

March 16, 2014

City of Rio Dell

Jim Stretch, City Manager

675 Wildwood Ave.

Rio Dell, CA 95562

Dear Mr. Stretch;

Re. Public Records Act Request

We request documentation related to the City of Rio Dell's water property and right of way on Old Ranch Rd. (ORR)/Monument Springs, particularly in light of the stated intention to either drastically alter or completely terminate the water service to properties in that area. We understand that the City stopped using the spring on ORR in 2006 due to water quality as well as damage to the water pipeline suffered after a landslide during the winter of 2005/2006. ORR was effectively blocked by debris and the broken city water line was repaired by Rio Dell with a pipeline that lay atop the landslide (11/17/06 California Geological Survey Report). The area had been, and continues to be, an identified active earthflow within an area of historical landslides. The California Geological Survey report details the history of some slide activity, the likely contribution of the Rio Dell water pipe which had been leaking for a period of time as well as the future potential of further damage to the area by water, drainage and proposed road development. We found this survey report easily with a quick online search but have not been able to find any documentation of repairs or work done by the city to the water property. The city has recently declared the property surplus with an intention to sell it for an undisclosed sum. The value of the property would be negatively affected by a failure to repair the leaks and the water damage already done. Additionally, the lack of access to the property via a navigable right of way would presumably have a detrimental effect on the sale of that property.

The appraisal of the water property may not be required to be disclosed during the course of real property negotiations however it is subject to disclosure once the property is sold or taken off the market. We request a copy of the property appraisal that includes the Old Ranch Road water property as soon as it is legally disclosable. The city currently has other documentation related to the same property that is subject to disclosure at this time; including the assessment of the right of way and property lines.

We request any and all documentation related to the Old Ranch Road water property (Monument Springs) that is currently subject to public record laws from 2005 to current. This includes any documentation of work done to address the issues identified in the Geological Survey such as the landslide(s) that affected the right of way, the stability of the property, repairs to the water line, pumping station and/or water storage. This request includes documentation related to the survey and chain of title study conducted by Kelly-O'Hern Associates.

The situation that has resulted in the current action of the city to relocate water meters or petition LAFCo to terminate water service to the residences is clearly a matter of public interest. There is substantial documentation of the landslide risks of the area so simply grading over the slide debris, as the city stated was its intention in the 3.18.14 report to the City Council, would risk further damage to the surrounding properties without substantial repairs and stabilization to the area. As stated previously, we have not been able to locate any documentation or references to any of that work having been initiated or completed by the city since identified in 2006.

We prefer the requested documents be provided electronically to [steve@riodelltimes.com](mailto:steve@riodelltimes.com). Please let us know if any clarification of this request is needed.

Thank you,



Sharon L. Wolff



Steven L. Wolff

3 Painter St.

Rio Dell, CA 95562

[steve@riodelltimes.com](mailto:steve@riodelltimes.com)

[www.riodelltimes.com](http://www.riodelltimes.com)

enclosure



# DEPARTMENT OF CONSERVATION

## CALIFORNIA GEOLOGICAL SURVEY

2120 Campton Road • Suite E • Eureka, CALIFORNIA 95503

PHONE 707 / 441-5743 • FAX 707 /441-5748 • WEBSITE conservation.ca.gov

TO: William E. Snyder, Deputy Director for Resource Management  
California Department of Forestry and Fire Protection  
135 Ridgway Avenue  
Santa Rosa, California 95401

FROM: Mark Smelser, Certified Engineering Geologist  
Department of Conservation  
California Geological Survey  
2120 Campton Road, Suite E  
Eureka, California 95503

DATE: November 17, 2006

SUBJECT: ENGINEERING GEOLOGIC REVIEW OF TIMBER HARVESTING  
PLAN 1-06NTMP-023 HUM (Coleman/Lewis NTMP)

Dates of Inspection:

November 8, 2006

Time Spent on Review:

Field – 8 hr., Office 32 hr.

County: Humboldt

Quadrangles: Taylor Peak USGS

7.5 minute quadrangle

Timber Owners, Timberland Owners:

John and Virginia Coleman

Jeff and Laura Lewis

Area: 51.3 acres

Logging Method:

ground based and cable

Silviculture:

51.3 acres of group selection

Participants-Affiliation:

Randall Wiese – RPF (Jim Able Forestry)

David Cussins – Technician (Jim Able Forestry)

Laura Lewis (Landowner)

Beth Coleman (Landowner)

Bill Schirmann – (LTO)

Dick Schirmann – (LTO)

Steve Grantham – CDF

Bill Forsberg – CDF

Mark Smelser - CGS

Legal Description:

T1N, R1W, section 12, HB&M

Planning Watershed: Dean Creek

Calwater (v. 2.2):

1111.110103

Slope:

moderate (30%) to very steep (over 60%)

EHR: low

*The Department of Conservation's mission is to protect Californians and their environment by:  
Protecting lives and property from earthquakes and landslides; Ensuring safe mining and oil and gas drilling;  
Conserving California's farmland; and Saving energy and resources through recycling.*

Geologic Concerns:

Timber harvesting and permanent road construction in and around dormant and active landslides within the Russ fault zone as well as across easements and water pipelines owned by the City of Rio Dell.

Jennings, C.W. and Saucedo, G.J., 1994, Fault activity map of California and adjacent areas, California Geologic Data Map Series, Map No. 6: California Division of Mines and Geology, scale 1:750,000, app.

Kelsey, H.M., and Carver, G.A., 1988, Late Neogene and Quaternary tectonics associated with northward growth of the San Andreas transform fault, Northern California: *Journal of Geophysical Research*, v. 93, n. B5, pp. 4797-4819.

McLaughlin, R.J., Ellen, S.D., Blake, M.C. Jr., Jayko, A.S., Irwin, W.P., Aalto, K.R., Carver, G.A., Clarke, S.H. Jr., 2000, Geology of the Cape Mendocino, Eureka, Garberville, and Southwestern Part of the Hayfork 30 x 60 Minute Quadrangles and Adjacent Offshore Area, Northern California: USGS Miscellaneous Field Studies MF-2336, various scales, 6 plates.

