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June 24, 2009

Ms. Catherine Kuhlman
California Regional Water Quality Control Board
North Coast Region
5550 Skylane Blvd, Suite A
Santa Rosa, CA 95403

Subject: Enrollment of THP 1-05-006 HUM (Units 1-7) in the Freshwater Creek WWDR, "Tier II"

Dear Ms. Kuhlman:

HRC is requesting Tier II enrollment under Watershed-Wide Waste Discharge Requirement (WWDR) Order No. R1-2006-0041 for units 1-7 of THP 1-05-006 HUM. These units are comprised of 46.1 acres selection, and 44.3 acres Shelterwood removal (56.4 clear-cut equivalent acres). Break down by Unit: Unit 1, 14.8 acres of group Selection (7.4 clear-cut equivalent acres), Unit 2, 7.7 acres of Selection (3.9clear-cut equivalent acres), Unit 3, 38.9 acres of Shelterwood removal and 5.8 acres Selection (32.1 clear-cut equivalent), Unit 4, 9.8 acres of group Selection (4.9 clear-cut equivalent acres), Unit 5, 1 acres of Shelterwood removal (0.8 clear-cut equivalent),Unit 6, 8 acres of group Selection (4.0 clear-cut equivalent acres), Unit 7, 4.4 acres of Shelterwood removal (3.3 clear-cut equivalent). Total acres currently enrolled or proposed for enrollment under Order No. R1-2006-0041 Tier II is shown in the Attached Pre-Harvest Planning Report provided by Forester, Mr. Wayne Rice. The Erosion Control Plan (ECP), Form 200 and an annual waste discharge enrollment fee are attached.

Landslide risks associated with this plan were evaluated in compliance with the Freshwater Creek and Elk River WWDR Permit Acreage Enrollment and Compliance Monitoring Program Quality Assurance Project Plan (Version 2.0, September 1, 2006) approved by the Executive Officer of the North Coast Regional Water Quality Control Board. This approach uses commonly accepted standards for geologic practices in forest management (Sidle et al. 1985, Soeters and Van Western 1996, and Sidle and Ochiai 2006) to assess factors known to contribute to landslides, such as steepness of slope, slope convergence, hydrology, geologic features, and visibly unstable areas. Overlapping and complementary scientific techniques combining state-of-the-art digital elevation model (DEM) slope stability models, field investigation, and terrain analysis were used in this assessment.

In summary the THP is the rites to timber held on a block of land owned by the Eureka Garbage Co. The THP includes 7 polygons (referred to as Units in the THP) that share common boundaries and exercise different silvicultures. The THP does not implement the HCP watercourse prescriptions. The THP is underlain by the Wildcat Group sediments and possibly the Hookton Formation. The sediments are comprised of well consolidated (Wildcat Grp.) and moderate to poorly consolidated (Hookton Fm.) sands and silts. Deep seated mass wasting underlying Units 1 through 6 is dormant mature to relic in activity status. The THP approved silvicultures included clearcut, group selection, and Shelterwood removal. Throughout the Tier II review, the silviculture was evaluated with respect to slope stability. As such, and with a new uneven aged management strategy, the clear cut units are being amended to Group Selection. No other silvicultures or yarding methods were amended due to

their partial harvesting status and limited, resultant increase in mass wasting potential. The units that are being amended are Units 1, 4, and 6. The Forester has implemented WLPZ for the Class II watercourse and a Class III RMZ that prohibits the placement of groups adjacent to watercourses. Aggressive legacy harvest activities resulted in mass wasting that was commonly located adjacent the watercourses. Those entities are mitigated by the development of WLPZ and RMZ and subsequent low impact allowed harvest activities, the retention of timber throughout the landscape, and the application of yarding systems that are low impact and compatible with the site conditions. It is our opinion that this THP meets the requirements for Tier II enrollment.

The THP proposes an uneven-age and Shelterwood Removal silviculture retaining 75 sqft of basal area in Selection areas and 100sqft of basal area or 100 4" diameter trees per acre in the Shelterwood Removal areas. Sub-merchantable trees and those with specific wildlife value characteristics (e.g., cavities, large limbs, broken tops, snags, etc.) will be retained within the harvest area to the extent feasible. Ground based and Cable yarding are approved for the entire unit. Post-harvest no site preparation will occur.

For reasons other than slope stability units 1, 4 and 6 are being changed from clearcut to group selection maintaining 75sqft basal area. No other changes are needed to this THP unit in order to meet the Tier II enrollment requirements.

I hereby certify that I have reviewed this THP and have found no new additional sediment discharge sources developed since the previously published Erosion Control Plan.

Greater detail regarding this landslide hazard assessment is provided in the attached *THP Unit Review for Tier 2 Enrollment*. The licensed geologist involved with the Tier 2 landslide risk evaluation has concluded the proposed harvest operation, if implemented as planned and approved, will result in a negligible increase in potential for post-harvest landsliding; and thereby meets the applicable Zero Delivery of landslide related sediment performance standards of NCRWQCB Orders R1-2006-0041 and R1-2008-0071.

Please do not hesitate to contact me should you have any questions or comments regarding this application for enrollment into WWDR (Order No. R1-2006-0041).

