfur Total | | 4.59 | | % | 0.01 | 0.1 | 06/19/03 0:00 | lrm/aa |

Soil Preparation

| Parameter | EPA Method | Result | Qual. XG | Units | MDL | POI | Date | Analyst |
|-------------------------|------------------|--------|----------|-------|-----|-----|----------------|---------|
| Air Dry at 34 Degrees C | USDA No. 1, 1972 | | | | | | 06/10/03 15:41 | lrm |
| Crush and Pulverize | USDA No. 1, 1972 | | | | | | 06/11/03 11:36 | lrm |
| TCLP Metal Extraction | M1311 | | | | | | 06/11/03 9:20 | aa/lrm |

REPIN.01.11.00.01

* Please refer to Extended Qualifier Report for detail.

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Inorganic Analytical Results

Hepworth Pawlak Geotechnical, Inc.
 Project ID: CHANTILLY AND EUREKA
 Sample ID: EUREKA TCLP #5

AGZ Sample ID: L41527-08
 Date Sampled: 06/05/03 14:22
 Date Received: 06/06/03
 Sample Matrix: Soil

Metals Analysis

| Parameter | EPA Method | Result | Qual. X0 | Units | MDL | PQL | Date | Analysis |
|-----------------|------------------|--------|----------|-------|--------|-------|----------------|----------|
| Arsenic (TCLP) | M6010B ICP | | U | mg/L | 0.04 | 0.2 | 06/16/03 10:49 | bf |
| Barium (TCLP) | M6010B ICP | 0.025 | | mg/L | 0.003 | 0.01 | 06/16/03 10:49 | bf |
| Cadmium (TCLP) | M6010B ICP | 0.121 | | mg/L | 0.005 | 0.02 | 06/16/03 10:49 | bf |
| Chromium (TCLP) | M6010B ICP | | U | mg/L | 0.01 | 0.05 | 06/17/03 11:00 | sep |
| Copper (TCLP) | M6010B ICP | | U | mg/L | 0.01 | 0.05 | 06/16/03 10:49 | bf |
| Lead (TCLP) | M6010B ICP | 0.12 | B | mg/L | 0.04 | 0.2 | 06/17/03 15:50 | sep |
| Mercury (TCLP) | M7470 CVAA | | U | mg/L | 0.0002 | 0.001 | 06/14/03 12:05 | ms |
| Selenium (TCLP) | M7742 AA-Hydride | | U | mg/L | 0.001 | 0.005 | 06/19/03 15:42 | ms |
| Silver (TCLP) | M6010B ICP | | U | mg/L | 0.005 | 0.03 | 06/16/03 10:49 | bf |
| Zinc (TCLP) | M6010B ICP | 16.90 | | mg/L | 0.01 | 0.05 | 06/16/03 10:49 | bf |

Soil Analysis

| Parameter | EPA Method | Result | Qual. X0 | Units | MDL | PQL | Date | Analysis |
|--------------------------------------|---------------------|--------|----------|------------|------|-----|----------------|----------|
| Acid Generation Potential (calc) | M600/2-78-054 1.3 | 55 | | t CaCO3/Kt | 1 | 5 | 06/27/03 12:36 | as |
| Acid Neutralization Potential (calc) | M600/2-78-054 1.3 | 114 | | t CaCO3/Kt | 1 | 5 | 06/27/03 12:36 | as |
| Acid-Base Potential (calc) | M600/2-78-054 1.3 | 59 | | t CaCO3/Kt | 1 | 5 | 06/27/03 12:36 | as |
| Neutralization Potential as CaCO3 | M600/2-78-054 3.2.3 | 11.4 | | % | 0.1 | 0.5 | 06/19/03 13:25 | lm |
| Sulfur Forms | M600/2-78-054 3.2.4 | | | | | | | |
| Sulfur Pyritic (HNO3 extractable) | | 0.41 | | % | 0.01 | 0.1 | 06/19/03 0:00 | lm/as |
| Sulfur Residual | | 0.18 | | % | 0.01 | 0.1 | 06/19/03 0:00 | lm/as |
| Sulfur Sulfate (HCl extractable) | | 1.18 | | % | 0.01 | 0.1 | 06/19/03 0:00 | lm/as |
| Sulfur Total | | 1.77 | | % | 0.01 | 0.1 | 06/19/03 0:00 | lm/as |

Soil Preparation

| Parameter | EPA Method | Result | Qual. X0 | Units | MDL | PQL | Date | Analysis |
|-------------------------|------------------|--------|----------|-------|-----|-----|----------------|----------|
| Air Dry at 34 Degrees C | USDA No. 1, 1972 | | | | | | 06/10/03 15:43 | lm |
| Crush and Pulverize | USDA No. 1, 1972 | | | | | | | |
| TCLP Metal Extraction | M1311 | | | | | | 06/11/03 11:48 | lm |
| | | | | | | | 06/11/03 9:25 | as/lm |

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Inorganic Analytical Results

Hepworth Pawlak Geotechnical, Inc.
 Project ID: CHANTILLY AND EUREKA
 Sample ID: EUREKA TCLP #6

ACZ Sample ID: L41527-09
 Date Sampled: 06/05/03 14:29
 Date Received: 06/08/03
 Sample Matrix: Soil

Metals Analysis

| Parameter | EPA Method | Result | Qual. No. | Units | MDE | POI | Date | Analysis |
|-----------------|------------------|--------|-----------|-------|--------|-------|----------------|----------|
| Arsenic (TCLP) | M6010B ICP | | U | mg/L | 0.04 | 0.2 | 06/16/03 10:53 | bf |
| Barium (TCLP) | M6010B ICP | 0.007 | B | mg/L | 0.003 | 0.01 | 06/16/03 10:53 | bf |
| Cadmium (TCLP) | M6010B ICP | 0.007 | B | mg/L | 0.005 | 0.02 | 06/16/03 10:53 | bf |
| Chromium (TCLP) | M6010B ICP | | U | mg/L | 0.01 | 0.05 | 06/17/03 11:04 | scp |
| Copper (TCLP) | M6010B ICP | | U | mg/L | 0.01 | 0.05 | 06/16/03 10:53 | bf |
| Lead (TCLP) | M6010B ICP | 35.60 | * | mg/L | 0.04 | 0.2 | 06/17/03 15:54 | scp |
| Mercury (TCLP) | M7470 CVAA | | U | mg/L | 0.0002 | 0.001 | 06/14/03 12:07 | ms |
| Selenium (TCLP) | M7742 AA-Hydride | | U | mg/L | 0.001 | 0.005 | 06/19/03 15:43 | ms |
| Silver (TCLP) | M6010B ICP | | U | mg/L | 0.005 | 0.03 | 06/16/03 10:53 | bf |
| Zinc (TCLP) | M6010B ICP | 0.64 | * | mg/L | 0.01 | 0.05 | 06/16/03 10:53 | bf |

Soil Analysis

| Parameter | EPA Method | Result | Qual. No. | Units | MDE | POI | Date | Analysis |
|--------------------------------------|---------------------|--------|-----------|------------|------|-----|----------------|----------|
| Acid Generation Potential (calc) | M600/2-78-054 1.3 | 77 | | t CaCO3/Kt | 1 | 5 | 06/27/03 13:00 | as |
| Acid Neutralization Potential (calc) | M600/2-78-054 1.3 | | U | t CaCO3/Kt | 1 | 5 | 06/27/03 13:00 | as |
| Acid-Base Potential (calc) | M600/2-78-054 1.3 | -77 | | t CaCO3/Kt | 1 | 5 | 06/27/03 13:00 | as |
| Neutralization Potential as CaCO3 | M600/2-78-054 3.2.3 | | U | % | 0.1 | 0.5 | 06/13/03 10:06 | lm |
| Sulfur Forms | M600/2-78-054 3.2.4 | | | | | | | |
| Sulfur Pyritic (HNO3 extractable) | | 0.18 | | % | 0.01 | 0.1 | 06/19/03 0:00 | lm/as |
| Sulfur Residual | | 1.10 | | % | 0.01 | 0.1 | 06/19/03 0:00 | lm/as |
| Sulfur Sulfate (HCl extractable) | | 1.18 | | % | 0.01 | 0.1 | 06/19/03 0:00 | lm/as |
| Sulfur Total | | 2.46 | | % | 0.01 | 0.1 | 06/19/03 0:00 | lm/as |

Soil Preparation

| Parameter | EPA Method | Result | Qual. No. | Units | MDE | POI | Date | Analysis |
|-------------------------|------------------|--------|-----------|-------|-----|-----|----------------|----------|
| Air Dry at 34 Degrees C | USDA No. 1, 1972 | | | | | | 06/10/03 15:44 | lm |
| Crush and Pulverize | USDA No. 1, 1972 | | | | | | 06/11/03 12:00 | lm |
| TCLP Metal Extraction | M1311 | | | | | | 06/11/03 9:30 | as/lm |

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Inorganic Analytical Results

Hepworth Pawlak Geotechnical, Inc.
 Project ID: CHANTILLY AND EUREKA
 Sample ID: EUREKA TRANSECT #4

ACZ Sample ID: L41527-10
 Date Sampled: 06/05/03 14:10
 Date Received: 06/06/03
 Sample Matrix: Soil

Metals Analysis

| Parameter | EPA Method | Result | Qual. XG | Units | MDL | IDL | Date | Analyst |
|-----------------|--------------|---------|----------|-------|--------|--------|----------------|---------|
| Arsenic (1312) | M6020 ICP-MS | 0.0007 | B * | mg/L | 0.0005 | 0.003 | 06/21/03 19:17 | jb |
| Barium (1312) | M6010B ICP | 0.015 | * | mg/L | 0.003 | 0.01 | 06/24/03 2:33 | scp |
| Cadmium (1312) | M6020 ICP-MS | 0.0008 | * | mg/L | 0.0001 | 0.0005 | 06/21/03 19:17 | jb |
| Chromium (1312) | M6020 ICP-MS | 0.0006 | * | mg/L | 0.0001 | 0.0005 | 06/21/03 19:17 | jb |
| Copper (1312) | M6010B ICP | | U | mg/L | 0.01 | 0.05 | 06/24/03 2:33 | scp |
| Lead (1312) | M6020 ICP-MS | 0.0041 | * | mg/L | 0.0001 | 0.0005 | 06/21/03 19:17 | jb |
| Mercury (1312) | M7470 CVAA | | U | mg/L | 0.0002 | 0.001 | 06/23/03 21:38 | ms |
| Selenium (1312) | M8020 ICP-MS | | U | mg/L | 0.002 | 0.008 | 06/21/03 19:17 | jb |
| Silver (1312) | M6020 ICP-MS | 0.00008 | B | mg/L | 5E-05 | 0.0003 | 06/25/03 20:18 | jb |
| Zinc (1312) | M6010B ICP | 0.29 | * | mg/L | 0.01 | 0.05 | 06/24/03 2:33 | scp |

Soil Preparation

| Parameter | EPA Method | Result | Units | MDL | IDL | Date | Analyst |
|--------------------------------------|------------|--------|-------|-----|-----|----------------|---------|
| Synthetic Precip. Leaching Procedure | M1312 | | | | | 06/16/03 11:16 | lrm/as |

Hepworth Pawlak Geotechnical, Inc.
 Project ID: CHANTILLY AND EUREKA
 Sample ID: EUREKA TRANSECT #5

ACZ Sample ID: L41527-11
 Date Sampled: 06/05/03 13:45
 Date Received: 06/06/03
 Sample Matrix: Soil