Ogle, B.A., 1953, Geology of the Eel River Valley area, Humboldt County, California: California Division of Mines (now the California Geological Survey) Bulletin 164, 128 p., 6 plates, scale 1:62,500.

Scopac Geology Department (SGD), 2002, Engineering geologic report, R2D2 timber harvest plan, Humboldt County, California; unpublished report prepared for the Scotia Pacific Company, LLC, March 12, 2002, 15 p., 4 figs., contained in Timber Harvest Plan 1-02-069 HUM (R2D2) filed with the California Department of Forestry and Fire Protection.

Scotia Pacific LLC, 2002, R2D2 timber harvesting plan (1-02-069 HUM); unpublished timber harvesting plan submitted to the California Department of Forestry and Fire Protection, March 22, 2002, 201 p.

Spittler, T.E., 1982, Geology and geomorphic features related to landsliding, Scotia 7.5' Quadrangle: California Division of Mines and Geology Open File Report OFR-82-20 S.F., scale 1:24,000.

Spittler, T.E., 1984, Geology and geomorphic features related to landsliding, Taylor Peak 7.5' Quadrangle: California Division of Mines and Geology Open File Report OFR-84-36 S.F., scale 1:24,000.

Aerial Photographs Reviewed:

- 1941 U.S. Department of Agriculture, Agricultural Adjustment Agency, black and white photographs, flight CVL, frames 2B-100 and 101, nominal scale 1:24,000, dated October 30, 1941.
- 1948, U.S. Forest Service, black and white photographs, flight CDF2, frames 16-90 and 91, nominal scale 1:26,400, dated June 23, 1948.
- 1954, California Department of Natural Resources, Division of Forestry, black and white photographs, flight CVL, frames 7N-74 and 75, nominal scale 1:24,000, dated July 27, 1954.
- 1963, Humboldt County Assessor, black and white photographs, flight HC-S-2-3, frames 15A-46 and 46, nominal scale 1:12,000, dated August 15, 1963.
- 1965, U.S. Department of Agriculture, Soil Conservation Service, black and white photographs, flight CVL-27FF, frames 77 and 78, nominal scale 1:20,000, dated September 18, 1965.
- 1984, WAC Inc., black and white photographs, flight WAC-84C, frames 21-59 through 60, nominal scale 1:31,680, dated May 6, 1984.
- 1988, WAC Inc., black and white photographs, flight WAC-88CA, frames 1-130 and 131, nominal scale 1:31,680, dated March 28, 1988.
- 1996, WAC Inc., black and white photographs, flight WAC-96CA, frames 30-233 through 234, nominal scale 1:24,000, dated September 7, 1996.
- 2000, WAC Inc., black and white photographs, flight WAC-00-CA, frames 7-20 through 21, nominal scale 1:24,000, dated March 31, 2000.

Geologic Conditions:

Non-industrial timber management plan (NTMP) 1-06NTMP-023 HUM includes two adjacent harvest units proposed for moderate to steep slopes that face southeast (Figure 1). Geologic mapping by Ogle (1953) and Spittler (1984), show the proposed harvest area underlain by sedimentary rocks of the Yager terrane. These rocks dip steeply to the south and are described as highly sheared siltstone, sandstone, silty shale, mudstone, and conglomerate. Spittler (1984) also maps an older river terrace deposit (alluvial gravel) underlying the central portion of proposed harvest unit #2. McLaughlin and others (2000) have reinterpreted the geologic structure and distribution of rocks in this area and show the proposed harvest plan area to be bisected by the northwest trending Russ fault (Figure 1). The Russ fault is described as a reverse fault that dips steeply to the southwest and appears active at shallow depths (Kelsey and Carver, 1988; Jennings and Saucedo, 1994; and McLaughlin and others, 2000, p. 16). Within the plan area, McLaughlin and others (2000) show the Russ fault as the contact between the Yager terrane to the northeast and the Franciscan Complex coastal belt to the southwest. McLaughlin and others describe the Yager terrane rocks to be sheared and highly folded mudstone with minor interbeds of sandstone. They describe the

coastal belt rocks as a mélange dominated by folded and sheared argillite (weakly metamorphosed claystone). During the preharvest inspection (PHI), silty sandy soils observed in the plan area could have come from either the Coastal Belt or Yager terranes. Rounded gravels were also observed as float within the surficial earth materials and are interpreted to have been eroded out of the Yager terrane. However, no bedrock outcrops were observed that allowed for a definitive determination of one bedrock type over the other.

Landslide and geomorphic mapping conducted by Spittler (1984) in and around the proposed plan area was derived from the interpretation of stereo aerial photographs (scale: 1:24,000) taken in 1981. That mapping shows no landslides or landslide related features in or around the plan area. However, the analysis of nine sets of stereo aerial photographs (listed above) as part of this harvest plan review revealed the presence of several landslides and landslide related features in and around the proposed plan area. Earthflows and rockslides are interpreted from the aerial photographs as areas of bulging hummocky topography immediately downslope of steep and arcuate slopes. The 1941 aerial photographs were particularly useful because much of the Dean Creek watershed is denuded of trees. It is also noted that landslides immediately adjacent to the proposed plan area were mapped by the Scopac Geology Department (SGD, 2002) as part of THP 1-02-069 HUM (R2D2). The landslides and related features interpreted from the aerial photographs are depicted in Figure 2. Of particular note is that the gently sloping ground mapped as an older river terrace deposit by Spittler (1984) is reinterpreted instead to be a portion of the body of a large and dormant rotational rockslide. This rockslide includes a smaller rockslide within its interior and near the Lewis residence (Figure 2). Collectively these slides are informally identified as landslide complex A (LC-A).

Agency Questions to be Answered by Geologist:

No agency questions for the geologist were submitted.