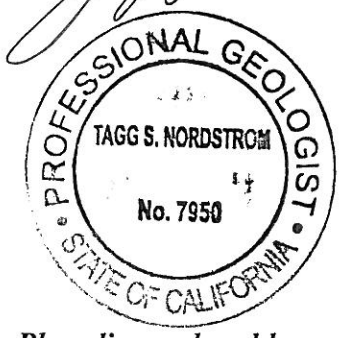
Respectfully,

Jon Woessner,
North Area Forester
Humboldt Redwood Company, LLC

Attachments:
Professional Certification of Design
THP Unit Review for Tier II enrollment
Pre-harvest Planning Report
Enrollment Fee
Form 200
Unit Specific ECP
Maps

Professional Certification of Design

I, _____, P.G. 7950, 6/25/09,
Signature license # Date



Place licensed seal here

hereby certify, in accordance with North Coast Regional Water Quality Control Board (NCRWQCB) Order Nos. R1-2006-0039 and R1-2006-0041, that the attached application and the description of THP modifications, and the materials submitted along with:

THP No. 1-05-006 HUM (City Dump) Unit # 1 through 7

a. are in accordance with accepted practices, and recognized professional standards;
b. comply with the requirements of the Monitoring and Reporting Program No. R1-2006-0103, approved by the Executive Officer of the North Coast Regional Water Quality Control Board; and
c. provided that the THP is properly implemented, operated, and maintained, are adequate for the THP to meet the applicable Zero Net Delivery performance standards of NCRWQCB Orders R1-2006-0039, R1-2006-0041, and R1-2006-0103, insofar as such performance can reasonably be predicted by accepted engineering geologic practices.

The opinions presented in the subject THP have been developed using that degree of care and skill ordinarily exercised, under similar circumstances, by reputable engineering geologists practicing in this or similar localities. No other warranty, expressed or implied, is made as to the professional advice included in this report.

THP: City Dump THP 05-006 Units # 1 through 7 6-25-09

Tools Used in This Assessment	Figure Number
Elevation Map with 10 ft Contours (HRC LiDAR)	1
SHALSTAB (Montgomery and Dietrich, 1994 and Palco, 2006) / Slope Class / Hillshade Maps	2
CGS Geology and Geomorphic Features (CGS, 1999)	3
Mass Wasting Potential Map (HRC, 1999)	4
Aerial Photo Map (HRC, 2007)	5
HRC Freshwater Creek WA deep-seated LS inventory (HRC, 2001)	6
Road Condition Map	7

Please see back of enrollment for references

Summary of Changes to THP Prescriptions Based on Tier II Analysis in this Unit:

Geologic Review	Forestry Silviculture/Site Prep Plan	Operational Design Plan
1-1	Change. For reasons other than slope stability hazard, silviculture is now group selection with a retention minimum of 75 ft^2. No site preparation will occur due to partial harvesting.	No change to approved yarding methods.
2-1	No Change. The THP approved Group Selection retaining 75 ft^2 of basal area is appropriate.	No change to approved yarding methods.

3-1	No Change. The THP approved Shelterwood Removal silviculture retaining 100 ft^2 basal area or 100 trees > 4 inches is appropriate.	No change to approved yarding methods.
4-1	Change. The silviculture has been amended from clearcut to Group Selection with a retention standard of 75 ft^2 of basal area per acre. No site preparation will occur due to partial harvesting.	No change to approved yarding methods.
5-1	No Change. The THP approved Shelterwood Removal silviculture retaining 100 ft^2 basal area or 100 trees > 4 inches is appropriate.	No change to approved yarding methods.
6-1	Change. The silviculture has been amended from clearcut to Group Selection with a retention standard of 75 ft^2 of basal area per acre. No site preparation will occur due to partial harvesting.	No change to approved yarding methods.
7-1	No Change. The THP approved Shelterwood Removal silviculture retaining 100 ft^2 basal area or 100 trees > 4 inches is appropriate.	No change to approved yarding methods.

Geological Summary (information presented from existing bodies of work):

This THP is an isolated block of timber rights owned by HRC that exists outside of our contiguous Freshwater Holdings and is not included within the HCP. The THP includes all of acres within that block. The block has been divided into 7 polygons (described and delineated as units within the THP) that utilize common boundaries and vary in silviculture. This review treats each Harvest Unit as a single Polygon.

The harvest units occupy the flanking slopes of young, recently eroded watercourses within recently uplifted marine sediments. The underlying bedrock is the lower unit of the Wildcat Group (CGS, 1999: Figure 3). The formation is comprised of silts and sands in moderate consolidation. Slope morphology is typically steep, marginally planar, and slightly incised by low order tributaries. 2005 review by the same CGS author considered the upper elevations of the slopes (ridgetops) to be underlain by the Hookton Fm. The Hookton is a very young formation that is consistent with the depositional environment of an estuary. The textures are very similar to those of the Wildcat Group; however, the degree of consolidation appears less resulting in lower slope inclination to maintain stability (exhibited by well rounded ridgetops).

Figure 3 essentially maps the entire block to be underlain by a large dormant rock slide. Debris slide slope / source areas are mapped throughout the block and coincident with the steeply inclined side slopes to watercourses.

Figure 6 (Watershed Analysis) mapping shows the same landslide mapped in Figure 3 and assesses a low hazard for reactivation.

Review of Figure 2 (Hillslope Shade) shows five relatively uniform north-northeast trending watercourses with similar incision depths, texture, and drainage area. The mapped deep seated landslide is not represented in the slope morphology. Should the failure exist, the depth of incision by the numerous watercourses suggest dormant mature to relic activity status.

A review of existing geologic information and disclosure of potentially unstable areas was conducted for the THP. The Forester identified several unstable areas as did CGS during PHI. These areas were all included within no harvest portions of the WLPZ.

The harvest unit was evaluated at the THP level with respect to clearcut and Shelterwood removal silviculture. As mandated by new management, the clearcut silviculture has changed to group selection with 75 sq. feet of basal area retention per acre. This change is not in response to perceived high slope stability hazard, however, the retention of timber on the slopes further reduces the potential for harvest related mass wasting.

No Class I watercourses are located within the units. Class II watercourses are mitigated with a Watercourse and Lake Protection Zone (WLPZ). The zone measures between 50 and 100 feet dependent upon slope inclination (100 ft where slopes are > 50%). Harvest is permitted within this zone with a post harvest retention standard of 75% canopy closure.