Metals Analysis

| Parameter | EPA Method | Result | Units | XC | Dir | MDL | LOD | Date | Analyst |
|-----------------|--------------|--------|-------|----|-----|--------|--------|----------------|---------|
| Arsenic (1312) | M6020 ICP-MS | | mg/L | U | * | 0.0005 | 0.003 | 06/21/03 19:33 | jb |
| Barium (1312) | M6010B ICP | 0.025 | mg/L | | * | 0.003 | 0.01 | 06/24/03 2:38 | sop |
| Cadmium (1312) | M6020 ICP-MS | 0.1290 | mg/L | | | 0.0001 | 0.0005 | 06/21/03 19:33 | jb |
| Chromium (1312) | M6020 ICP-MS | | mg/L | U | * | 0.0001 | 0.0005 | 06/21/03 19:33 | jb |
| Copper (1312) | M6010B ICP | | mg/L | U | | 0.01 | 0.05 | 06/24/03 2:38 | sop |
| Lead (1312) | M6020 ICP-MS | 0.1470 | mg/L | | * | 0.0001 | 0.0005 | 06/21/03 19:33 | jb |
| Mercury (1312) | M7470 CVA | | mg/L | U | | 0.0002 | 0.001 | 06/23/03 21:40 | ms |
| Selenium (1312) | M6020 ICP-MS | | mg/L | U | | 0.002 | 0.008 | 06/21/03 19:33 | jb |
| Silver (1312) | M6020 ICP-MS | | mg/L | U | | 5E-05 | 0.0003 | 06/25/03 20:23 | jb |
| Zinc (1312) | M6010B ICP | 5.08 | mg/L | | * | 0.01 | 0.05 | 06/24/03 2:38 | sop |

Soil Preparation

| Parameter | EPA Method | Result | Units | XC | Dir | MDL | LOD | Date | Analyst |
|--------------------------------------|------------|--------|-------|----|-----|-----|-----|----------------|---------|
| Synthetic Precip. Leaching Procedure | M1312 | | | | | | | 06/16/03 11:27 | lrm/ac |

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Inorganic Analytical Results

Hepworth Pawlak Geotechnical, Inc.
 Project ID: CHANTILLY AND EUREKA
 Sample ID: EUREKA TRANSECT #6

ACZ Sample ID: L41527-12
 Date Sampled: 06/05/03 13:55
 Date Received: 06/06/03
 Sample Matrix: Soil

Metals Analysis

| Parameter | EPA Method | Result | Unit | XC | Units | Min | Max | Date | Analyst |
|-----------------|--------------|--------|------|----|-------|--------|--------|----------------|---------|
| Arsenic (1312) | M6020 ICP-MS | | U | * | mg/L | 0.0005 | 0.003 | 06/21/03 19:39 | jb |
| Barium (1312) | M6010B ICP | 0.004 | B | * | mg/L | 0.003 | 0.01 | 06/24/03 2:42 | scp |
| Cadmium (1312) | M6020 ICP-MS | | U | * | mg/L | 0.0001 | 0.0005 | 06/21/03 19:39 | jb |
| Chromium (1312) | M6020 ICP-MS | 0.0001 | B | * | mg/L | 0.0001 | 0.0005 | 06/21/03 19:39 | jb |
| Copper (1312) | M6010B ICP | | U | * | mg/L | 0.01 | 0.05 | 06/24/03 2:42 | scp |
| Lead (1312) | M6020 ICP-MS | 0.0004 | B | * | mg/L | 0.0001 | 0.0005 | 06/21/03 19:39 | jb |
| Mercury (1312) | M7470 CVAA | | U | * | mg/L | 0.0002 | 0.001 | 06/23/03 21:41 | ms |
| Selenium (1312) | M6020 ICP-MS | | U | * | mg/L | 0.002 | 0.008 | 06/21/03 19:39 | jb |
| Silver (1312) | M6020 ICP-MS | | U | * | mg/L | 5E-05 | 0.0003 | 06/25/03 20:39 | jb |
| Zinc (1312) | M6010B ICP | | U | * | mg/L | 0.01 | 0.05 | 06/24/03 2:42 | scp |

Soil Preparation

| Parameter | EPA Method | Result | Unit | XC | Units | Min | Max | Date | Analyst |
|--------------------------------------|------------|--------|------|----|-------|-----|-----|----------------|---------|
| Synthetic Precip. Leaching Procedure | M1312 | | | | | | | 06/15/03 11:38 | lrm/es |

AGZ Laboratories, Inc.

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Inorganic
Reference

Report After Explanation

| | |
|----------------|---|
| Batch | A distinct set of samples analyzed at a specific time |
| Found | Value of the QC Type of Interest |
| Limit | Upper limit for RPD, in %. |
| Lower | Lower Recovery Limit, in % (except for LCSS, mg/Kg) |
| MDL | Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations. |
| PCN/SCN | A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis |
| PQL | Practical Quantitation Limit, typically 3 times the MDL |
| QC | True Value of the Control Sample or the amount added to the Spike |
| Rec | Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg) |
| RPD | Relative Percent Difference, calculation used for Duplicate QC Types |
| Upper | Upper Recovery Limit, in % (except for LCSS, mg/Kg) |
| Sample | Value of the Sample of Interest |

QC Sample Type

| | | | |
|--------------|--|--------------|--|
| AS | Analytical Spike (Post Digestion) | LCSWD | Laboratory Control Sample - Water Duplicate |
| ASD | Analytical Spike (Post Digestion) Duplicate | LFB | Laboratory Fortified Blank |
| CCB | Continuing Calibration Blank | LFM | Laboratory Fortified Matrix |
| CCV | Continuing Calibration Verification standard | LFMD | Laboratory Fortified Matrix Duplicate |
| DUP | Sample Duplicate | LRB | Laboratory Reagent Blank |
| ICB | Initial Calibration Blank | MS | Matrix Spike |
| ICV | Initial Calibration Verification standard | MSD | Matrix Spike Duplicate |
| ICSAB | Inter-element Correction Standard - A plus B solutions | PBS | Prep Blank - Soil |
| LCSS | Laboratory Control Sample - Soil | PBW | Prep Blank - Water |
| LCSSD | Laboratory Control Sample - Soil Duplicate | PQV | Practical Quantitation Verification standard |
| LCSW | Laboratory Control Sample - Water | SDL | Safety Dilution |

QC Sample Type Explanation

| | |
|-------------------------------|---|
| Blanks | Verifies that there is no or minimal contamination in the prep method or calibration procedure. |
| Control Samples | Verifies the accuracy of the method, including the prep procedure. |
| Duplicates | Verifies the precision of the instrument and/or method. |
| Spike/Fortified Matrix | Determines sample matrix interferences, if any. |
| Standard | Verifies the validity of the calibration. |

AGZ Qualifiers (Qual)

| | |
|----------|--|
| B | Analyte concentration detected at a value between MDL and PQL. |
| H | Analysis exceeded method hold time. pH is a field test with an immediate hold time. |
| R | Poor spike recovery accepted because the other spike in the set fell within the given limits. |
| T | High Relative Percent Difference (RPD) accepted because sample concentrations are less than 10x the MDL. |
| U | Analyte was analyzed for but not detected at the indicated MDL. |
| V | High blank data accepted because sample concentration is 10 times higher than blank concentration. |
| W | Poor recovery for Silver quality control is accepted because Silver often precipitates with Chloride. |
| X | Quality control sample is out of control. |
| Z | Poor spike recovery is accepted because sample concentration is four times greater than spike concentration. |

Method Reference

- (1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
- (3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
- (5) EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996.
- (6) Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995.

Qualifiers

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Soil, Sludge, and Plant matrices for inorganic analyses are reported on a dry weight basis.
- (3) Animal matrices for inorganic analyses are reported on an "as received" basis.

REP103.11.00.01

Hepworth Pawlak Geotechnical, Inc.

AGZ Project ID: L41527

| AGZ ID | WORKITEM | PARAMETER | METHOD | QUALITY OF COLLECTION |
|-----------|----------|-----------------|--------------|---|
| L41527-01 | WG157741 | Lead (TCLP) | M8010B ICP | M3 The accuracy of the spike recovery value is reduced since the analyte concentration in the sample is disproportionate to spike level. The method control sample recovery was acceptable. |
| L41527-02 | WG157741 | Lead (TCLP) | M8010B ICP | M3 The accuracy of the spike recovery value is reduced since the analyte concentration in the sample is disproportionate to spike level. The method control sample recovery was acceptable. |
| | WG157816 | Zinc (TCLP) | M8010B ICP | MA One spike recovery was outside of the method limits; the duplicate spike and the method control recoveries were within the method limits. |
| L41527-03 | WG157741 | Lead (TCLP) | M8010B ICP | M3 The accuracy of the spike recovery value is reduced since the analyte concentration in the sample is disproportionate to spike level. The method control sample recovery was acceptable. |
| | WG157816 | Zinc (TCLP) | M8010B ICP | MA One spike recovery was outside of the method limits; the duplicate spike and the method control recoveries were within the method limits. |
| L41527-04 | WG157917 | Arsenic (1312) | M8020 ICP-MS | RA Relative Percent Difference (RPD) exceeded limit; sample concentrations are less than 10x the MDL. |
| | WG157991 | Barium (1312) | M8010B ICP | RA Relative Percent Difference (RPD) exceeded limit; sample concentrations are less than 10x the MDL. |
| | WG157917 | Chromium (1312) | M8020 ICP-MS | RA Relative Percent Difference (RPD) exceeded limit; sample concentrations are less than 10x the MDL. |
| | | Lead (1312) | M8020 ICP-MS | R1 RPD exceeded the method control limit. See case narrative. |
| | WG157991 | Zinc (1312) | M8010B ICP | RA Relative Percent Difference (RPD) exceeded limit; sample concentrations are less than 10x the MDL. |
| L41527-05 | WG157917 | Arsenic (1312) | M8020 ICP-MS | RA Relative Percent Difference (RPD) exceeded limit; sample concentrations are less than 10x the MDL. |
| | WG157991 | Barium (1312) | M8010B ICP | RA Relative Percent Difference (RPD) exceeded limit; sample concentrations are less than 10x the MDL. |
| | WG157917 | Chromium (1312) | M8020 ICP-MS | RA Relative Percent Difference (RPD) exceeded limit; sample concentrations are less than 10x the MDL. |
| | | Lead (1312) | M8020 ICP-MS | R1 RPD exceeded the method control limit. See case narrative. |
| | WG157991 | Zinc (1312) | M8010B ICP | RA Relative Percent Difference (RPD) exceeded limit; sample concentrations are less than 10x the MDL. |
| L41527-06 | WG157917 | Arsenic (1312) | M8020 ICP-MS | RA Relative Percent Difference (RPD) exceeded limit; sample concentrations are less than 10x the MDL. |
| | WG157991 | Barium (1312) | M8010B ICP | RA Relative Percent Difference (RPD) exceeded limit; sample concentrations are less than 10x the MDL. |
| | WG157917 | Chromium (1312) | M8020 ICP-MS | RA Relative Percent Difference (RPD) exceeded limit; sample concentrations are less than 10x the MDL. |
| | | Lead (1312) | M8020 ICP-MS | R1 RPD exceeded the method control limit. See case narrative. |
| | WG157991 | Zinc (1312) | M8010B ICP | RA Relative Percent Difference (RPD) exceeded limit; sample concentrations are less than 10x the MDL. |
| L41527-07 | WG157741 | Lead (TCLP) | M8010B ICP | M3 The accuracy of the spike recovery value is reduced since the analyte concentration in the sample is disproportionate to spike level. The method control sample recovery was acceptable. |
| | WG157816 | Zinc (TCLP) | M8010B ICP | MA One spike recovery was outside of the method limits; the duplicate spike and the method control recoveries were within the method limits. |

Hepworth Pawlak Geotechnical, Inc.