General Observations: (keyed to Site Map, Figure 2)

1. A comparison of the THP map (THP page 21) and a 2005 aerial orthophotograph revealed some discrepancies with regard to the number of private residences in the area as well as the location of some of the existing and proposed roads (Figure 3). Figure 3 was developed by overlaying the THP map onto the USGS 7.5 minute topographic map and a 2005 orthophotograph using Monument and Old Ranch roads as the common features. Additionally, plan maps from Scotia Pacific LLC (2002) showing the watercourses are also plotted on Figure 3. As shown on Figure 3, contour lines, watercourses, residential structures, and the other roads depicted on the THP map do not align well. In particular, the Lewis residence, the proposed Unit#2 road, and the east watercourse appear to be misaligned in the range of 150 feet. From a practical standpoint, the THP map appeared to be sufficiently accurate during the PHI and would probably be sufficient to guide the harvest operations. However, in light of the landslide mapping described above and the proposed operations, significant problems arise when trying to understand the spatial relations (i.e., distances) between the landslides, springs, watercourses, residences, roads, and proposed roads. Without a more accurate depiction of the spatial relationships between the geomorphology and anthropogenic improvements, it is not possible to

fully evaluate the potential impacts that may occur in response to the proposed harvest and road construction activities.

2. The City of Rio Dell maintains an easement for a culinary-use water supply pipeline along Old Ranch Road through the proposed plan area. Near the Lewis residence is a pumping station where the water is pumped upslope to residences along Monument Road. In general, the pipeline along Old Ranch Road lies exposed along the roadway fillslope of Old Ranch Road. There are numerous leaks and repairs in the pipeline, and several small debris slide scars in the fillslope are likely related to previous pipeline breaks and or leaks.
3. There are several areas within the plan area that appear vulnerable to environmental impacts associated with timber harvest operations. This vulnerability is primarily related to either road drainage or concentration of water (either rainfall or streamflow) onto sensitive areas. CGS is concerned that group selection type harvesting (i.e., 2.5-acre clearcuts) in these sensitive areas has the potential to cause significant adverse environmental impacts. The sensitive areas are described below and are also depicted on Figure 4.

#### Site Specific Observations:

CGS-1 refers to the unstable area mapped by the RPF near the east boundary of the harvest unit along Old Ranch Road. Observations of this feature during the PHI and in the aerial photographs indicates that the active portion of this slide is significantly larger than mapped by the RPF and has been active for several decades. The most recent activity occurred during the winter of 2005/2006 and effectively blocks Old Ranch Road. It should also be noted that the recent activity appears to have broken the Rio Dell water supply pipe that has been repaired and now lies atop the landslide debris. As observed in the aerial photographs, the active earthflow appears to be a part of a larger translational/rotational rockslide that is dormant. For purposes of discussion, we identify this active earthflow and dormant rockslide as landslide complex B (LC-B). As observed during the PHI, the RPF appears to have accurately flagged the recently active portion of the earthflow. However, local geomorphic features (i.e., sharply defined down-dropped blocks within a steep bowl shaped depression) indicate that the most recently active area lies within a larger area of historical sliding.

CGS-2 refers to the proposed permanent road to be constructed through Unit #1 and which will provide a connection from Old Ranch Road to Monument Road. The grading required for this road will traverse across portions of both landslide complexes A and B (LC-A and LC-B), the Russ fault, two steep skid (currently ATV) trails, and the buried water supply pipeline. Given the residential development along Monument Road in conjunction with the existing geologic and hydrologic conditions underlying the proposed road alignment, controlling water on this road will be an important undertaking. More specifically, it appears likely that stormwater runoff from the residential areas, skid trails, and the roadway surface itself will need to be controlled to prevent concentrated discharge into the landslide complexes. Additionally, it appears likely that shallow groundwater tables associated either with the landslides and/or the Russ fault will be encountered and exposed by the grading. Typically, water seeping

from cutslopes along an all-weather road is captured in an inside ditch and conveyed downslope to an appropriate outlet. Appropriate outlet locations have not been identified and inappropriate discharge of this water could adversely impact the Lewis residence and driveway, the central portion of LC-A, or the headwater area of the east watercourse. In summary, CGS is concerned that the potentially significant impacts associated with the proposed road construction have not been fully recognized.

CGS-3 refers to the steep (greater than 65 percent) arcuate debris slide slope along the northwest property boundary. Significant tree removal from this slope will expose the ground to more rainfall that has the potential to trigger debris slides. Such slide activity could adversely impact the downslope property owner (City of Rio Dell) and or convey sediment to the nearby watercourses.

CGS-4 refers to the area of disrupted ground downslope of Old Ranch Road and between LC-A and LC-B. The USGS 7.5 minute topographic map and 1954 aerial photographs show this area to be part of an old road and therefore, this area is interpreted to be the remains of a significant deposit of fill that has settled and been eroded over the years. The fill appears to have been placed in a shallow drainage swale at the upper reaches of the east watercourse, and water draining the Old Ranch Road and upper slope areas appears likely to concentrate in this area. Additionally, leaks of the Rio Dell water pipe also appear likely to flow toward this area. Portions of the fill deposit appear to have become saturated and evidence of piping was observed during the PHI. This fill deposit lies approximately 250 feet upstream from the watercourse crossing identified as ECP-8. That crossing appears to have trapped approximately 20 cubic yards of sediment, and it appears likely that much of that sediment was eroded from the upper fill deposit. The upper fill deposit appears to have been placed directly in a drainage swale and CGS is concerned that this mass of fill has a high potential for accelerated erosion and perhaps even mass wasting if greater amounts of water are discharged to this area. It should also be noted that runoff from the proposed new Unit #1 haul road may adversely impact this site.