Class III watercourses are mitigated by a Forester imposed 50' RMZ where side slopes greater than 50% exist and maintaining 75 sq. ft of

evenly distributed basal area in the buffer. Where side slopes are less than 50% employ a 25' RMZ that maintains 75 sq. ft of basal area evenly distributed in the buffer and no group opening greater than ¼ acre immediately above the terminus of class III with slopes greater than 40% or immediately above a headwall swale. Additionally sub-merchantable trees and those with specific wildlife value characteristics (e.g., cavities, large limbs, broken tops, snags, etc.) will be retained within the harvest area to the extent feasible.

One short segment of new road construction is proposed within this harvest plan. The THP includes both cable and ground based yarding. A significant portion of the harvest unit has experienced ground based harvesting before and includes a dense skid trail network. Where feasible and outside of WLPZ and RMZ, the network will be utilized again.

THP Unit: # 1
Polygon: 1-1

A) General Observations

The harvest unit is bound to the west, north and east by property lines. The property lines roughly correlate with ridgetops. The southern boundary trends east –west and likely defines a different maturity, density, or stand component change.

Slope morphology within the unit is broadly concave with slope inclinations between 0 to 50% (mostly 20 to 30%).

No watercourses are located within the unit. The southern 1/3 of the unit represents the left lateral scarp of the landslide mapped on Figures 3 and 6. The slope is very subdued with respect to mass wasting morphology.

Shalstab value 2 is located in the northwestern corner of the unit. This occurs on north facing slopes that drain away from the unit. The designation is limited to individual pixels.

Figure 3 debris slide slope / source areas are mapped in the northeastern corner of the unit coincident with the slopes that drain away from the unit.

Mass Wasting Potential (MWP) modeling suggests a regional low hazard rating. Moderate hazard has been identified for the northwestern

A) General Observations

corner if the unit and an additional encroachment in the southwest.

The stand is predominantly redwood and fir with occasional hardwoods. The area has been extensively ground based logged. A dense network of skid roads is visible throughout the unit and will be utilized where appropriate for this harvest.

B) Harvest Related Impacts and Hillslope Sensitivity

This unit was originally approved for clearcut harvest. As such, the original THP evaluated the slope stability conditions in response to clear cut activities. The proposed group selection with a retention standard of 75 ft^2 of basal area represents a less significant impact to slope stability than clear cut harvesting.

A mass wasting response to the previous harvests was not observed. This includes the northwestern corner of the unit where the Shalstab Value 2, the debris slide slope / source areas, and the moderate MWP are located. The portion of those mapped or modeled entities within the unit that are proposed for harvest is minor, therefore reducing the overall impact to the entity.

Based on our evaluation, the gentle to moderate inclination of the slopes altered by the initial harvest forest removal and skid trail network construction retain a relatively high stability threshold. A threshold that exceeds the more impactive practices conducted under legacy logging activities. The activities proposed in this harvest plan equate to less of an impact than a clearcut and, since mass wasting has not been a response to more aggressive logging impacts, we do not anticipate a mass wasting response to this harvest.

C) Forestry / Silviculture Plan

The Unit silviculture has been amended to Group Selection with retention of 75 square feet of basal area per acre. This change is a management decision to convert the stand management from even aged to uneven aged. This change does represent a change in response to perceived slope instability.

Site preparation has been changed to none.

D) Operational Design Plan
THP approved yarding method is ground based utilizing the existing skid road network. We did not find reason to change the yarding methods as approved in the THP.

THP Unit: # 2
Polygon: 2-1

A) General Observations
The harvest unit essentially occupies the adjacent flanking slopes of a Class II watercourse. The boundary follows a haul road to the west, the southern boundary of Unit 1 to the north, a property line to the east, and by the Forester's discretion to the south. The Class II watercourse trends east-northeast and is prominently incised. The watercourse includes two Class II / III tributaries to the south and three Class III tributaries. The Forester has implemented the WLPZ and Class III RMZ for the watercourses. Due to existing instability and limited ability to harvest and retain 75% canopy closure, a significant portion of the Class II WLPZ has been flagged with no harvest flagging. A deep, typically steeply inclined swale defines the slope morphology of the unit. Slope inclinations are typically between 40 and >60%. The deep incision of the channel within the surrounding mapped deep seated landslide (Figure 3 and 6) suggest an activity status of dormant mature or older. The watercourses within the unit are typically straight in alignment with gentle (20-30%) to moderate (40-50%) gradients. One pixel of Shalstab Value 1 is located within the unit. This area is located along the north bank, upslope of the WLPZ and atop slopes inclined between 40 and 50%. Value 2 Shalstab is located throughout the unit in assemblages of pixels numbering to three. The majority of the Value 2 Shalstab is located upslope of the Class II WLPZ. Also, very few pixels of the Value 2 are located within the no harvest portion of the Class II WLP. MWP modeled for the unit is predominantly moderate with a small area of high extending into unit from the eastern Class II Tributary.

A) General Observations

Figure 3 debris slide slope / source areas are mapped in the southwestern corner of the unit. The mapping correlates with moderate to steeply inclined slopes that form the concave slopes delineating the headwaters of the main Class II watercourse.

The mass wasting response to previous harvests was minimal. Mass wasting was observed during THP development adjacent the main Class II tributary on the north bank. The area was removed from harvest. CGS (2005) also identified a very small stream bank failure within the no harvest portion of the Class II WLPZ.

The large area of no harvest located along the southern bank and extending nearly to the ridge (located central to the unit) is in response to overlapping Class II WLPZ that the Forester elected not to harvest. The stand is predominantly redwood and fir with occasional hardwoods. This unit was originally approved for Group Selection harvest with a 75 ft^2 basal area per acre retention. This has not changed. Please note that where within the harvestable WLPZ, the mitigation is to leave 75% canopy closure.

The unit is proposed for cable yarding from the upslope haul roads.

B) Harvest Related Impacts and Hillslope Sensitivity

The mass wasting response to the previous harvests appears to be limited to where adjacent the watercourse channels. This harvest proposes either no harvest or a very minimal harvest (75% canopy closure retention) where adjacent the Class II watercourses.