ACZ Project ID: L41527

| ACZ ID | WORKSHEET NUMBER | PARAMETER | METHOD | QUALIFICATION |
|-----------|------------------|-----------------|--------------|---|
| L41527-08 | WG157741 | Lead (TCLP) | M6010B ICP | M3 The accuracy of the spike recovery value is reduced since the analyte concentration in the sample is disproportionate to spike level. The method control sample recovery was acceptable. MA One spike recovery was outside of the method limits; the duplicate spike and the method control recoveries were within the method limits. |
| | WG157816 | Zinc (TCLP) | M6010B ICP | |
| L41527-09 | WG157741 | Lead (TCLP) | M6010B ICP | M3 The accuracy of the spike recovery value is reduced since the analyte concentration in the sample is disproportionate to spike level. The method control sample recovery was acceptable. MA One spike recovery was outside of the method limits; the duplicate spike and the method control recoveries were within the method limits. |
| | WG157816 | Zinc (TCLP) | M6010B ICP | |
| L41527-10 | WG157917 | Arsenic (1312) | M6020 ICP-MS | RA Relative Percent Difference (RPD) exceeded limit; sample concentrations are less than 10x the MDL. RA Relative Percent Difference (RPD) exceeded limit; sample concentrations are less than 10x the MDL. RA Relative Percent Difference (RPD) exceeded limit; sample concentrations are less than 10x the MDL. RI RPD exceeded the method control limit. See case narrative. RA Relative Percent Difference (RPD) exceeded limit; sample concentrations are less than 10x the MDL. |
| | WG157991 | Barium (1312) | M6010B ICP | |
| | WG157917 | Chromium (1312) | M6020 ICP-MS | |
| | | Lead (1312) | M6020 ICP-MS | |
| | WG157991 | Zinc (1312) | M6010B ICP | |
| L41527-11 | WG157917 | Arsenic (1312) | M6020 ICP-MS | RA Relative Percent Difference (RPD) exceeded limit; sample concentrations are less than 10x the MDL. RA Relative Percent Difference (RPD) exceeded limit; sample concentrations are less than 10x the MDL. RA Relative Percent Difference (RPD) exceeded limit; sample concentrations are less than 10x the MDL. RI RPD exceeded the method control limit. See case narrative. RA Relative Percent Difference (RPD) exceeded limit; sample concentrations are less than 10x the MDL. |
| | WG157991 | Barium (1312) | M6010B ICP | |
| | WG157917 | Chromium (1312) | M6020 ICP-MS | |
| | | Lead (1312) | M6020 ICP-MS | |
| | WG157991 | Zinc (1312) | M6010B ICP | |
| L41527-12 | WG157917 | Arsenic (1312) | M6020 ICP-MS | RA Relative Percent Difference (RPD) exceeded limit; sample concentrations are less than 10x the MDL. RA Relative Percent Difference (RPD) exceeded limit; sample concentrations are less than 10x the MDL. RA Relative Percent Difference (RPD) exceeded limit; sample concentrations are less than 10x the MDL. RI RPD exceeded the method control limit. See case narrative. RA Relative Percent Difference (RPD) exceeded limit; sample concentrations are less than 10x the MDL. |
| | WG157991 | Barium (1312) | M6010B ICP | |
| | WG157917 | Chromium (1312) | M6020 ICP-MS | |
| | | Lead (1312) | M6020 ICP-MS | |
| | WG157991 | Zinc (1312) | M6010B ICP | |

Sample Receipt

Hepworth Pawlak Geotechnical, Inc.
 CHANTILLY AND EUREKA

ACZ Project ID: L41527
 Date Received: 6/6/03
 Received By: bebf

Receipt Verification

- 1) Does this project require special handling procedures such as CLP protocol?
- 2) Are the custody seals on the cooler intact?
- 3) Are the custody seals on the sample containers intact?
- 4) Is there a Chain of Custody or other directive shipping papers present?
- 5) Is the Chain of Custody complete?
- 6) Is the Chain of Custody in agreement with the samples received?
- 7) Is there enough sample for all requested analyses?
- 8) Are all samples within holding times for requested analyses?
- 9) Were all sample containers received intact?
- 10) Are the temperature blanks present?
- 11) Are the trip blanks (VOA and/or Cyanide) present?
- 12) Are samples requiring no headspace, headspace free?
- 13) Do the samples that require a Foreign Soils Permit have one?

| YES | NO | NA |
|-----|----|----|
| | | ✓ |
| | ✓ | |
| | | ✓ |
| ✓ | | |
| ✓ | | |
| ✓ | | |
| ✓ | | |
| ✓ | | |
| | ✓ | |
| | | ✓ |
| | | ✓ |
| | | ✓ |

Exceptions: If you answered no to any of the above questions, please describe

N/A

Contact (For any discrepancies, the client must be contacted)

N/A

Shipping Containers

| Cooler Id | Temp (°C) | Rad (µR/hr) |
|-----------|-----------|-------------|
| WALKIN | 19.4 | 12 |
| | | |
| | | |

Notes

ACZ Laboratories, Inc.
 2773 Downhill Drive, Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

Hepworth Pawlak Geotechnical, Inc.
 CHANTILLY AND EUREKA

ACZ Project ID: L41527
 Date Received: 6/6/03
 Received By: bethf

Sample Container Preservation

| SAMPLE | CLIENT ID | R < 2 | G < 2 | Y < 2 | YG < 2 | B < 2 | BG < 2 | O < 2 | T > 12 | P > 12 | N/A | RAD |
|-----------|----------------------|-------|-------|-------|--------|-------|--------|-------|--------|--------|-----|-----|
| L41527-01 | CHANTILLY TCLP#1 | | | | | | | | | | ✓ | |
| L41527-02 | CHANTILLY TCLP#2 | | | | | | | | | | ✓ | |
| L41527-03 | CHANTILLY TCLP#3 | | | | | | | | | | ✓ | |
| L41527-04 | CHANTILLY TRANSECT 1 | | | | | | | | | | ✓ | |
| L41527-05 | CHANTILLY TRANSECT 2 | | | | | | | | | | ✓ | |
| L41527-06 | CHANTILLY TRANSECT 3 | | | | | | | | | | ✓ | |
| L41527-07 | EUREKA TCLP #4 | | | | | | | | | | ✓ | |
| L41527-08 | EUREKA TCLP #5 | | | | | | | | | | ✓ | |
| L41527-09 | EUREKA TCLP #6 | | | | | | | | | | ✓ | |
| L41527-10 | EUREKA TRANSECT #4 | | | | | | | | | | ✓ | |
| L41527-11 | EUREKA TRANSECT #5 | | | | | | | | | | ✓ | |
| L41527-12 | EUREKA TRANSECT #6 | | | | | | | | | | ✓ | |

L41527

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5463

CHAIN of CUSTODY

Report to

| | |
|-------------------------------------|----------------------------------|
| Name: <u>Ron White</u> | Address: <u>P.O. Drawer 1887</u> |
| Company: <u>HP-Geotech</u> | <u>Silverthorne Co. 80498</u> |
| E-mail: <u>hpgeo4@hpgeotech.com</u> | Telephone: <u>970-468-1989</u> |

Copy of Report to:

| | |
|-------------------------------|---------------------------------|
| Name: <u>[Crossed out]</u> | E-mail: <u>[Crossed out]</u> |
| Company: <u>[Crossed out]</u> | Telephone: <u>[Crossed out]</u> |

Invoice to:

| | |
|-------------------------------------|----------------------------------|
| Name: <u>Attn: Ron White</u> | Address: <u>P.O. Drawer 1887</u> |
| Company: <u>HP-Geotech</u> | <u>Silverthorne Co. 80498</u> |
| E-mail: <u>hpgeo4@hpgeotech.com</u> | Telephone: <u>970-468-1989</u> |

PROJECT INFORMATION

| | |
|---|--|
| Quote #: | ANALYSES REQUESTED (attach list or use quote number) |
| Project/PO #: <u>Chantilly + Eureka Mining Claims</u> | |
| Shipping Co.: | |
| Tracking #: | |
| Reporting State for compliance testing: | |

| SAMPLE IDENTIFICATION | DATE TIME | Matrix | 1 Soils | 2 Soil - TCLP | 3 Including ABA | 4 Soil - Transect | 5 EPA 1312 | | | | | | | | | | | |
|-----------------------|------------------|--------|------------|------------------|--------------------|----------------------|---------------|--|--|--|--|--|--|--|--|--|--|--|
| Chantilly TCLP #1 | 6/5/03 @ 12:35pm | SO | 1 | X | | | | | | | | | | | | | | |
| Chantilly TCLP #2 | 6/5/03 @ 12:45pm | SO | 1 | X | | | | | | | | | | | | | | |
| Chantilly TCLP #3 | 6/5/03 @ 12:55pm | SO | 1 | X | | | | | | | | | | | | | | |
| Chantilly Transect #1 | 6/5/03 @ 12:40pm | SO | 1 | | | X | | | | | | | | | | | | |
| Chantilly Transect #2 | 6/5/03 @ 12:18pm | SO | 1 | | | X | | | | | | | | | | | | |
| Chantilly Transect #3 | 6/5/03 @ 12:10pm | SO | 1 | | | X | | | | | | | | | | | | |
| Eureka TCLP #4 | 6/5/03 @ 2:14pm | SO | 1 | X | | | | | | | | | | | | | | |
| Eureka TCLP #5 | 6/5/03 @ 2:12pm | SO | 1 | X | | | | | | | | | | | | | | |
| Eureka TCLP #6 | 6/5/03 @ 2:29pm | SO | 1 | X | | | | | | | | | | | | | | |
| Eureka Transect #4 | 6/5/03 @ 2:18pm | SO | 1 | | | X | | | | | | | | | | | | |
| Eureka Transect #5 | 6/5/03 @ 1:45pm | SO | 1 | | | X | | | | | | | | | | | | |
| Eureka Transect #6 | 6/5/03 @ 1:56pm | SO | 1 | | | X | | | | | | | | | | | | |

Matrix: SW (Surface Water) - GW (Ground Water) - WW (Waste Water) - DW (Drinking Water) - SL (Sludge) - SO (Soil) - OL (Oil) - Other (Specify)

REMARKS

Please run same lab testing ~~as~~ as run under SOIL-TCLP and SOIL-TRANSECT QUOTE #'S from Hayley Paper Dated 4/29/03.

Ron White cell # 970-418-2869

| RELINQUISHED BY | DATE TIME | RECEIVED BY | DATE TIME | PAGE |
|---------------------|-----------------------------|------------------|--------------------|------|
| <u>Daniel Bolla</u> | <u>June 6, 2003 12:00pm</u> | <u>E. French</u> | <u>6/6/03 1000</u> | |
| | | | | OF |

APPENDIX B

**CHANTILLY ADIT DRAINAGE WATER QUALITY AND SOIL AND MINE
WASTE SPLP ANALYTICAL REPORT**

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical
Report

Michael Bellitto
Golder Associates
44 Union Boulevard Suite 300
Lakewood, CO 80228

October 01, 2004

Project ID: 043-
ACZ Project ID: L47484

Michael Bellitto:

Enclosed are revised analytical reports for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on August 28, 2004 and reported on September 29, 2004. Refer to the case narrative for an explanation of for changes. This project was assigned to ACZ's project number, L47484. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan, version 10.0. The enclosed results relate only to the samples received under L47484. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after November 01, 2004. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than \$10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years. Please notify your Project Manager if you have other needs.

If you have any questions, please contact your Project Manager or Customer Service Representative.

01/Oct/04

Scott Habermehl, Project Manager, has reviewed and approved this report in its entirety.



REPAD.01.11.00.01

L47484: Page 1 of 16

Golder Associates

October 01, 2004

Project ID: 043-

ACZ Project ID: L47484

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 9 soil samples from Golder Associates on August 28, 2004. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L47484. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

This project has been revised to include an additional analysis of saturated paste pH.

Holding Times

All analyses were performed within EPA recommended holding times.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures.

AGZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487(800) 334-5493

Inorganic Analytical Results

Goldier Associates

Project ID: 043-
Sample ID: CH1

ACZ Sample ID: L47484-01
Date Sampled: 08/27/04 00:00
Date Received: 08/28/04
Sample Matrix: Soil

Metals Analysis

| Parameter | EPA Method | Result | Qual. XO | Units | MDL | PQL | Date | Analyst |
|-----------------|------------|--------|----------|-------|--------|-------|----------------|---------|
| Arsenic (1312) | M6010B ICP | | U | mg/L | 0.04 | 0.2 | 09/27/04 10:40 | wfg |
| Barium (1312) | M6010B ICP | 0.029 | | mg/L | 0.003 | 0.01 | 09/27/04 10:40 | wfg |
| Cadmium (1312) | M6010B ICP | 0.006 | B | mg/L | 0.005 | 0.02 | 09/27/04 10:40 | wfg |
| Chromium (1312) | M6010B ICP | | U | mg/L | 0.01 | 0.05 | 09/27/04 10:40 | wfg |
| Copper (1312) | M6010B ICP | | U | mg/L | 0.01 | 0.05 | 09/27/04 10:40 | wfg |
| Lead (1312) | M6010B ICP | | U | mg/L | 0.04 | 0.2 | 09/27/04 10:40 | wfg |
| Mercury (1312) | M7470 CVAA | | U | mg/L | 0.0002 | 0.001 | 09/20/04 15:53 | jjc |
| Selenium (1312) | M6010B ICP | | U * | mg/L | 0.04 | 0.2 | 09/28/04 8:47 | wfg |
| Silver (1312) | M6010B ICP | | U | mg/L | 0.005 | 0.03 | 09/27/04 10:40 | wfg |
| Zinc (1312) | M6010B ICP | 0.11 | * | mg/L | 0.01 | 0.05 | 09/27/04 10:40 | wfg |

Soil Analysis

| Parameter | EPA Method | Result | Qual. XO | Units | MDL | PQL | Date | Analyst |
|---------------------|-------------------|--------|----------|-------|-----|-----|----------------|---------|
| pH, Saturated Paste | USDA No. 60 (21A) | 6.9 | | units | 0.1 | 0.1 | 10/01/04 11:00 | as |

Soil Preparation

| Parameter | EPA Method | Result | Qual. XO | Units | MDL | PQL | Date | Analyst |
|--------------------------------------|-----------------|--------|----------|-------|-----|-----|----------------|---------|
| Saturated Paste Extraction | USDA No. 60 (2) | | | | | | 09/30/04 12:00 | as |
| Synthetic Precip. Leaching Procedure | M1312 | | | | | | 09/14/04 14:17 | es |

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487(800) 334-5493

Inorganic Analytical Results

Golder Associates

Project ID: 043-
Sample ID: CH2

ACZ Sample ID: L47484-02
Date Sampled: 08/27/04 00:00
Date Received: 08/28/04
Sample Matrix: Soil

Metals Analysis

| Parameter | EPA Method | Result | Qual | XQ | Units | MDL | PQL | Date | Analyst |
|-----------------|------------|--------|------|----|-------|--------|-------|----------------|---------|
| Arsenic (1312) | M6010B ICP | | U | | mg/L | 0.04 | 0.2 | 09/27/04 10:54 | wfg |
| Barium (1312) | M8010B ICP | 0.036 | | | mg/L | 0.003 | 0.01 | 09/27/04 10:54 | wfg |
| Cadmium (1312) | M6010B ICP | | U | | mg/L | 0.006 | 0.02 | 09/27/04 10:54 | wfg |
| Chromium (1312) | M6010B ICP | | U | | mg/L | 0.01 | 0.05 | 09/27/04 10:54 | wfg |
| Copper (1312) | M8010B ICP | | U | | mg/L | 0.01 | 0.05 | 09/27/04 10:54 | wfg |
| Lead (1312) | M8010B ICP | | U | | mg/L | 0.04 | 0.2 | 09/27/04 10:54 | wfg |
| Mercury (1312) | M7470 CVAA | | U | | mg/L | 0.0002 | 0.001 | 09/20/04 15:57 | jjc |
| Selenium (1312) | M6010B ICP | 0.04 | B | * | mg/L | 0.04 | 0.2 | 09/28/04 8:59 | wfg |
| Silver (1312) | M6010B ICP | | U | | mg/L | 0.005 | 0.03 | 09/27/04 10:54 | wfg |
| Zinc (1312) | M8010B ICP | | U | * | mg/L | 0.01 | 0.05 | 09/27/04 10:54 | wfg |

Soil Analysis

| Parameter | EPA Method | Result | Qual | XQ | Units | MDL | PQL | Date | Analyst |
|---------------------|-------------------|--------|------|----|-------|-----|-----|----------------|---------|
| pH, Saturated Paste | USDA No. 60 (21A) | 7.3 | | | units | 0.1 | 0.1 | 10/01/04 11:10 | as |

Soil Preparation

| Parameter | EPA Method | Result | Qual | XQ | Units | MDL | PQL | Date | Analyst |
|---|-----------------|--------|------|----|-------|-----|-----|----------------|---------|
| Saturated Paste Extraction | USDA No. 60 (2) | | | | | | | 09/30/04 12:10 | as |
| Synthetic Precip. Leaching Procedure | M1312 | | | | | | | 09/14/04 14:24 | as |

Golder Associates

Project ID: 043-
 Sample ID: CH3

ACZ Sample ID: **L47484-03**
 Date Sampled: 08/27/04 00:00
 Date Received: 08/28/04
 Sample Matrix: Soil

Metals Analysis

| Parameter | EPA Method | Result | Qual | XQ | Units | MDL | PQL | Date | Analyst |
|-----------------|------------|--------|------|----|-------|--------|-------|----------------|---------|
| Arsenic (1312) | M6010B ICP | | U | | mg/L | 0.04 | 0.2 | 09/27/04 11:08 | wfg |
| Barium (1312) | M6010B ICP | 0.021 | | | mg/L | 0.003 | 0.01 | 09/27/04 11:08 | wfg |
| Cadmium (1312) | M6010B ICP | | U | | mg/L | 0.005 | 0.02 | 09/27/04 11:08 | wfg |
| Chromium (1312) | M6010B ICP | | U | | mg/L | 0.01 | 0.05 | 09/27/04 11:08 | wfg |
| Copper (1312) | M6010B ICP | | U | | mg/L | 0.01 | 0.05 | 09/27/04 11:08 | wfg |
| Lead (1312) | M6010B ICP | 0.05 | B | | mg/L | 0.04 | 0.2 | 09/27/04 11:08 | wfg |
| Mercury (1312) | M7470 CVAA | | U | | mg/L | 0.0002 | 0.001 | 09/20/04 15:59 | jjc |
| Selenium (1312) | M6010B ICP | | U | * | mg/L | 0.04 | 0.2 | 09/28/04 9:12 | wfg |
| Silver (1312) | M6010B ICP | | U | | mg/L | 0.005 | 0.03 | 09/27/04 11:08 | wfg |
| Zinc (1312) | M6010B ICP | 0.02 | B | * | mg/L | 0.01 | 0.05 | 09/27/04 11:08 | wfg |

Soil Analysis

| Parameter | EPA Method | Result | Qual | XQ | Units | MDL | PQL | Date | Analyst |
|---------------------|-------------------|--------|------|----|-------|-----|-----|----------------|---------|
| pH, Saturated Paste | USDA No. 60 (21A) | 7.3 | | | units | 0.1 | 0.1 | 10/01/04 11:20 | as |

Soil Preparation

| Parameter | EPA Method | Result | Qual | XQ | Units | MDL | PQL | Date | Analyst |
|--------------------------------------|-----------------|--------|------|----|-------|-----|-----|----------------|---------|
| Saturated Paste Extraction | USDA No. 60 (2) | | | | | | | 09/30/04 12:20 | as |
| Synthetic Precip. Leaching Procedure | M1312 | | | | | | | 09/14/04 14:29 | es |

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487(800) 334-5493

Inorganic Analytical Results

Golder Associates

Project ID: 043-
Sample ID: E1

ACZ Sample ID: L47484-04
Date Sampled: 08/27/04 00:00
Date Received: 08/28/04
Sample Matrix: Soil

Metals Analysis

| Parameter | EPA Method | Result | Qual. XQ | Units | MDL | PQL | Date | Analyst |
|-----------------|------------|--------|----------|-------|--------|-------|----------------|---------|
| Arsenic (1312) | M6010B ICP | | U | mg/L | 0.04 | 0.2 | 09/27/04 11:11 | wfg |
| Barium (1312) | M6010B ICP | | U | mg/L | 0.003 | 0.01 | 09/27/04 11:11 | wfg |
| Cadmium (1312) | M6010B ICP | 0.060 | | mg/L | 0.005 | 0.02 | 09/27/04 11:11 | wfg |
| Chromium (1312) | M6010B ICP | 0.01 | B | mg/L | 0.01 | 0.05 | 09/27/04 11:11 | wfg |
| Copper (1312) | M6010B ICP | 0.08 | | mg/L | 0.01 | 0.05 | 09/27/04 11:11 | wfg |
| Lead (1312) | M6010B ICP | 2.81 | | mg/L | 0.04 | 0.2 | 09/27/04 11:11 | wfg |
| Mercury (1312) | M7470 CVAA | | U | mg/L | 0.0002 | 0.001 | 09/20/04 16:00 | jc |
| Selenium (1312) | M6010B ICP | 0.04 | B * | mg/L | 0.04 | 0.2 | 09/28/04 9:15 | wfg |
| Silver (1312) | M6010B ICP | 0.009 | B | mg/L | 0.005 | 0.03 | 09/27/04 11:11 | wfg |
| Zinc (1312) | M6010B ICP | 13.50 | * | mg/L | 0.01 | 0.05 | 09/27/04 11:11 | wfg |

Soil Analysis

| Parameter | EPA Method | Result | Qual. XQ | Units | MDL | PQL | Date | Analyst |
|---------------------|-------------------|--------|----------|-------|-----|-----|----------------|---------|
| pH, Saturated Paste | USDA No. 60 (21A) | 1.9 | | units | 0.1 | 0.1 | 10/01/04 11:30 | es |

Soil Preparation

| Parameter | EPA Method | Result | Qual. XQ | Units | MDL | PQL | Date | Analyst |
|--------------------------------------|-----------------|--------|----------|-------|-----|-----|----------------|---------|
| Saturated Paste Extraction | USDA No. 60 (2) | | | | | | 09/30/04 12:30 | es |
| Synthetic Precip. Leaching Procedure | M1312 | | | | | | 09/14/04 14:31 | es |

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487(800) 334-5483

Inorganic Analytical Results

Golder Associates

Project ID: 043-
Sample ID: E2

ACZ Sample ID: L47484-05
Date Sampled: 08/27/04 00:00
Date Received: 08/28/04
Sample Matrix: Soil

Metals Analysis

| Parameter | EPA Method | Result | Qual | XQ | Units | MDL | PQL | Date | Analyst |
|-----------------|------------|--------|------|----|-------|--------|-------|----------------|---------|
| Arsenic (1312) | M6010B ICP | | U | | mg/L | 0.04 | 0.2 | 09/27/04 11:15 | wfg |
| Barium (1312) | M6010B ICP | | U | | mg/L | 0.003 | 0.01 | 09/27/04 11:15 | wfg |
| Cadmium (1312) | M6010B ICP | 0.079 | | | mg/L | 0.005 | 0.02 | 09/27/04 11:15 | wfg |
| Chromium (1312) | M6010B ICP | | U | | mg/L | 0.01 | 0.05 | 09/27/04 11:15 | wfg |
| Copper (1312) | M6010B ICP | 0.07 | | | mg/L | 0.01 | 0.05 | 09/27/04 11:15 | wfg |
| Lead (1312) | M6010B ICP | 2.76 | | | mg/L | 0.04 | 0.2 | 09/27/04 11:15 | wfg |
| Mercury (1312) | M7470 CVAA | 0.0010 | | | mg/L | 0.0002 | 0.001 | 09/20/04 16:04 | jjc |
| Selenium (1312) | M6010B ICP | | U | * | mg/L | 0.04 | 0.2 | 09/28/04 9:18 | wfg |
| Silver (1312) | M6010B ICP | 0.007 | B | | mg/L | 0.005 | 0.03 | 09/27/04 11:15 | wfg |
| Zinc (1312) | M6010B ICP | 15.30 | | * | mg/L | 0.01 | 0.05 | 09/27/04 11:15 | wfg |

Soil Analysis

| Parameter | EPA Method | Result | Qual | XQ | Units | MDL | PQL | Date | Analyst |
|---------------------|-------------------|--------|------|----|-------|-----|-----|----------------|---------|
| pH, Saturated Paste | USDA No. 60 (21A) | 1.9 | | | units | 0.1 | 0.1 | 10/01/04 11:40 | es |