ECP-8 is a Class III watercourse crossing that is probably an old Humboldt type crossing. Sediment transported from upstream has accumulated behind the fill prism and resembles an alluvial fan with braided channels. The surface of this accumulated sediment is at the level of the road surface. Currently, generally unconfined water flows across the accumulated sediment surface, across the road, and then onto the fillslope that has been eroded. It is estimated that 20 cubic yards of sediment is stored behind the crossing fill prism, and combined together, the crossing and stored fill probably comprise 50 or 60 cubic yards of sediment stored in this Class III channel. Dissimilar materials (e.g., rocks, concrete blocks) have been placed in the eroded fillslope channel over the years, but the erosion has apparently continued. As proposed in the NTMP, a rocked ford will be constructed at this location. CGS is concerned that the sediment stored behind the crossing has not been addressed and that the underlying old fill materials will remain a chronic source of sediment. Additionally, the unconfined nature of the streamflow across the accumulated sediment suggest a high potential for



diversion away from the crossing. It should also be noted that runoff from both the proposed new haul roads may adversely impact this site.

ECP#9 is partially failed Class II watercourse crossing with a migrating headcut and enlarged ravine downstream. Currently the headcut is 5- to 6 feet high and locally undercut. The enlarged ravine is 15- to 20 feet wide. The channel gradient immediately upstream is relatively flat with a poorly defined channel. These observations suggest that sediment has accumulated behind the crossing. Consequently, it appears likely that if untreated, the headcut will migrate further upstream and through this deposit of accumulated sediment. Such erosion will likely deliver sediment to the Class I watercourse located approximately 400 feet downstream. As proposed in the NTMP, the fill is to be removed to allow the stream to re-establish a natural channel. CGS is concerned that a longitudinal profile through the crossing as a tool to guide the excavation has not been measured. During the PHI, the RPF and landowner expressed interest in rebuilding the crossing for future vehicle access. It should also be noted that runoff from the proposed new Unit #1 haul road may adversely impact this site.

CGS-5 is a diverted Class II watercourse that has eroded approximately 60 feet of old road and delivered sediment to the Class I watercourse located approximately 100 feet downstream. This diversion has eroded the roadway fillslope and formed a 4- to 5-foot headcut that is actively eroding the old road. Currently, the headcut is stalled at a small log that was buried in the fill. It will not be long before the log is eroded out of the fill and the headcutting will resume along the road. It is estimated that between 150 and 200 cubic yards of sediment would be eroded and delivered downstream as a result of the continued erosion of the road. Watercourse crossing diversions are explicitly addressed in the Forest Practice Rules under 923.4(n). CGS is concerned that this site has not been included as an erosion control point and no mitigation measures are proposed. It should also be noted that runoff from the proposed new Unit #1 haul road may adversely impact this site.

ECP#11 is a Class II watercourse crossing with a 9.5-foot vertical drop and much large wood at the outlet of a 24-inch culvert. This crossing is likely an old Humboldt type crossing and sediment has accumulated immediately upstream. As proposed in the plan, additional energy dissipaters are to be installed at the culvert outlet. CGS is concerned that no specific plan is provided to guide the LTO in the installation of an energy dissipater at this location.

ECP#13 is a proposed Class II watercourse crossing through a broadly depressed area. While a subtle channel does exist in this area, it is largely unconfined and appears much wider than the 18-inch culvert proposed in the plan. Additionally, adjacent areas of saturated ground suggest widely dispersed streamflow and/or a shallow groundwater table. CGS is concerned that draining this area into a single pipe may require channel excavations that lower the groundwater table and concentrate stream power at the outlet resulting in accelerated erosion. Additionally, the road constructed through this area will require an approximately 100-foot long, 5- to 8-foot high fill prism that will

bisect this area of saturated ground. Given the existing Class II habitat elements, CGS is concerned that a more detailed discussion of this crossing has not been developed.

General Recommendations:

1. The RPF shall compare and contrast their mapping with the USGS and SCOPAC mapping in conjunction with the mapping provided herewith. The RPF is also encouraged to examine the aerial photographs available for review at the California Geological Survey office in Eureka. Particular attention shall be paid to the location of the Lewis residence, the east watercourse, and the alignment of the proposed Unit #2 road. Additionally, the alignment of the western extent of Old Ranch Road from the Lewis residence to Monument Road shall be verified. Upon completion of the comparison, either the NTMP maps shall be updated or a discussion explaining the mapping discrepancies and justifying the accuracy of the existing NTMP shall be provided.
2. It would appear that maintaining the City of Rio Dell's water supply pipeline and pumping station along Old Ranch Road through the proposed plan area is not the landowner's responsibility. However, chronic leaking and breaks in the pipeline do have the potential to adversely impact the property via saturation of earth materials, mass wasting, accelerated erosion, and/or sediment delivery downstream to the Class I watercourse. The greatest potential for adverse impacts related to the pipeline appears to be: 1) along the buried section that serves the Monument Road residences, 2) the pumping station, and 3) the 600-foot section east of the pumping station. Adverse impacts to the east watercourse appear particularly likely. Consequently, all activities proposed in and around these areas as well as immediately downslope of these areas shall include recognition of the potential for adverse impacts and shall include a contingency plan to minimize impacts to the most vulnerable resources.
3. It is recommended that the sensitive areas delineated in Figure 4 be excluded from group selection type harvesting unless the area is characterized in detail by a geologist licensed in the State of California. The site characterization of these areas shall be submitted to CGS for review and concurrence a minimum of 30 days prior to the commencement of operations in those areas.

Site Specific Recommendations:

CGS-1 – As discussed during the PHI, a 25-foot equipment exclusion zone (EEZ) will be flagged around the larger area of historic landsliding as indicated by the geomorphic features. Additionally, the flag line shall be accurately plotted on the NTMP maps. Harvesting within the flagged landslide area shall be restricted to single-tree selection to the extent that the ground is protected by no less than 50 percent overstory canopy. The updated maps shall be submitted to CGS a minimum of five days prior to Second Review to allow CGS the opportunity to evaluate the new flagging and mapping on the ground.