Numerous locations of mapped or modeled hazard is located within the unit, however the lack of landslides coincident with these areas possibly suggests a higher inherent stability to the slopes than predicted for modeling purposes. In either case, the Group Selection, WLPZ selection, and the no harvest represent an overall impact that is anticipated to be less than the previous harvests. The utilization of cable yarding should limit the potential for ground disturbance that may lead to instability.

Hillslope sensitivity with respect to mass wasting as a result of timber harvesting appears relatively low.

It is our opinion that the proposed harvest with implemented mitigations represents an insignificant increase in the potential for mass wasting.

C) Forestry / Silviculture Plan

The approved silviculture for the unit has not been changed. The Group Selection will retain 75 ft^2 of basal area per acre.

D) Operational Design Plan

THP approved yarding method is cable with a small area of ground based logging located within the WLPZ for the southern and eastern Class II tributary. This is actually a long-line zone. WLPZ are also an equipment exclusion zone prohibiting the use of vehicles within it. The underlying slopes within the long-line zone vary from 40 to 50%. We did not find reason to change the yarding method as approved in the THP.

THP Unit: # 3
Polygon: 3-1

A) General Observations

This is a large acreage unit. The unit is bound to the west by property line, to the north by the southern boundaries of Unit 1 and 2, to the east by property boundary, and to the south by a line developed by the Forester.

Two Class II watercourses extend into the unit from the east. Both watercourses include short Class II and Class III tributaries. The Forester has implemented the WLPZ and RMZ for the watercourses. Only a small portion (the upper extent) of the southern Class II watercourse has been flagged as a no harvest.

The unit occupies typically east facing slopes that are comprised of four draws and four interfluvial ridges. Slope inclinations vary from 40 to 60% where within the upper extents of the draws and less than 30% where atop the ridgetops. The unit occupies both portions of the main scarp and the body of the deep seated landslide mapped in Figures 3 and 6.

A) General Observations

The watercourses within the unit are typically straight in alignment with gentle (20-30%) to moderate (40-50%) gradients. Of interest and consistent with the watercourse in Unit 2, all of the higher order watercourse tributaries (Class II) occur on the southern slope and drain to the north. This may suggest a dip slope structural geologic setting within the underlying Wildcat Group / Hookton sediments.

No Value 1 Shalstab is modeled within the unit. Value 2 is modeled throughout the unit and appears in higher density near the western harvest boundary and distant from watercourses. The lower elevation modeled Value 2 Shalstab is essentially located within the Class II WLPZ.

MWP modeled for the unit is predominantly moderate. Two small areas of high MWP are locate in the northern portion of the unit. One of the locations is the extension of the High MWP discussed in Unit 2, the other location is the upslope swale of the Class II watercourse encompassed by Unit 2.

Figure 3 debris slide slope / source areas are mapped within all of the watercourse draws in the unit. The amphitheaters increase in acreage to the south and the slopes are consistently located on the southern banks.

The mass wasting response to previous harvests was minimal. One small landslide was observed during PHI by CGS (2005) within the northern Class II watercourse channel. A handful of main haul road related failures were noted and proposed for mitigation in the THP.

The small area of no harvest Class II WLPZ associated with the southern Class II watercourse is in response to very steep slopes and the inability to harvest timber and retain 75% canopy closure.

The unit was originally approved for Shelterwood Removal silviculture. This silviculture requires the retention of 100 ft^2 of basal area or the retention of 100 four-inch or greater (4+") trees per acre. The area of Unit 3 has been partially harvested before and includes a dense understory of redwood trees. This silviculture has not changed. Please note that where within the harvestable WLPZ, the mitigation is to leave 75% canopy closure.

The unit is proposed for ground based yarding utilizing the existing skid trail network where feasible and outside of WLPZ and Class III RMZ.

B) Harvest Related Impacts and Hillslope Sensitivity

The mass wasting response to the previous harvests appears to be limited in size and located adjacent the watercourse channels. This harvest proposes either no harvest or a very minimal harvest (75% canopy closure retention) where adjacent the Class II watercourses.

Numerous locations of mapped or modeled hazard are located within the unit. Those areas close to Class II watercourses are within the WLPZ and will be minimally harvested resulting in a minimal increase in the potential for mass wasting. The majority of the Value 2 Shalstab is located at significant distances from the watercourses.

The slopes exhibit a low propensity for mass wasting following extensive ground based timber harvest activities.

It is our opinion that the proposed harvest with implemented mitigations represents an insignificant increase in the potential for mass wasting.

C) Forestry / Silviculture Plan

The approved silviculture for the unit has not been changed. The Shelterwood Removal will retain 100 ft^2 of basal area per acre or 100 trees greater than 4 inches in diameter per acre.

D) Operational Design Plan

THP approved yarding method is ground based. Tractors will utilize the existing skid road network where feasible and outside of WLPZ or RMZ.

THP Unit: # 4
Polygon: 4-1

A) General Observations

This unit occupies the basin of a northeast trending, very well incised Class II watercourse. The unit is bound to the northwest by Unit 3, the north by a Class II tributary (also Unit 3), the east by rough coincidence with a ridge, and the south by the property line.

The prominent northeast trending and basin draining Class II watercourse includes a fork in the upper reach, numerous short and linear Class II tributaries, and no Class III watercourses. The Forester has implemented a WLPZ for the Class II watercourses. Due to the high number of the watercourses and the observation of numerous areas of mass wasting, the resulting WLPZ is significant in size. The Forester has also implemented no harvest for a significant portion of the WLPZ. Slightly less than ½ of the unit is no harvest due to the no harvest WLPZ.

Slope inclinations vary from gently inclined to well over 65%. The remaining harvestable portion of the unit varies from 10 to 60%. The northwest facing slopes of the unit (right bank of the basin and expanded no harvest WLPZ) are coincident with the right lateral margin of the large deep seated landslide mapped in Figures 3 and 6.