Soil Preparation

| Parameter | EPA Method | Result | Qual | XQ | Units | MDL | PQL | Date | Analyst |
|--------------------------------------|-----------------|--------|------|----|-------|-----|-----|----------------|---------|
| Saturated Paste Extraction | USDA No. 60 (2) | | | | | | | 09/30/04 12:40 | es |
| Synthetic Precip. Leaching Procedure | M1312 | | | | | | | 09/14/04 14:33 | es |

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487(800) 334-5493

Inorganic Analytical Results

Golder Associates

Project ID: 043-
Sample ID: E3

ACZ Sample ID: L47484-06
Date Sampled: 08/27/04 00:00
Date Received: 08/28/04
Sample Matrix: Soil

Metals Analysis

| Parameter | EPA Method | Result | Qual | XQ | Units | MDL | PQL | Date | Analyst |
|-----------------|------------|--------|------|----|-------|--------|-------|----------------|---------|
| Arsenic (1312) | M6010B ICP | | U | | mg/L | 0.04 | 0.2 | 09/27/04 11:18 | wfg |
| Barium (1312) | M6010B ICP | 0.047 | | | mg/L | 0.003 | 0.01 | 09/27/04 11:18 | wfg |
| Cadmium (1312) | M6010B ICP | 0.192 | | | mg/L | 0.005 | 0.02 | 09/27/04 11:18 | wfg |
| Chromium (1312) | M6010B ICP | | U | | mg/L | 0.01 | 0.05 | 09/27/04 11:18 | wfg |
| Copper (1312) | M6010B ICP | | U | | mg/L | 0.01 | 0.05 | 09/27/04 11:18 | wfg |
| Lead (1312) | M6010B ICP | 1.49 | | | mg/L | 0.04 | 0.2 | 09/27/04 11:18 | wfg |
| Mercury (1312) | M7470 CVAA | | U | | mg/L | 0.0002 | 0.001 | 09/20/04 16:05 | jc |
| Selenium (1312) | M6010B ICP | | U | * | mg/L | 0.04 | 0.2 | 09/28/04 9:22 | wfg |
| Silver (1312) | M6010B ICP | | U | | mg/L | 0.005 | 0.03 | 09/27/04 11:18 | wfg |
| Zinc (1312) | M6010B ICP | 18.40 | | * | mg/L | 0.01 | 0.05 | 09/27/04 11:18 | wfg |

Soil Analysis

| Parameter | EPA Method | Result | Qual | XQ | Units | MDL | PQL | Date | Analyst |
|---------------------|-------------------|--------|------|----|-------|-----|-----|----------------|---------|
| pH, Saturated Paste | USDA No. 60 (21A) | 3.0 | | | units | 0.1 | 0.1 | 10/01/04 11:50 | as |

Soil Preparation

| Parameter | EPA Method | Result | Qual | XQ | Units | MDL | PQL | Date | Analyst |
|--------------------------------------|-----------------|--------|------|----|-------|-----|-----|----------------|---------|
| Saturated Paste Extraction | USDA No. 60 (2) | | | | | | | 09/30/04 12:50 | as |
| Synthetic Precip. Leaching Procedure | M1312 | | | | | | | 09/14/04 14:36 | es |

| | |
|----------------|---|
| Batch | A distinct set of samples analyzed at a specific time |
| Found | Value of the QC Type of Interest |
| Limit | Upper limit for RPD, in %. |
| Lower | Lower Recovery Limit, in % (except for LCSS, mg/Kg) |
| MDL | Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations. |
| PCN/SCN | A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis |
| PQL | Practical Quantitation Limit, typically 5 times the MDL |
| QC | True Value of the Control Sample or the amount added to the Spike |
| Rec | Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg) |
| RPD | Relative Percent Difference, calculation used for Duplicate QC Types |
| Upper | Upper Recovery Limit, in % (except for LCSS, mg/Kg) |
| Sample | Value of the Sample of Interest |

| QC Sample Type | | | |
|----------------|--|-------|--|
| AS | Analytical Spike (Post Digestion) | LCSWD | Laboratory Control Sample - Water Duplicate |
| ASD | Analytical Spike (Post Digestion) Duplicate | LFB | Laboratory Fortified Blank |
| CCB | Continuing Calibration Blank | LFM | Laboratory Fortified Matrix |
| CCV | Continuing Calibration Verification standard | LFMD | Laboratory Fortified Matrix Duplicate |
| DUP | Sample Duplicate | LRB | Laboratory Reagent Blank |
| ICB | Initial Calibration Blank | MS | Matrix Spike |
| ICV | Initial Calibration Verification standard | MSD | Matrix Spike Duplicate |
| ICSAB | Inter-element Correction Standard - A plus B solutions | PBS | Prep Blank - Soil |
| LCSS | Laboratory Control Sample - Soil | PBW | Prep Blank - Water |
| LCSSD | Laboratory Control Sample - Soil Duplicate | PQV | Practical Quantitation Verification standard |
| LCSW | Laboratory Control Sample - Water | SDL | Serial Dilution |

| QC Sample Type Explanations | |
|-----------------------------|---|
| Blanks | Verifies that there is no or minimal contamination in the prep method or calibration procedure. |
| Control Samples | Verifies the accuracy of the method, including the prep procedure. |
| Duplicates | Verifies the precision of the instrument and/or method. |
| Spikes/Fortified Matrix | Determines sample matrix interferences, if any. |
| Standard | Verifies the validity of the calibration. |

| ACZ Qualifiers (Qual) | |
|-----------------------|--|
| B | Analyte concentration detected at a value between MDL and PQL. |
| H | Analysis exceeded method hold time. pH is a field test with an immediate hold time. |
| R | Poor spike recovery accepted because the other spike in the set fell within the given limits. |
| T | High Relative Percent Difference (RPD) accepted because sample concentrations are less than 10x the MDL. |
| U | Analyte was analyzed for but not detected at the indicated MDL. |
| V | High blank data accepted because sample concentration is 10 times higher than blank concentration |
| W | Poor recovery for Silver quality control is accepted because Silver often precipitates with Chloride. |
| X | Quality control sample is out of control. |
| Z | Poor spike recovery is accepted because sample concentration is four times greater than spike concentration. |

| Method References | |
|-------------------|--|
| (1) | EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983. |
| (2) | EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993. |
| (3) | EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994. |
| (5) | EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996. |
| (6) | Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995. |

| Comments | |
|----------|--|
| (1) | QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations. |
| (2) | Soil, Sludge, and Plant matrices for inorganic analyses are reported on a dry weight basis. |
| (3) | Animal matrices for inorganic analyses are reported on an "as received" basis. |

AGZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (900) 334-5493

Inorganic Extended
Qualifier Report

Golder Associates

ACZ Project ID: L47484

| ACZ ID | LABORATORY | PARAMETER | METHOD | STATUS | DESCRIPTION |
|-----------|------------|-----------------|------------|--------|--|
| L47484-01 | WG178775 | Selenium (1312) | M6010B ICP | RA | Relative Percent Difference (RPD) exceeded limit; sample concentrations are less than 10x the MDL. |
| | WG178619 | Zinc (1312) | M6010B ICP | ZG | The ICP Serial Dilution was not evaluated because the sample concentration was less than 50 times the MDL. |
| L47484-02 | WG178775 | Selenium (1312) | M6010B ICP | RA | Relative Percent Difference (RPD) exceeded limit; sample concentrations are less than 10x the MDL. |
| | WG178619 | Zinc (1312) | M6010B ICP | ZG | The ICP Serial Dilution was not evaluated because the sample concentration was less than 50 times the MDL. |
| L47484-03 | WG178775 | Selenium (1312) | M6010B ICP | RA | Relative Percent Difference (RPD) exceeded limit; sample concentrations are less than 10x the MDL. |
| | WG178619 | Zinc (1312) | M6010B ICP | ZG | The ICP Serial Dilution was not evaluated because the sample concentration was less than 50 times the MDL. |
| L47484-04 | WG178775 | Selenium (1312) | M6010B ICP | RA | Relative Percent Difference (RPD) exceeded limit; sample concentrations are less than 10x the MDL. |
| | WG178619 | Zinc (1312) | M6010B ICP | ZG | The ICP Serial Dilution was not evaluated because the sample concentration was less than 50 times the MDL. |
| L47484-05 | WG178775 | Selenium (1312) | M6010B ICP | RA | Relative Percent Difference (RPD) exceeded limit; sample concentrations are less than 10x the MDL. |
| | WG178619 | Zinc (1312) | M6010B ICP | ZG | The ICP Serial Dilution was not evaluated because the sample concentration was less than 50 times the MDL. |
| L47484-06 | WG178775 | Selenium (1312) | M6010B ICP | RA | Relative Percent Difference (RPD) exceeded limit; sample concentrations are less than 10x the MDL. |
| | WG178619 | Zinc (1312) | M6010B ICP | ZG | The ICP Serial Dilution was not evaluated because the sample concentration was less than 50 times the MDL. |

Goldar Associates
 043-

ACZ Project ID: L47484
 Date Received: 8/28/2004
 Received By:

Questions

- 1) Does this project require special handling procedures such as CLP protocol?
- 2) Are the custody seals on the cooler intact?
- 3) Are the custody seals on the sample containers intact?
- 4) Is there a Chain of Custody or other directive shipping papers present?
- 5) Is the Chain of Custody complete?
- 6) Is the Chain of Custody in agreement with the samples received?
- 7) Is there enough sample for all requested analyses?
- 8) Are all samples within holding times for requested analyses?
- 9) Were all sample containers received intact?
- 10) Are the temperature blanks present?
- 11) Are the trip blanks (VOA and/or Cyanide) present?
- 12) Are samples requiring no headspace, headspace free?
- 13) Do the samples that require a Foreign Soils Permit have one?

| | YES | NO | NA |
|---|-----|----|----|
| | | | X |
| X | | | |
| | | | X |
| X | | | |
| X | | | |
| X | | | |
| X | | | |
| X | | | |
| | | | X |
| | | | X |
| | | | X |

Exceptions: If you answered no to any of the above questions, please describe

N/A

Contact (For any discrepancies, the client must be contacted)

N/A

Shipping Containers

| Cooler Id | Temp (°C) | Rad (µR/hr) |
|-----------|-----------|-------------|
| ACZ | 14 | 18.4 |
| | | |
| | | |
| | | |

Client must contact ACZ Project Manager if analysis should not proceed for samples received outside of thermal preservation acceptance criteria.