CGS-2 – Because of the presence of LC-B and the importance of controlling the drainage along the proposed Unit#1 road, a more detailed plan of the proposed construction is required. This plan shall be prepared at a scale that will depict the

requested existing features and details of the proposed road construction plans in a manner that is clearly understandable to the agency reviewers and the LTO. The plan shall be based on a characterization of the proposed alignment along the slope that includes the limits of LC-B, the existing ATV trails, native slope angles to be traversed, rills and drainage swales, fence lines, overhead power lines, and buried pipelines. Following the slope characterization the proposed road shall be plotted along with the heights of anticipated cutslopes and fillslopes. Most importantly a detailed drainage plan shall be developed for the proposed road that anticipates cutslope seeps and potential water pipeline breaks and shows exactly where runoff will be discharged. The slope characterization and road drainage plan shall be submitted to CGS a minimum of five days prior to Second Review to allow CGS the opportunity to evaluate the plan on the ground.

CGS-3 – Because of the potential for debris sliding and related offsite impacts, it is recommended that group selection not occur on these steep slopes. It is our understanding this recommendation is consistent with the Threatened and Impaired rules set forth in the Forest Practice Rules.

CGS-4 – It is recommended that this area be flagged and delineated on the NTMP maps as an area of environmental sensitivity in which grading, harvesting, and/or drainage modifications shall be carefully planned and explicitly described. This site characterization and any proposed plans shall be submitted for agency review minimum of thirty days prior to any planned operations to allow CGS the opportunity to evaluate the plan on the ground.

ECP-8 – It is recommended that the full extent of the crossing fill and stored sediment be depicted in a sketch that includes the proposed rocked-ford design. Moreover, the potential for additional sediment accumulation behind the crossing and subsequent stream diversion shall also be discussed. This site characterization and the proposed plan shall be submitted to CGS a minimum of five days prior to Second Review to allow CGS the opportunity to evaluate the plan on the ground.

ECP#9 – Based on the PHI discussions, this crossing may be reconstructed rather than removed. In either case, it is recommended that the full extent of the crossing fill, stored sediment, migrating headcut, and enlarged gully be depicted in a sketch that includes the preferred design. If however, the crossing is to be removed, the characterization shall include a longitudinal profile with which to guide the proposed fill and accumulated sediment excavation. The longitudinal profile shall extend upstream beyond the wedge of stored sediment and shall extend downstream beyond the fillslope and recently enlarged gully. This site characterization and the proposed plan shall be submitted to CGS a minimum of five days prior to Second Review to allow CGS the opportunity to evaluate the plan on the ground.

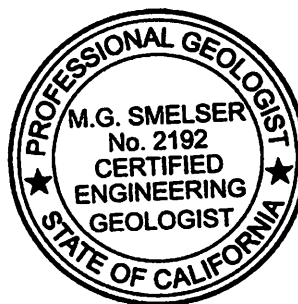
CGS-5 – It is recommended that this site be included in the NTMP as an erosion control point (ECP) and that an appropriate characterization be conducted and a mitigation plan be developed.

ECP#11 – It is recommended that that the full extent of the crossing fill and stored sediment be depicted in a sketch that includes the proposed design for energy dissipaters. A longitudinal profile through the crossing would likely assist in the design of an energy dissipater at this location.

ECP#13 – It is recommended that a more detailed description of the channel and surrounding wet area be discussed within the context of draining this area with an 18-inch culvert. Such a discussion should include a scaled sketch-map and the precise location of the culvert to be installed shall be flagged on the ground. This site characterization and the proposed plan shall be submitted to CGS a minimum of five days prior to Second Review to allow CGS the opportunity to evaluate the plan on the ground.

original signed by

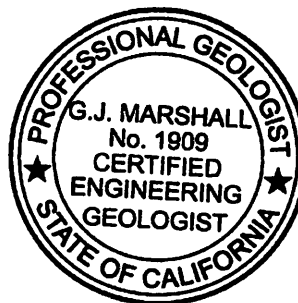
Mark G. Smelser, CEG 2192  
Certified Engineering Geologist



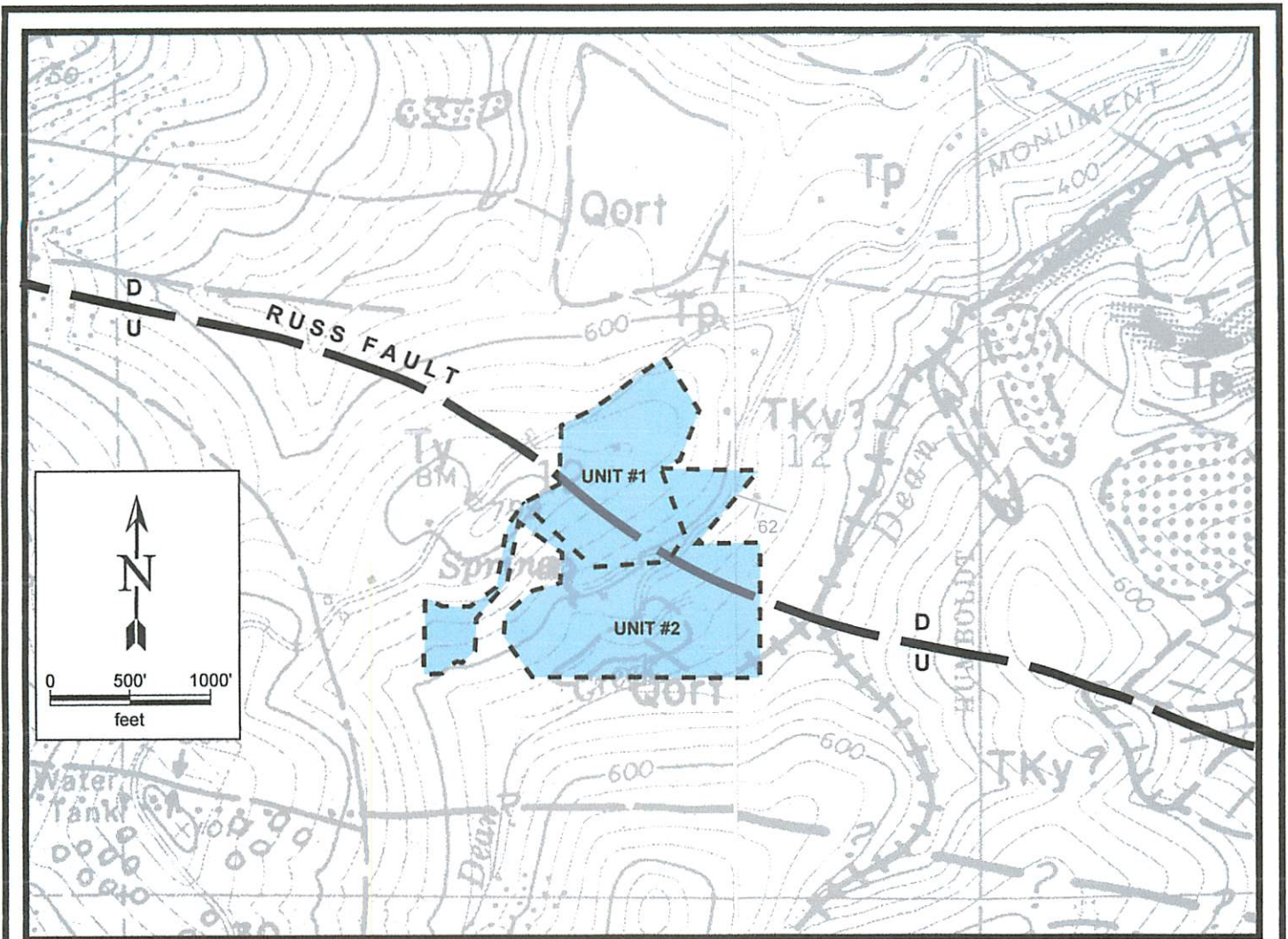
Concur:

original signed by

Date Gerald J. Marshall, CEG 1909  
Senior Engineering Geologist



Attachments: Figures 1, 2, 3, and 4



### Explanation

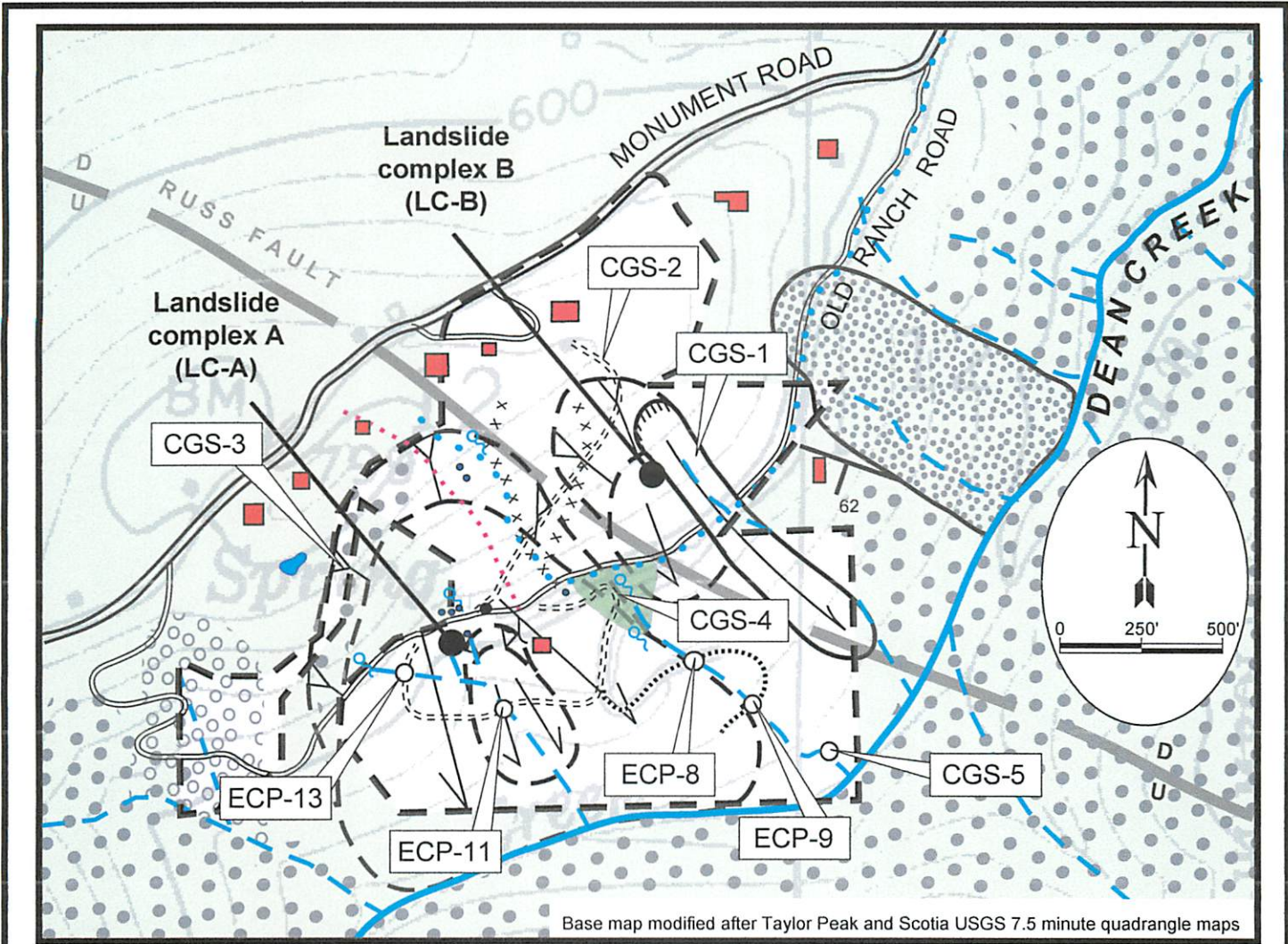
- |   |  |                              |
|---|--|------------------------------|
| Qort □ Older River terrace deposits   | Translational/rotational landslide, dashed where dormant | ● Active Landslide           |
| Tp □ Pullen Formation mudstone, diatomaceous mudstone, and local sandstone                                | Earthflow, dashed where dormant                          | Debris flow/torrent track    |
| TKy □ Yager Terrane of the Franciscan Complex (sandstone and siltstone)                                   | Debris slide   | Inner gorge                  |
| Geologic contact: dashed where approximately located, dotted where concealed, and queried where inferred. | Debris slide slope                                       | Strike and dip of bedding 75 |
| Reverse fault after McLaughlin and others (2000).   | Disrupted Ground   | Spring                       |
|   |  | Proposed harvest area        |