The watercourses within the unit are typically straight in alignment with gentle (20-30%) to moderate (40-50%) gradients. Again, a greater density of watercourse development is located on the southern or right bank of the watercourse.

Value 1 Shalstab is modeled in two locations within the unit. One location is in the northeastern portion of the unit, is two pixels and straddles the no harvest WLPZ. The remaining area is located within southwestern corner of the unit and distant (~150 ft) from the nearest watercourse. Value 2 is modeled throughout the unit and appears in higher density where adjacent Class II watercourses. The majority of the Value 2 is located within no harvest WLPZ. Four, single pixel locations exist outside of the WLPZ.

MWP modeled for the unit is predominantly moderate. Patches of high MWP exist parallel to the basin draining watercourse and upslope slightly of the watercourse channel. High MWP is modeled throughout the expanded WLPZ area along the right bank of the watercourse.

Figure 3 debris slide slope / source areas are mapped to underlie the southern 4/5 of the unit.

The mass wasting response to previous harvests was significant in this unit. Numerous landslides were observed during PHI by CGS

A) General Observations

(2005) atop the steep slopes adjacent the main Class II watercourse. The no harvest WLPZ was adjusted then to remove the failures from the harvest area.

The unit was originally approved for clearcut silviculture. This silviculture has been amended to Group Selection with a retention standard of 75 ft^2 basal area per acre. The retention standard changes to 75% canopy closure where within the harvestable Class II WLPZ.

The unit is proposed for both ground based and cable yarding.

B) Harvest Related Impacts and Hillslope Sensitivity

The mass wasting response to the previous harvests appears significant where aggressive, highly impactive practices were concentrate to very steeply inclined slopes with a high density of watercourses (suggestive of high water table and prolong periods of soil saturation). Those areas have been removed from the harvest. In addition, the remaining harvestable portions of the unit have been amended to retain more timber, keep a distance from the watercourses, and utilize the least impacting method of yarding.

The slopes exhibiting a high propensity for mass wasting following timber harvest activities have effectively been removed from this harvest.

It is our opinion that the proposed harvest with implemented mitigations represents an insignificant increase in the potential for mass wasting.

C) Forestry / Silviculture Plan

The approved silviculture of clearcut has been amended to Group Selection with a retention standard of 75 ft^2 basal per acre. This amended silviculture will result in a greater number of trees retained post harvest than a clear cut silviculture.

Site preparation has been changed to none.

D) Operational Design Plan
THP approved yarding method is both ground based and cable. The methods have been appropriately applied to the ground conditions present.

THP Unit: # 5
Polygon: 5-1

A) General Observations
This unit occupies a small strip of land that separates the western boundary of Unit 4 from the ridgetop to the east. The area is immediately upslope of the expanded no harvest WLPZ for the Class II watercourse in Unit 4. Slope morphology is planar. No watercourses are located within the unit. Slope inclinations average in the 40 to 50% range. Shalstab value 3 and 4 are modeled within the unit. The western half of the unit is modeled with high MWP and the eastern half is modeled with moderate MWP. Figure 3 debris slide slope / source areas are mapped to underlie the entire unit. The mass wasting response to previous harvests was insignificant in this unit. No landslides were observed during THP layout or PHI review. The unit was originally approved for Shelterwood Removal silviculture. This silviculture has not been changed. The unit is proposed for cable yarding.

B) Harvest Related Impacts and Hillslope Sensitivity
The mass wasting response to the previous harvests appears insignificant. The lack of landslides within the unit suggests a relatively high resilience to mass wasting. The required Shelterwood Retention should leave a considerable number of trees throughout the unit post harvest. Cable yarding will further reduce the potential for significant ground disturbance that may lead to instability. It is our opinion that the proposed harvest with implemented mitigations represents an insignificant increase in the potential for mass wasting.

C) Forestry / Silviculture Plan
The approved silviculture of Shelterwood Removal has not been changed.

D) Operational Design Plan
THP approved yarding method is cable. We found no reason to change this.

THP Unit: # 6
Polygon: 6-1

A) General Observations
This unit essentially occupies a north trending ridgetop and eastern flanking slopes. A small portion of the unit drains west to the Class II watercourse in Unit 4. The northern and southern boundaries are the property line, the eastern boundary is a Class two watercourse, and the western boundary is shared with Units 4 and 5. Slope morphology is characterized by predominantly planar slopes with deep concave incision for watercourses. Ridgetop elevations diminish to the north.

A) General Observations

The prominent north-trending Class II watercourse (eastern boundary of unit) includes two tributaries that drain from the west. Both watercourses are Class II. The Forester has implemented a no harvest WLPZ for the basin draining, north trending Class II watercourse and the southern bank of the southern Class II watercourse. Additional no harvest WLPZ extends into the unit from the west. This is the WLPZ for the Class II in Unit 4.

Slope inclinations vary from gently inclined along the ridge top to over 65% upslope of the watercourses. The watercourses within the unit are typically straight in alignment with gentle (20-30%) to moderate (40-50%) gradients.

No Value 1 Shalstab is modeled within the unit. Two pixels of Value 2 are modeled in the northern portion of the unit within the no harvest WLPZ for the downslope Class II watercourse. Additional Value 2 Shalstab is modeled in the southern portion of the unit. Two pixels are located within the harvestable portion of the southern Class II tributary WLPZ. The remaining Value 2 is an assemblage

adjacent the confluence of the southern Class II tributary and the main basin draining Class II watercourse. The locations are typically upslope of the WLPZ and within the cable yarded portion of the unit.

MWP modeling places moderate hazard adjacent the western boundary (no harvest WLPZ for Unit 4), low hazard for the north-trending ridgetop, a transition from high to moderate hazard rating about mid slope and a low hazard rating for the base of the slope where adjacent the Class II watercourse.