Notes

Golder Associates
 043-

ACZ Project ID: L47484
 Date Received: 8/28/2004
 Received By:

Sample Container Preservation

| SAMPLE | CLIENT ID | R < 2 | G < 2 | Y < 2 | YG < 2 | B < 2 | BG < 2 | O < 2 | T > 12 | P > 12 | N/A | RAD |
|-----------|-----------|-------|-------|-------|--------|-------|--------|-------|--------|--------|-----|-----|
| L47484-01 | CH1 | | | | | | | | | | 0 | |
| L47484-02 | CH2 | | | | | | | | | | 0 | |
| L47484-03 | CH3 | | | | | | | | | | 0 | |
| L47484-04 | E1 | | | | | | | | | | 0 | |
| L47484-05 | E2 | | | | | | | | | | 0 | |
| L47484-06 | E3 | | | | | | | | | | 0 | |
| L47484-07 | MW1 | | | | | | | | | | 0 | |
| L47484-08 | MW2T | | | | | | | | | | 0 | |
| L47484-09 | MW2B | | | | | | | | | | 0 | |

Sample Container Preservation Legend

| Abbreviation | Description | Container Type | Preservative/Limits |
|--------------|------------------------|----------------|---------------------|
| R | Raw/Nitric | RED | pH must be < 2 |
| B | Filtered/Sulfuric | BLUE | pH must be < 2 |
| BG | Filtered/Sulfuric | BLUE GLASS | pH must be < 2 |
| G | Filtered/Nitric | GREEN | pH must be < 2 |
| O | Raw/Sulfuric | ORANGE | pH must be < 2 |
| P | Raw/NaOH | PURPLE | pH must be > 12 |
| T | Raw/NaOH Zinc Acetate | TAN | pH must be > 12 |
| Y | Raw/Sulfuric | YELLOW | pH must be < 2 |
| YG | Raw/Sulfuric | YELLOW GLASS | pH must be < 2 |
| N/A | No preservative needed | Not applicable | |
| RAD | Gamma/Beta dose rate | Not applicable | must be < 250 µR/hr |

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

LA7484

CHAIN of CUSTODY

Report to:

| | |
|-------------------------------------|------------------------------------|
| Name: <u>Mike Bellitto</u> | Address: <u>44 Union Blvd #300</u> |
| Company: <u>Golden Assoc.</u> | <u>Lakewood, CO 80228</u> |
| E-mail: <u>mbellitto@golden.com</u> | Telephone: <u>303-980-0540</u> |

Copy of Report to:

| | |
|----------|------------|
| Name: | E-mail: |
| Company: | Telephone: |

Invoice to:

| | |
|------------------------|------------|
| Name: | Address: |
| Company: <u>Golden</u> | |
| E-mail: | Telephone: |

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES
 If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified. NO

PROJECT INFORMATION ANALYSES REQUESTED (attach list or use quote number)

| | | |
|--|-----------------|---------------------|
| Quote #: <u>Spill / Surface Water</u> | # of Containers | See attached Quotes |
| Project/PO #: <u>043-</u> | | |
| Shipping Co.: <u>Fed Ex</u> | | |
| Tracking #: | | |
| Reporting state for compliance testing: | | |
| Are any samples NRC licensable material? <u>No</u> | | |

| SAMPLE IDENTIFICATION | DATE TIME | Matrix | # of Containers | |
|-----------------------|-----------|-----------|-----------------|--------------|
| 01. <u>Seep</u> | | <u>SW</u> | <u>4</u> | <u>Water</u> |
| 02. <u>CH1</u> | | <u>SO</u> | <u>1</u> | <u>Spill</u> |
| 03. <u>CH2</u> | | | <u>1</u> | |
| 04. <u>CH3</u> | | | <u>1</u> | |
| 05. <u>E1</u> | | | <u>1</u> | |
| 06. <u>E2</u> | | | <u>1</u> | |
| 07. <u>E3</u> | | | <u>1</u> | |
| <u>MW1</u> | | | <u>1</u> | |
| <u>MW2T</u> | | | <u>1</u> | |
| <u>MW2B</u> | | | <u>1</u> | |

Matrix SW (Surface Water) - GW (Ground Water) - WW (Waste Water) - DW (Drinking Water) - SL (Sludge) - SO (Soil) - CL (Oil) - Other (Specify)

REMARKS
 Please do not analyze MW1, MW2T or MW2B at this time. I will call once we have received permission from the client to analyze these 3 samples. Mike Bellitto

| REQUISITIONED BY | DATE TIME | RECEIVED BY | DATE TIME | Page |
|-------------------|------------------|---------------------|--------------------------|--------|
| <u>MWBellitto</u> | <u>8/27 3:30</u> | <u>JRT. ANTALEX</u> | <u>08/28/04 10:00 AM</u> | 1 of 1 |

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-6493

Analytical
Quote

Michael W. Bellitto
Golder Associates
44 Union Blvd. Suite 300
Lakewood, CO 80228

Page 1 of 3
8/23/2004

Quote Group: GOLDER-BRECK

Quote Number: SPOIL

Matrix: Soil 6 Mine spoil samples

| Parameter | Method | Detection Limit | Cost/Sample |
|--|------------|-----------------|-----------------------------|
| Metals Analysis | | | |
| Arsenic (1312) | M6010B ICP | 0.04 mg/L | \$7.20 |
| Barium (1312) | M6010B ICP | 0.003 mg/L | \$7.20 |
| Cadmium (1312) | M6010B ICP | 0.005 mg/L | \$7.20 |
| Chromium (1312) | M6010B ICP | 0.01 mg/L | \$7.20 |
| Copper (1312) | M6010B ICP | 0.01 mg/L | \$7.20 |
| Lead (1312) | M6010B ICP | 0.04 mg/L | \$7.20 |
| Mercury (1312) | M7470 CVAA | 0.0002 mg/L | \$14.40 |
| Selenium (1312) | M6010B ICP | 0.04 mg/L | \$7.20 |
| Silver (1312) | M6010B ICP | 0.005 mg/L | \$7.20 |
| Zinc (1312) | M6010B ICP | 0.01 mg/L | \$7.20 |
| Misc. | | | |
| Diskette Preparation and Delivery | | | \$0.00 |
| Soil Preparation | | | |
| Synthetic Precip. Leaching Procedure M1312 | | | \$54.40 |
| | | | Cost/Sample \$133.60 |

D/ P/

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical
Quote

Michael W. Ballito
Golder Associates
44 Union Blvd. Suite 300
Lakewood, CO 80228

Page 2 of 3
8/23/2004

Quote Number: SURFACE WATER

Matrix: Surface Water Surface Water: Breckenridge 1 sample

| Parameter | Method | Detection Limit | Cost/Sample |
|-----------------------------------|------------------------|-----------------|-----------------|
| Metals Analysis | | | |
| Arsenic, dissolved | M200.7 ICP | 0.04 mg/L | \$6.40 |
| Barium, dissolved | M200.7 ICP | 0.003 mg/L | \$6.40 |
| Cadmium, dissolved | M200.7 ICP | 0.008 mg/L | \$6.40 |
| Chromium, dissolved | M200.7 ICP | 0.01 mg/L | \$6.40 |
| Copper, dissolved | M200.7 ICP | 0.01 mg/L | \$6.40 |
| Lead, dissolved | M200.7 ICP | 0.04 mg/L | \$6.40 |
| Mercury, dissolved | M245.1 CVAA | 0.0002 mg/L | \$12.80 |
| Selenium, dissolved | M200.7 ICP | 0.04 mg/L | \$6.40 |
| Silver, dissolved | M200.7 ICP | 0.005 mg/L | \$6.40 |
| Zinc, dissolved | M200.7 ICP | 0.01 mg/L | \$6.40 |
| Misc. | | | |
| Diskette Preparation and Delivery | | | \$0.00 |
| Wet Chemistry | | | |
| Conductivity @25C | M120.1 - Meter | 1 umhos/cm | \$4.80 |
| Lab Filtration | SM 3030 B | | \$6.40 |
| Lab Filtration & Acidification | SM 3030 B | | \$6.40 |
| pH (lab) | M180.1 - Electrometric | 0.1 units | \$4.80 |
| Residue, Filterable (TDS) @180C | M180.1 - Gravimetric | 10 mg/L | \$7.20 |
| Cost/Sample | | | \$100.00 |

Pricing is based on standard TAT which may vary with workload.

DY PI

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical
Quote

Michael W. Bellitto
Golder Associates
44 Union Blvd. Suite 300
Lakewood, CO 80228

Page 3 of 3
8/23/2004

Quote Group: GOLDBRECK

Pricing includes shipment of all standard sample containers and related paperwork by UPS Ground Service. Please allow three to five days for delivery when ordering containers. ACZ must be notified prior to receiving samples of all special requests such as electronic data deliverables or special reporting requirements. The client will be charged for special sample containers or express shipping and additional charges may apply for non-standard requests.

This quotation is valid for six months from the bid date and must be signed and returned to ACZ before project(s) is received. The authorized signature represents acceptance of the pricing as well as the general terms and conditions of ACZ Laboratories, Inc. Our general terms and conditions can be downloaded from our web site at <http://www.acz.com/eservices/download.html>.

ACZ Representative (Authorized signature and date)

Client Representative (Authorized signature and date)

M.W. Bellitto 8-26-04

DI PF

APPENDIX C

**X-RAY FLUORESCENCE (XRF) ANALYSIS AND X-RAY DIFFRACTION (XRD)
ANALYTICAL REPORTS**



CONFIDENTIALITY STATEMENT

This facsimile transmission (and/or the documents accompanying it) may contain confidential information belonging to the sender. The information is intended only for the use of the individual or entity named below. If you are not the intended recipient, you are hereby notified that any disclosure, copying, distribution or the taking of any action in reliance on the contents of this information is strictly prohibited. If you have received this transmission in error, please immediately notify us by telephone to arrange for the return of the documents.

DENVER FAX NO. (303) 463-8267

FAX COVER SHEET

DATE: 9-8-04

DELIVER TO: Mike Bellitto
Golder

Phone: 303-985-2080

Following are 6 page(s) not including this cover sheet. If any part of this transmission is missing or poorly received, please notify us immediately at (303) 463-8270.

Special Instructions/Other Information:

Re: XRD & XRF Results

Please call Ron Schott if questions.
Thanks,

Sender: Wendy

12421 W. 49th Ave., Unit 6, Wheat Ridge, Colorado 80033
(303) 463-8270 • Fax (303) 463-8267 • (800) 852-7340

DCM Science Laboratory, Inc.
 12421 W. 49th Avenue, Unit #6
 Wheat Ridge, CO 80033 - (303) 463-8270

X-Ray Diffraction Analysis
 Page 1 of 1

| | | |
|---------------------------|-----------------|-----------------|
| Client: | Analysis Date: | 9-3-04 |
| Golder Associates | Reporting Date: | 9-3-04 |
| 44 Union Blvd., Suite 300 | Receipt Date: | 8-27-04 |
| Lakewood, CO 80228 | Client Job No.: | 043-2271 Task 2 |
| | Project Title: | Eureka Estates |
| | DCMSL Project: | GOLDER39 |

| Client Sample No.: | EP4 | EP7 | CH1 | CH2 | CH3 | EM1 | EM2 | EM3 |
|--------------------|-----|-----|-----|-----|-----|-----|-----|------|
| <u>Phase</u> | | | | | | | | |
| Quartz | 72 | 59 | 40 | 49 | 44 | 30 | 42 | 14 |
| K-Feldspar | 6 | <2* | 2 | 3 | 4 | <2* | 3 | - |
| Plagioclase | 3 | 5 | <2* | <2* | <2* | <2* | <2* | - |
| Sphalarite | - | - | - | - | - | - | - | <2** |
| Chlorite | - | - | 4 | 2 | 10 | - | - | - |
| Jarosite | - | - | 3 | 8 | 9 | 21 | 19 | 5 |
| Illite/Mica | 11 | 29 | 30 | 16 | 23 | 27 | 26 | 24 |
| Smectite | <5* | <5* | <5* | <5* | <5* | - | - | - |
| Pyrite | - | - | - | - | - | - | - | 30 |
| Geothite | - | - | 6 | 4 | <2* | 3 | - | - |
| Hematite | 2 | 3 | 2 | 2 | 2 | 6 | 2 | 1 |
| Gypsum | - | - | 6 | - | - | <2* | <2* | 20 |
| Kaolin | 3 | 2 | 3 | 14 | 6 | 11 | 5 | 4 |
| Unaccounted | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |

* May be present
 ** Identified optically

The samples were prepared for x-ray diffraction analysis and scanned over a range of 3° to 60° 2θ Cu Kα radiation, 40kV, 25mA. Mineral phases were identified with the aid of computer-assisted programs accessing a cd-rom powder diffraction database. Estimates of mineral concentrations are based on relative peak heights and reference intensity ratios (RIR) measured in-house.