Base map modified after Spittler (1982, 1984) with supplemental information from McLaughlin and others (2000), and CGS (this memorandum).

Date: 11-13-06  
 Scale: 1"= 1,000'  
 Approved By:  
 CGS

Regional Geologic Map  
 To Accompany  
 Engineering Geologic Review of  
 THP 1-06NTMP-023 HUM (Coleman/Lewis NTMP)

Figure:  
 1



### Explanation

- |  |  |  |
|--|--|--|
| <ul style="list-style-type: none"> <li> Property boundary</li> <li> Paved road</li> <li> Existing permanent road</li> <li> Proposed permanent road</li> <li> Existing tractor road</li> <li> Existing ATV trail</li> <li> Rio Dell water pipeline</li> </ul> | <ul style="list-style-type: none"> <li> Structure (likely residence) from 2005 aerial photograph</li> <li> Pond</li> <li> Translational/rotational landslide, dashed where dormant</li> <li> Earthflow, dashed where dormant</li> <li> Debris slide</li> <li> Debris slide slope</li> <li> Disrupted Ground</li> </ul> | <ul style="list-style-type: none"> <li> Water tank</li> <li> Active Landslide</li> <li> Strike and dip of bedding</li> <li> Spring</li> <li> Overhead power line</li> <li> Old roadway fill deposit</li> <li> Specific site discussed in text</li> </ul> |
|--|--|--|

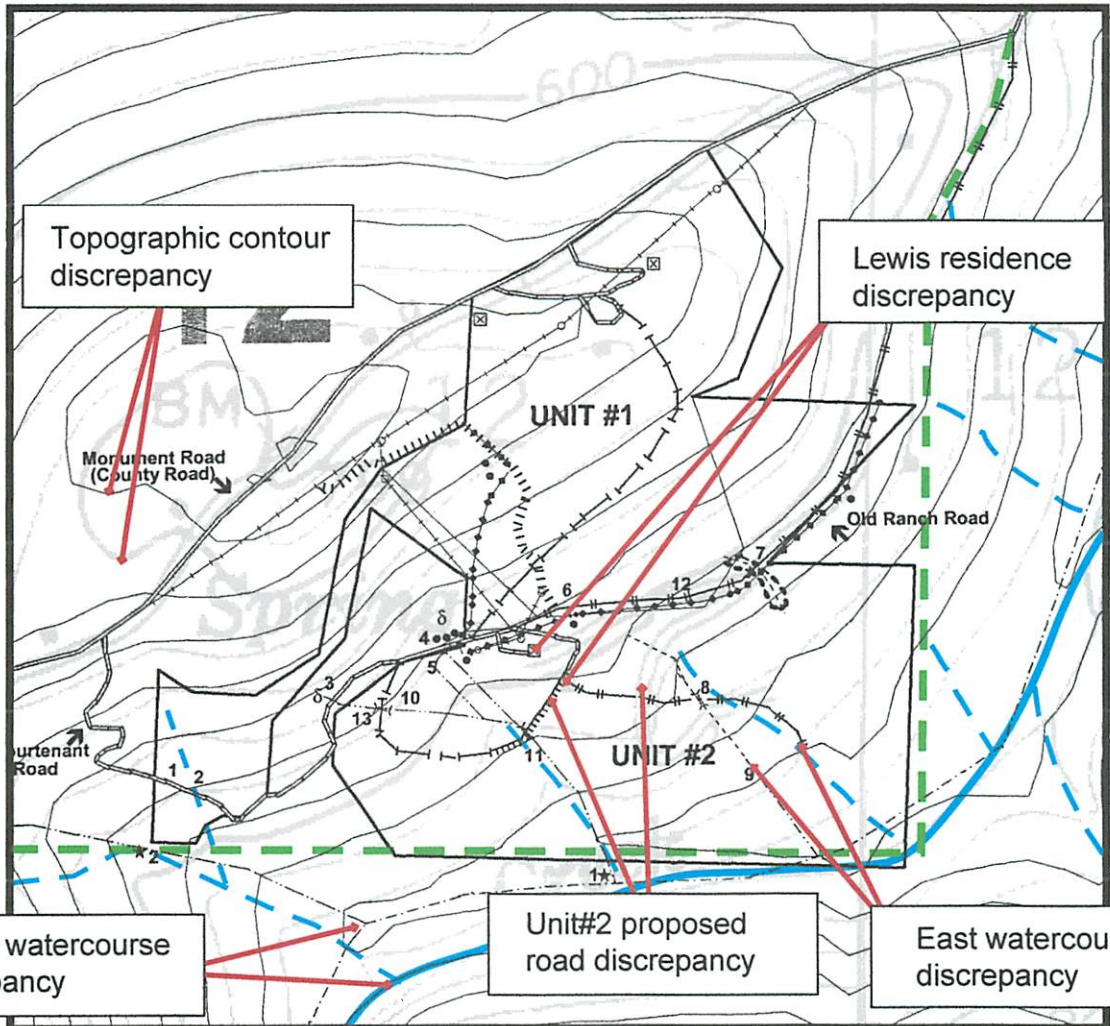
Date: 11/16/06

Scale: 1" = 500'