Figure 3 debris slide slope / source areas are mapped to underlie about ½ of the east-facing slopes (southwestern portion of the unit).

The mass wasting response to previous harvests was insignificant in this unit. Landslides observed during PHI by CGS (2005) within Unit 4 extend into this unit (no harvest WLPZ). No other areas of mass wasting were located within the unit.

The unit was originally approved for clearcut silviculture. This silviculture has been amended to Group Selection with a retention standard of 75 ft^2 basal area per acre. The retention standard changes to 75% canopy closure where within the harvestable Class II WLPZ.

The unit is proposed for both ground based and cable yarding. To provide access for cable yarding, a short road is approved for construction along the gently inclined and north-trending ridgetop.

B) Harvest Related Impacts and Hillslope Sensitivity
The mass wasting response to the previous harvests appears fairly insignificant. Where it has been identified, it has been removed from harvest. The Unit has been amended to retain more timber, keep the harvest a greater distance from the watercourses, and utilize the least impacting method of yarding. It is our opinion that the proposed harvest with implemented mitigations represents an insignificant increase in the potential for mass wasting.

C) Forestry / Silviculture Plan
The approved silviculture of clearcut has been amended to Group Selection with a retention standard of 75 ft^2 basal per acre. This amended will result in a greater number of trees retained post harvest than a clear cut. Site preparation has been changed to none.

D) Operational Design Plan
THP approved yarding method is both ground based and cable. The methods have been appropriately applied to the ground conditions present.

THP Unit: # 7
Polygon: 7-1

A) General Observations

Unit 7 essentially occupies the toe slopes of the right bank of the north-trending Class II watercourse that drains Unit 6. As such, the western boundary of the unit is a Class II watercourse, the northern, eastern, and very short length southern boundary are all defined by property lines. Slope morphology is characterized by smooth, somewhat uniform and alternating concave and convex forms that are moderate to steeply inclined.

Aside from the western boundary Class II watercourse, there are no other watercourses within the unit. The Forester has implemented a no harvest WLPZ for the basin draining, north trending Class II watercourse.

Slope inclinations vary from 40 to over 65% throughout the unit.

One Value 1 Shalstab pixel is modeled within the unit. It is located in the northern portion of the Class II watercourse no harvest WLPZ. Value 2 Shalstab is typically within all of the concave swales that lead to the downslope Class II watercourse. The pixel delineation is typically straight downhill and consistent with a channel.

MWP modeling has a low hazard for the southern 2/3 of the unit. Moderate MWP is modeled in the northern 1/3 of the unit

Figure 3 debris slide slope / source areas are mapped to underlie the entire unit.

The mass wasting response to previous harvests was significant but constrained to the immediate side slopes of the north trending Class II watercourse. Landslides were observed by CGS (2005) during PHI within and adjacent the WLPZ line. The WLPZ was adjusted as needed to provide additional buffers upslope of the small landslides. No other areas of mass wasting were located within the unit.

The unit was originally approved for Shelterwood Removal silviculture. This silviculture has not been changed.

The unit is proposed for cable yarding.

B) Harvest Related Impacts and Hillslope Sensitivity
The mass wasting response to the previous harvests appears fairly significant where steep slopes intersect the downslope Class II watercourse. This area has been removed from all harvest operations. The silviculture method combined with a wide watercourse buffer and cable yarding represents less potential impact than previous harvest activities at the site. As such, if the harvestable areas did not fail then, applying less aggressive and site disturbing activities should not result in failure this time. It is our opinion that the proposed harvest with implemented mitigations represents an insignificant increase in the potential for mass wasting.

C) Forestry / Silviculture Plan
The approved silviculture of Shelterwood Removal has not been changed.

D) Operational Design Plan
THP approved yarding method is cable. This appears reasonable.

References:

CGS, 2005, Engineering Geologic Review of Timber Harvesting Plan 1-05-006 "City Dump," City Garbage Co. of Eureka / Scopac LLC, report submitted to William Snyder, Dep. Dir. Recourse Management Cal. Dept. of Forestry and Fire Protection by James N. Falls, CEG, CGS, dated March 23, 2005.

CGS, 1999, Geologic and Geomorphic Features Related to Landsliding, Freshwater Creek, Humboldt County, California. DMG Open-File Report 99-10. Available via the web at http://www.conservation.ca.gov/cgs/fwgp/Pages/fresh.aspx

Montgomery, D.R. and W.E. Dietrich, 1994. A physically based model for the topographic control on shallow landsliding. Wat. Resour. Res. 30: 1153-1171. For specific details regarding the model used in this evaluation, please see Palco, 2006. Additional information from the model authors is available at the following website: http://socrates.berkeley.edu/~geomorph/shalstab

HRC, 2007, Ortho-photo rectified aerial photographs flown by 3Di West, Eugene Oregon,

HRC, 2008. Freshwater Creek and Elk River WDR Permit Acreage Enrollment and Compliant Monitoring Program, NCRWQCB R1-2006—0039 and R1-2006-0041, Quality Assurance Project Plan, Version 3.0. Policy document submitted to NCRWQCB dated June 7, 2006.

HRC, 2001, Freshwater Creek Watershed Analysis, prepared for Pacific Lumber Company (PALCO) dated January 2001, and acquired by Humboldt Redwood Company, LLC in 2008.

HRC, 2002, (Policy Acquired from The Pacific Lumber Company (PALCO)) Prescriptions Based on Watershed Analysis for Freshwater Creek, California, August 15, 2002.

HRC, 1999, The Pacific Lumber Company's Habitat Conservation Plan, Vol. 2 Part D, Landscape Assessment of Geomorphic Sensitivity, Public Review Draft.