 Ron Schott, Analyst

| Ident | wt % | | | | | | | | | | | | |
|---|-------------------|------|--------------------------------|------------------|-------------------------------|-------|--------|------------------|------|------------------|------|--------------------------------|------|
| | NO ₂ O | MgO | Al ₂ O ₃ | SiO ₂ | P ₂ O ₅ | S | Cl | K ₂ O | CaO | TiO ₂ | MnO | Fe ₂ O ₃ | BaO |
| L1 | 0.45 | 0.61 | 17.9 | 73.0 | 0.15 | <0.05 | <0.02 | 1.70 | 0.34 | 0.73 | 0.33 | 3.35 | 0.05 |
| L2 | 0.37 | 0.41 | 6.98 | 86.1 | 0.05 | <0.05 | <0.02 | 0.95 | 0.20 | 0.31 | 0.03 | 2.05 | 0.02 |
| L3 | 0.53 | 1.20 | 14.0 | 72.0 | 0.19 | <0.05 | <0.02 | 2.36 | 0.37 | 0.61 | 0.14 | 3.89 | 0.08 |
| L4 | 0.54 | 1.14 | 14.7 | 71.3 | 0.20 | <0.05 | <0.02 | 2.13 | 0.48 | 0.60 | 0.22 | 4.35 | 0.07 |
| L5 | 0.37 | 0.88 | 10.5 | 75.4 | 0.16 | <0.05 | <0.02 | 2.11 | 0.24 | 0.46 | 0.13 | 5.29 | 0.05 |
| L6 | 0.60 | 1.19 | 11.8 | 75.3 | 0.19 | <0.05 | <0.02 | 2.38 | 0.33 | 0.51 | 0.21 | 3.39 | 0.08 |
| L7 | 0.52 | 0.99 | 11.6 | 77.4 | 0.18 | <0.05 | <0.02 | 2.52 | 0.25 | 0.50 | 1.03 | 4.16 | 0.08 |
| L8 | 0.57 | 1.14 | 12.0 | 70.1 | 0.26 | <0.05 | <0.02 | 2.17 | 0.42 | 0.61 | 0.41 | 4.31 | 0.07 |
| L9 | 0.46 | 1.38 | 12.2 | 68.5 | 0.16 | <0.05 | <0.02 | 2.63 | 0.49 | 0.65 | 0.38 | 4.86 | 0.07 |
| L10 | 0.51 | 1.97 | 13.8 | 74.1 | 0.26 | <0.05 | <0.02 | 2.62 | 0.47 | 0.66 | 0.29 | 5.15 | 0.10 |
| L11 | 0.54 | 1.09 | 10.3 | 76.5 | 0.14 | <0.05 | <0.02 | 1.88 | 0.38 | 0.52 | 0.40 | 3.77 | 0.05 |
| L12 | 0.34 | 0.64 | 5.73 | 86.6 | 0.09 | <0.05 | <0.02 | 1.31 | 0.32 | 0.29 | 0.10 | 2.54 | 0.04 |
| L13 | 0.42 | 0.89 | 10.1 | 75.8 | 0.13 | 0.05 | <0.02 | 2.27 | 0.36 | 0.40 | 0.59 | 4.64 | 0.07 |
| L14 | 0.43 | 0.65 | 12.4 | 72.7 | 0.20 | 0.06 | <0.02 | 2.05 | 0.21 | 0.46 | 0.30 | 4.01 | 0.05 |
| L15 | 0.85 | 0.68 | 11.1 | 73.6 | 0.17 | 0.05 | <0.02 | 2.04 | 0.34 | 0.41 | 0.34 | 3.75 | 0.07 |
| L16 | 0.74 | 0.71 | 11.6 | 72.9 | 0.18 | <0.05 | <0.02 | 2.27 | 0.37 | 0.51 | 0.23 | 4.74 | 0.07 |
| L17 | 0.41 | 1.04 | 9.98 | 74.0 | 0.19 | 0.09 | <0.02 | 1.95 | 0.31 | 0.50 | 0.50 | 4.32 | 0.05 |
| L18 | 0.48 | 1.24 | 11.7 | 73.4 | 0.13 | <0.05 | <0.02 | 2.39 | 0.43 | 0.59 | 0.29 | 4.32 | 0.06 |
| L19 | 0.42 | 1.59 | 12.2 | 71.5 | 0.15 | <0.05 | <0.02 | 2.58 | 0.49 | 0.60 | 0.16 | 4.62 | 0.08 |
| L21 | 2.33 | 1.10 | 17.1 | 68.8 | 0.18 | <0.05 | <0.02 | 2.79 | 0.48 | 0.77 | 0.15 | 3.75 | 0.08 |
| L22 | 1.19 | 1.10 | 10.4 | 76.4 | 0.13 | <0.05 | <0.02 | 1.47 | 0.47 | 0.58 | 0.10 | 2.99 | 0.04 |
| EP1 | 0.07 | 0.52 | 12.0 | 77.3 | 0.13 | 0.08 | <0.02 | 3.83 | 0.03 | 0.21 | 0.67 | 4.06 | 0.09 |
| EP2 | 0.39 | 0.32 | 8.72 | 83.1 | 0.07 | 0.06 | <0.02 | 1.45 | 0.16 | 0.38 | 0.05 | 2.88 | 0.02 |
| EP3 | 1.53 | 1.44 | 18.1 | 62.8 | 0.44 | <0.05 | <0.02 | 2.99 | 1.24 | 0.80 | 0.39 | 5.50 | 0.05 |
| Quality Control - Replicate (R) samples and standard reference material (SY3) analyzed with samples | | | | | | | | | | | | | |
| L1(R) | 0.45 | 0.59 | 16.4 | 71.2 | 0.15 | <0.05 | <0.02 | 1.65 | 0.34 | 0.72 | 0.33 | 3.37 | 0.05 |
| L21(R) | 2.28 | 1.08 | 16.7 | 68.0 | 0.18 | <0.05 | <0.02 | 2.75 | 0.48 | 0.76 | 0.14 | 3.73 | 0.08 |
| SY3-XRF | 4.55 | 2.51 | 12.4 | 61.6 | 0.80 | <0.05 | <0.02 | 4.18 | 8.40 | 0.12 | 0.31 | 6.61 | 0.05 |
| SY3-known | 4.15 | 2.67 | 11.8 | 59.7 | 0.54 | 0.05 | 0.0147 | 4.20 | 8.26 | 0.15 | 0.32 | 6.45 | 0.05 |

Analysis Performed By The Mineral Lab, Inc

| Ident | PPM | | | | | | | | | | | | |
|-----------------|-----|-----|-----|----|-----|-----|------|-----|-----|------|-----|-----|-----|
| | V | Cr | Co | Mn | W | Bi | Zn | As | Sn | Pb | Nb | Sr | U |
| L1 | 61 | 80 | <10 | 14 | <10 | 17 | 244 | <20 | 52 | 215 | <10 | 148 | 19 |
| L2 | 32 | 74 | <10 | 11 | <10 | 21 | 75 | <20 | <50 | 162 | <10 | 41 | <10 |
| L3 | 66 | 62 | <10 | 17 | <10 | 27 | 411 | <20 | 68 | 195 | <10 | 88 | <10 |
| L4 | 70 | 79 | 11 | 25 | <10 | 21 | 280 | <20 | 78 | 78 | <10 | 141 | 12 |
| L5 | 57 | 61 | <10 | 13 | <10 | 38 | 621 | 51 | 98 | 1077 | <10 | 65 | 18 |
| L6 | 55 | 61 | <10 | 14 | <10 | 18 | 551 | <20 | 57 | 198 | <10 | 102 | 10 |
| L7 | 58 | 74 | 11 | 16 | <10 | 23 | 1018 | <20 | 95 | 1303 | <10 | 84 | 18 |
| L8 | 74 | 71 | <10 | 21 | <10 | 18 | 959 | <20 | 85 | 256 | <10 | 89 | <10 |
| L9 | 73 | 91 | 10 | 22 | <10 | 16 | 887 | <20 | 95 | 990 | <10 | 87 | 17 |
| L10 | 96 | 97 | 14 | 21 | <10 | 15 | 682 | <20 | 88 | 164 | <10 | 97 | <10 |
| L11 | 62 | 80 | <10 | 18 | <10 | 14 | 676 | <20 | 67 | 244 | <10 | 75 | 11 |
| L12 | 31 | 104 | <10 | 16 | <10 | 16 | 317 | <20 | <50 | 385 | <10 | 49 | <10 |
| L13 | 51 | 68 | <10 | 17 | <10 | 45 | 1711 | <20 | 92 | 2772 | <10 | 94 | 19 |
| L14 | 52 | 47 | <10 | 15 | <10 | 15 | 732 | <20 | 80 | 1060 | <10 | 82 | 10 |
| L15 | 52 | 57 | <10 | 16 | <10 | 15 | 677 | <20 | 69 | 626 | <10 | 118 | <10 |
| L16 | 59 | 111 | <10 | 18 | <10 | 27 | 733 | <20 | 82 | 690 | <10 | 169 | 15 |
| L17 | 59 | 59 | 10 | 15 | <10 | 22 | 751 | <20 | 87 | 1367 | <10 | 70 | 16 |
| L18 | 73 | 80 | 12 | 20 | <10 | 14 | 1183 | <20 | 74 | 227 | <10 | 86 | <10 |
| L19 | 69 | 74 | 12 | 19 | <10 | 12 | 655 | <20 | 77 | 226 | <10 | 75 | <10 |
| L21 | 89 | 57 | <10 | 22 | <10 | 37 | 189 | <20 | 59 | 46 | <10 | 220 | <10 |
| L22 | 53 | 72 | <10 | 19 | <10 | 46 | 254 | <20 | <50 | 30 | <10 | 107 | <10 |
| EP1 | 25 | 77 | 15 | 15 | <10 | 16 | 1663 | <20 | 77 | 851 | <10 | 34 | <10 |
| EP2 | 30 | 73 | <10 | 14 | <10 | 44 | 95 | 24 | <50 | 306 | <10 | 48 | <10 |
| EP3 | 151 | 30 | 20 | 11 | <10 | 124 | 3718 | 175 | 120 | 642 | <10 | 296 | <10 |
| Quality Control | | | | | | | | | | | | | |
| L1(R) | 64 | 80 | <10 | 19 | <10 | 16 | 247 | <20 | 55 | 211 | <10 | 150 | <10 |
| L21(R) | 93 | 58 | <10 | 21 | <10 | 37 | 188 | <20 | 61 | 45 | <10 | 219 | 15 |
| SYS-XRF | 48 | <10 | 20 | 11 | 57 | 19 | 271 | <20 | <50 | 143 | <10 | 308 | 704 |
| SYS-known | 51 | 10 | 12 | 11 | -- | 16 | 250 | 20 | -- | 150 | -- | 306 | 650 |

Handwritten notes:
 L2-L17 circled
 L13 circled
 L15 circled
 L16 circled
 L17 circled
 L18 circled
 L19 circled
 L21 circled
 L22 circled
 EP1 circled
 EP2 circled
 EP3 circled
 L1(R) circled
 L21(R) circled
 SYS-XRF circled
 SYS-known circled

Analysis Performed By The Mineral Lab, Inc

| Ident | PPM | | | | |
|-----------------|------|-----|-----|-----|-----|
| | Tb | Nb | Zr | Rb | Y |
| L1 | 30 | 19 | 415 | 81 | 45 |
| L2 | 23 | <10 | 168 | 37 | <10 |
| L3 | 15 | 13 | 282 | 114 | 26 |
| L4 | 20 | 16 | 272 | 110 | 28 |
| L5 | 41 | 10 | 233 | 98 | 21 |
| L6 | 29 | 13 | 243 | 110 | 19 |
| L7 | 45 | <10 | 260 | 117 | 24 |
| L8 | 16 | 12 | 255 | 101 | 15 |
| L9 | 37 | 11 | 285 | 132 | 24 |
| L10 | 15 | 15 | 267 | 132 | 24 |
| L11 | <10 | <10 | 265 | 85 | 12 |
| L12 | 10 | <10 | 128 | 52 | <10 |
| L13 | 71 | <10 | 196 | 99 | 29 |
| L14 | 46 | 12 | 205 | 95 | 17 |
| L15 | 30 | 11 | 203 | 86 | 19 |
| L16 | 28 | 12 | 242 | 109 | 15 |
| L17 | 37 | <10 | 257 | 82 | 17 |
| L18 | <10 | 11 | 260 | 111 | 20 |
| L19 | 17 | 12 | 292 | 122 | 18 |
| L21 | 41 | 22 | 284 | 146 | 27 |
| L22 | <10 | 13 | 392 | 81 | 20 |
| EP1 | 51 | <10 | 111 | 202 | 23 |
| EP2 | 12 | <10 | 217 | 59 | 14 |
| EP3 | 31 | 19 | 254 | 159 | 42 |
| Quality Control | | | | | |
| L1(R) | 25 | 20 | 423 | 84 | 45 |
| L21(R) | 42 | 21 | 281 | 150 | 25 |
| SY3-XRF | 1162 | 178 | 336 | 225 | 793 |
| SY3-known | 990 | 145 | 320 | 208 | 740 |