Approved By:  
CGS

**Site Map**  
**To Accompany**  
**Engineering Geologic Review of**  
**THP 1-06NTMP-023 HUM (Coleman/Lewis NTMP)**

Figure:  
**2**

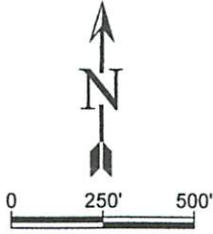


Base map is enlarged portion of Taylor Peak and Scotia USGS 7.5 minute topographic quadrangle map

Watercourses from Scotia Pacific LLC (2002)

Property line & corner from Scotia Pacific LLC (2002)

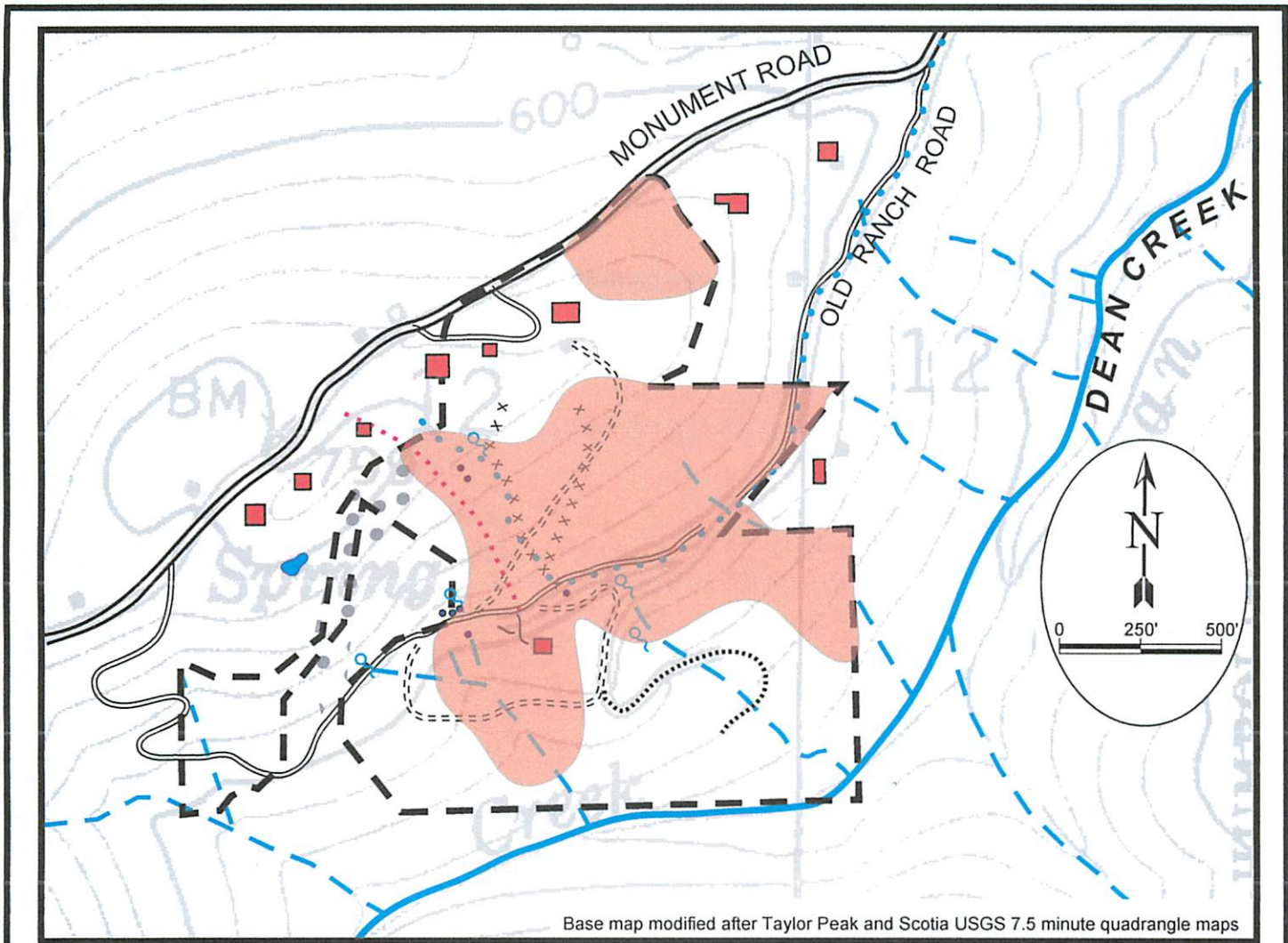
NTMP Map is shown in black overlying the USGS base map screened back in gray. Overlay was prepared with an ocular best-fit match between Monument and Old Ranch roads.



Date: 11/13/06  
 Scale: 1" = 500'  
 Approved By:  
 CDMG














Comparison of NTMP Map to USGS Base Map  
 To Accompany  
 Engineering Geologic Review of  
 THP 1-06NTMP-023 HUM (Coleman/Lewis NTMP)

Figure:  
 3



Base map modified after Taylor Peak and Scotia USGS 7.5 minute quadrangle maps

### Explanation

-  Property boundary
-  Paved road
-  Existing permanent road
-  Proposed permanent road
-  Existing tractor road
-  Existing ATV trail
-  Rio Dell water pipeline
-  Overhead power line
-  Structure (likely residence) from 2005 aerial photograph
-  Pond
-  Spring
-  Water tank
-  Geomorphically sensitive area recommended to be excluded from group selection (i.e., 2.5-acre clearcutting) unless appropriately characterized by a California licensed geologist. In general, these areas incorporate landslides, unstable fill deposits, the Rio Dell water pipeline, and steep slopes near private residences.

Date: 11/16/06	Harvesting Restrictions Map To Accompany Engineering Geologic Review of THP 1-06NTMP-023 HUM (Coleman/Lewis NTMP)	Figure:  <b>4</b>
Scale: 1" = 500'		
Approved By:  CGS		