Brief descriptions of the models used in this evaluation:

SHALSTAB was first described in Dietrich and Montgomery (1994). SHALSTAB is a simple, physically-based model based on the Mohr-Coulomb failure law that can be used to map shallow landslide potential. The model calculates the potential for failure using gridded digital elevation data. The simplicity of the model lies in the formulation of slope stability parameters that allow the model to be run parameter-free using default values suggested by the authors or determined by local measurement. Because the model uses no field measurements of critical characteristics that determine slope stability, the evaluation of potential instability is only an approximation. In applying SHALSTAB for Tier 2 enrollment, HRC has run the model on a 10-m spatial grid using LiDAR elevation

data and applied the parameters as suggested by the model authors. HRC's application of the method and parameters is described in HRC (2008).

Mass Wasting Potential (MWP) modeling is a cursory regional assessment that numerically values soil, slope inclination, geology type, and geomorphology with respect to past mass wasting (HRC, 1999). The sums of the values specific to an area are measured against a set ranking system that extends from very low to extreme. The models intent is to highlight areas of high potential for instability at the planning level. The model's use at the site specific level is limited in that pedogenic soil types are used, not textures, the geologic formations utilized provide one value for all of the incorporated facies, and the model is heavily biased if past mass wasting has occurred or has been mapped as occurring in the area.

Table 1. Proposed 2009 Harvest in Freshwater Creek. Revised 6/22/09

THP Name	THP Number	Unit Number	Silviculture				CC Equivalent	Hazard	
			CC	ROW	SHR	SEL		Low	High*
Little 34	08-048	1				22.4	11.2	22.4	0.0
Little 34	08-048	2				25.4	12.7	25.4	0.0
Little 34	08-048	3				30.3	15.2	27.4	10.8
Little 34	08-048	4				31.9	16.0	26.7	20.0
McCready Ridge	07-132	1	0	0	0	15.6	7.8	15.6	0.0
McCready Ridge	07-132	2	0	0	0	15	7.5	13.1	7.3
Around gills	05-077	4		3.1		32	19.1	34.9	0.8
Mid Incline	05-123	1		0.4		24.7	12.8	3.3	83.7
Mid Incline	05-123	2				31.5	15.8	31.5	0.0
Mid Incline	05-123	3				28.3	14.2	23.4	18.8
Fresh 1	04-242	2				36.1	18.1	34.3	6.9
Fresh 1	04-242	3				27.4	13.7	27.1	1.2
Little Fresh	05-176	1				36.3	18.2	30.1	23.8
Little Fresh	05-176	2				20	10.0	12.4	29.2
Little Fresh	05-176	3				5.7	2.9	5.7	0
Little Fresh	05-176	5				39.6	19.8	39.6	0.0
Little Main	05-085	2				29.7	14.9	14.3	59.1
Little Main	05-085	3				25.3	12.7	16	35.7
Little Main	05-085	7				33.3	16.7	19.5	53.0
City Dump	05-006	1				14.8	7.4	14.8	0.0
City Dump	05-006	2				7.7	3.9	7.7	0.0
City Dump	05-006	3			38.9	5.8	32.1	44.7	9.6
City Dump	05-006	4				9.8	4.9	7	10.8
City Dump	05-006	5			1	0	0.8	0.1	3.5
City Dump	05-006	6				8	4.0	5.6	9.2
City Dump	05-006	7			4.4	0	3.3	4.2	0.8
						Total	315.0		

*The acres represented here have been converted to High Hazard Acres by multiplying by 3.8404.

Highlight indicates a THP and Specific Unit to be enrolled prior to establishing an enforceable Zero Discharge Monitoring Plan (Tier I). Weighted Acreage Totals are listed below to demonstrate compliance with the Staff Landslide Model limit of 144 Harvest Acres in Freshwater Creek. Other THP Units will be enrolled after approval of the aforementioned Monitoring Plan

No Highlight Indicates a THP and Specific Unit to be enrolled after establishment of an enforcable Zero Discharge Monitoring Plan (Tier II).

Total Clear Cut Equivilant Acres enrolled or submitted for enrollment	315.0

Table 2. Summary of THPs to enrolled prior to establishment of Zero Discharge Monitoring Plan for Freshwater Creek

THP Number	Unit Number	Harvest Acres	Hazard	
			Low	High*
07-132	1	15.6	15.6	0.0
07-132	2	15	13.1	7.3
05-077	4	35.1	34.9	0.8
05-123	2	31.5	31.5	0.0
04-242	3	27.4	27.1	1.2
Totals		124.6	131.5	

Table 3. Summary of THPs by Yarding System and Site Preparation for Freshwater Creek

			Yarding System			Site Preparation	
THP Name	THP Number	Unit Number	Ground Based	Yarder	Helicopter	Mechanical	Broadcast
Little 34	08-048	1	3.9	18.5			
Little 34	08-048	2	8.2	17.2			
Little 34	08-048	3	6.9	23.4			
Little 34	08-048	4	8.8	23.1			
McCready Ridge	07-132	1	0	15.6			
McCready Ridge	07-132	2	10.1	4.9			
Around gills	05-077	4	19.7	15.4			
Mid Incline	05-123	1	0.4	24.7			
Mid Incline	05-123	2	11.5	23			
Mid Incline	05-123	3	14.1	14.2			
Fresh 1	04-242	2	10.9	25.2			
Fresh 1	04-242	3	0	27.4			
Little Fresh	05-176	1	0	36.3			
Little Fresh	05-176	2	7.3	12.7			
Little Fresh	05-176	3	0	5.7			
Little Fresh	05-176	5	0	39.6			
Little Main	05-085	2	0	29.7			
Little Main	05-085	3	0	25.3			
Little Main	05-085	7	0	33.3			
City Dump	05-006	1	14.8	0			
City Dump	05-006	2	0	7.7			
City Dump	05-006	3	44.7	0			
City Dump	05-006	4	7.1	2.7			
City Dump	05-006	5	0	1			
City Dump	05-006	6	5	3			
City Dump	05-006	7	0	4.4			

Humboldt Redwood Company,, LLC
6500 Durable Mill Rd. P.O. Box 390
Calpella, CA 95418