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0528

| Ident | wt % | | | | | | | | | | | | |
|--|-------------------|------|--------------------------------|------------------|-------------------------------|-------|--------|------------------|------|------------------|------|--------------------------------|------|
| | Na ₂ O | MgO | Al ₂ O ₃ | SiO ₂ | P ₂ O ₅ | S | Cl | K ₂ O | CaO | TiO ₂ | MnO | Fe ₂ O ₃ | BaO |
| EP4 | 0.26 | 0.89 | 11.4 | 80.0 | 0.09 | <0.05 | <0.02 | 2.80 | 0.55 | 0.46 | 0.25 | 3.47 | 0.09 |
| EP7 | <0.05 | 1.41 | 17.4 | 68.0 | 0.28 | <0.05 | <0.02 | 4.59 | 1.21 | 0.81 | 0.92 | 7.99 | 0.05 |
| CH1 | <0.05 | 2.83 | 15.2 | 65.9 | 0.27 | 0.95 | <0.02 | 3.76 | 1.49 | 0.58 | 0.54 | 9.77 | 0.05 |
| CH2 | <0.05 | 1.79 | 15.4 | 64.5 | 0.25 | 0.49 | <0.02 | 2.90 | 0.21 | 0.67 | 0.12 | 14.9 | 0.03 |
| CH3 | 0.07 | 6.18 | 14.4 | 64.3 | 0.21 | 0.23 | <0.02 | 3.12 | 0.42 | 0.67 | 0.17 | 10.4 | 0.06 |
| E1 | <0.05 | 0.91 | 15.7 | 47.0 | 0.32 | 2.36 | <0.02 | 3.28 | 0.40 | 0.72 | 0.11 | 26.4 | 0.05 |
| E2 | <0.05 | 0.68 | 10.4 | 66.3 | 0.21 | 2.08 | <0.02 | 2.81 | 0.08 | 1.22 | 0.07 | 14.6 | 0.06 |
| E3 | <0.05 | 1.50 | 14.3 | 48.1 | 0.16 | 9.45 | <0.02 | 3.10 | 3.61 | 0.58 | 0.18 | 23.4 | 0.04 |
| Quality Control - Replicate (R) sample and standard reference material (SY3) analyzed with samples | | | | | | | | | | | | | |
| EPA(R) | 0.25 | 0.88 | 11.3 | 79.7 | 0.09 | <0.05 | <0.02 | 2.79 | 0.56 | 0.46 | 0.25 | 3.46 | 0.09 |
| SY3-XRF | 4.46 | 2.49 | 13.0 | 63.2 | 0.80 | <0.05 | <0.02 | 4.28 | 8.46 | 0.17 | 0.31 | 6.63 | 0.05 |
| SY3-known | 4.15 | 2.67 | 11.8 | 59.7 | 0.54 | 0.05 | 0.014? | 4.20 | 8.26 | 0.15 | 0.32 | 6.45 | 0.05 |

| Ident | PPM | | | | | | | | | | | | |
|-----------------|-----|-----|-----|-----|-----|-----|------|-----|-----|-------|-----|-----|-----|
| | V | Cr | Co | Ni | W | Cu | Zn | As | Sn | Pb | Mo | Sr | U |
| EP4 | 57 | 74 | <10 | 23 | <10 | 47 | 916 | <20 | <50 | 915 | <10 | 106 | <10 |
| EP7 | 119 | 56 | 20 | 21 | <10 | 170 | 5710 | 83 | 173 | 10327 | <10 | 191 | 43 |
| CH1 | 73 | 64 | 15 | 22 | <10 | 36 | 5654 | 70 | 165 | 4008 | <10 | 89 | 21 |
| CH2 | 89 | 64 | 22 | 15 | 10 | 196 | 4887 | 253 | 234 | 12439 | <10 | 125 | 47 |
| CH3 | 79 | 66 | 21 | 28 | <10 | 83 | 4152 | 125 | 212 | 7370 | <10 | 165 | 32 |
| E1 | 145 | <10 | 30 | <10 | <10 | 94 | 7044 | 170 | 177 | 30900 | 95 | 410 | 20 |
| E2 | 82 | 63 | 14 | <10 | 23 | 21 | 1176 | 306 | 618 | 11110 | <10 | 493 | 41 |
| E3 | 58 | 48 | 25 | <10 | <10 | 53 | 6200 | 78 | <50 | 11227 | <10 | 246 | 17 |
| Quality Control | | | | | | | | | | | | | |
| EPA(R) | 57 | 75 | <10 | 24 | <10 | 47 | 913 | <20 | <50 | 911 | <10 | 102 | 15 |
| SY3-XRF | 52 | 11 | 20 | 11 | 55 | 18 | 272 | <20 | <50 | 147 | <10 | 310 | 717 |
| SY3-known | 51 | 10 | 12 | 11 | -- | 16 | 250 | 20 | -- | 130 | -- | 306 | 650 |

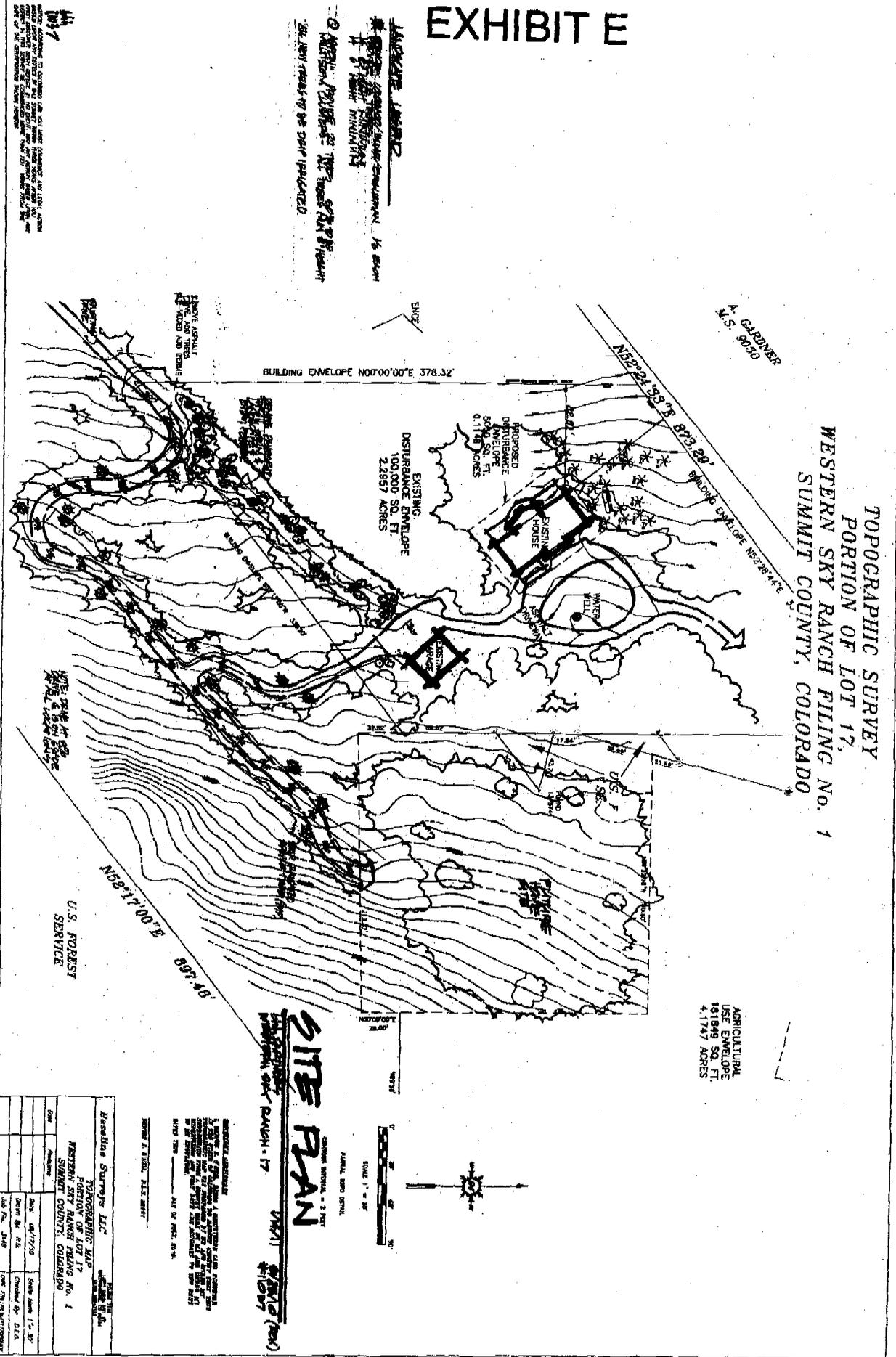
Analysis Performed By The Mineral Lab, Inc

| Ident | PPM | | | | |
|-----------------|------|-----|-----|-----|-----|
| | Th | Nb | Zr | Rb | Y |
| EP4 | 29 | <10 | 266 | 113 | 33 |
| EP7 | <10 | 14 | 327 | 213 | 60 |
| CH1 | 110 | 15 | 245 | 198 | 44 |
| CH2 | 51 | 13 | 318 | 134 | 54 |
| CH3 | 11 | 17 | 318 | 147 | 46 |
| E1 | 15 | 24 | 335 | 186 | 62 |
| E2 | 28 | 28 | 663 | 146 | 79 |
| E3 | 74 | 18 | 286 | 116 | 43 |
| Quality Control | | | | | |
| EP4(R) | 25 | <10 | 269 | 112 | 35 |
| SYS-XRF | 1154 | 177 | 341 | 226 | 821 |
| SYS-known | 990 | 145 | 320 | 208 | 740 |

Analysis Performed By The Mineral Lab, Inc

EXHIBIT E

TOPOGRAPHIC SURVEY PORTION OF LOT 17, WESTERN SKY RANCH FILING No. 1 SUMMIT COUNTY, COLORADO



AGRICULTURAL
USE ENVELOPE
101,849 SQ. FT.
4,174.7 ACRES

EXISTING
DISTURBANCE ENVELOPE
100,000 SQ. FT.
2,285.7 ACRES

BUILDING ENVELOPE N00°00'00"E 378.32'

A. GARDNER
M.S. 3020

U.S. FOREST
SERVICE

SITE PLAN



| | | | | | |
|--------------------------------|--|----------------|--|--------------------|--|
| Baseline Surveys LLC | | DATE: 08/17/20 | | SCALE: 1" = 30' | |
| TOPOGRAPHIC MAP | | DATE: 08/17/20 | | CHECKED BY: D.L.C. | |
| PORTION OF LOT 17 | | DATE: 08/17/20 | | DRAWN BY: D.L.C. | |
| WESTERN SKY RANCH FILING No. 1 | | DATE: 08/17/20 | | DATE: 08/17/20 | |
| SUMMIT COUNTY, COLORADO | | DATE: 08/17/20 | | DATE: 08/17/20 | |

THIS SURVEY WAS MADE IN ACCORDANCE WITH THE SURVEYING ACT OF 1934 AND THE SURVEYING REGULATIONS OF THE STATE OF COLORADO. THE SURVEY WAS MADE BY THE SURVEYOR AND HIS ASSISTANTS. THE SURVEY WAS MADE ON THE 17TH DAY OF AUGUST, 2020. THE SURVEY WAS MADE AT THE LOCATION OF THE SURVEY. THE SURVEY WAS MADE AT THE LOCATION OF THE SURVEY. THE SURVEY WAS MADE AT THE LOCATION OF THE SURVEY.

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