7/01/09

4521 North Coast Regional Water

INVOICE NO.	INVOICE DATE	DESCRIPTION	GROSS AMOUNT	DISCOUNT	NET AMOUNT
062209 105	6/22/09	1-05-006 GWDR A	$ 1,226.00	$ 0.00	$-1,226.00
CHECK NO.	25273	TOTALS	$ 1,226.00	$ 0.00	$ 1,226.00

ORIGINAL CHECK HAS A COLORED BACKGROUND PRINTED ON CHEMICAL REACTIVE PAPER - SEE BACK FOR DETAILS

Humboldt Redwood Company, LLC
6500 Durable Mill Rd. P.O. Box 390
Calpella, CA 95418

Bank of America
Northbrook, IL

70-2328
0719

025273

CHECK DATE 7/01/09
CHECK NO. 025273

****$ 1,226.00

ONE THOUSAND TWO HUNDRED TWENTY-SIX AND 00/100**********
CHECK AMOUNT

PAY TO THE ORDER OF
North Coast Regional Water
Quality Control Board
5550 Skylane, Suite A
Santa Rosa CA 95403

TWO SIGNATURES REQUIRED FOR OVER 5,000 DOLLARS

⑈025273⑈ ⑆071923284⑆ 87653⑈16430⑈

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

State of California
Regional Water Quality Control Board
APPLICATION/REPORT OF WASTE DISCHARGE
GENERAL INFORMATION FORM FOR
WASTE DISCHARGE REQUIREMENTS OR NPDES PERMIT

I. FACILITY INFORMATION

A. Facility:

Name: THP 1-**05-006**HUM "City Dump"			
Address:			
City:	County:	State:	Zip Code:
Contact Person: Jon Woessner		Telephone Number: 707-764-4376	

B. Facility Owner: (timber owner)

Name: Humboldt Redwood Company LLC			Owner Type (Check One): 1. ☐ Individual 2. ☒ Corporation 3. ☐ Governmental Agency 4. ☐ Partnership 5. ☐ Other
Address: P.O. Box 712			
City: Scotia	State: CA	Zip: 95565	
Contact Person: Jon Woessner		Telephone Number: 707-764-4376	Federal Tax ID:

C. Facility Operator (The agency or business, not the person): (plan submitter)

Name: Humboldt Redwood Company LLC			Owner Type (Check One): 1. ☐ Individual 2. ☒ Corporation 3. ☐ Governmental Agency 4. ☐ Partnership 5. ☐ Other
Address: P.O. Box 712			
City: Scotia	State: CA	Zip: 95565	
Contact Person: Jon Woessner		Telephone Number: 707-764-4376	Federal Tax ID:

D. Owner of the Land:

Name: City Garbage Company of Eureka			Owner Type (Check One): 1. ☐ Individual 2. ☒ Corporation 3. ☐ Governmental Agency 4. ☐ Partnership 5. ☐ Other
Address: 949 W. Hawthorne			
City: Eureka	State: CA	Zip: 95501	
Contact Person: Michael Leggins		Telephone Number: (707) 442-5711	Federal Tax ID:

E. Address Where Legal Notice May Be Served:

Address: 125 Main Street		
City: Scotia	State: CA	Zip: 95565
Contact Person: Mike Jani		Telephone Number: 707-764-4403

F. Billing Address:

Address: P.O. Box 712		
City: Scotia	State: CA	Zip: 95565
Contact Person: Jon Woessner		Telephone Number: 707-764-4376

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

State of California
Regional Water Quality Control Board
APPLICATION/REPORT OF WASTE DISCHARGE
GENERAL INFORMATION FORM FOR
WASTE DISCHARGE REQUIREMENTS OR NPDES PERMIT

II. TYPE OF DISCHARGE

Check Type of Discharge(s) Described in this Application (A or B):

☒ **A. WASTE DISCHARGE TO LAND** ☐ **B. WASTE DISCHARGE TO SURFACE WATER**

Check all that apply:

☐ Domestic/Municipal Wastewater Treatment and Disposal	☐ Animal Waste Solids	☐ Animal or Aquacultural Wastewater
☐ Cooling Water	☐ Land Treatment Unit	☐ Biosolids/Residual
☐ Mining	☐ Dredge Material Disposal	☐ Hazardous Waste (see instructions)
☐ Waste Pile	☐ Surface Impoundment	☐ Landfill (see instructions)
☐ Wastewater Reclamation	☐ Industrial Process Wastewater	☐ Storm Water

☒ Other, please describe: Timber harvest activities

III. LOCATION OF THE FACILITY

Describe the physical location of the facility.

1. Assessor's Parcel Number(s)	2. Latitude	3. Longitude
Facility:	**Facility:**	**Facility:**
Discharge Point:	**Discharge Point:**	**Discharge Point:**

IV. REASON FOR FILING

☒ New Discharge or Facility	☐ Changes in Ownership/Operator (see instructions)
☐ Change in Design or Operation	☐ Waste Discharge Requirements Update or NPDES Permit Reissuance
☐ Change in Quantity/Type of Discharge	☐ Other:

V. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Name of Lead Agency: California Department of Forestry and Fire Protection

Has a public agency determined that the proposed project is exempt from CEQA? ☐ **Yes** ☒ **No**

If Yes, state the basis for the exemption and the name of the agency supplying the exemption on the line below.

Basis for Exemption/Agency:

Has a "Notice of Determination" been filed under CEQA? ☐ **Yes** ☒ **No**

If Yes, enclose a copy of the CEQA document, Environmental Impact Report, or Negative Declaration. If no, identify the expected type of CEQA document and expected date of completion.

Expected CEQA Documents:

☐ **EIR** ☐ **Negative Declaration** **Expected CEQA Completion Date:**

CALIFORNIA ENVIRONMENTAL
PROTECTION AGENCY

State of California
Regional Water Quality Control Board
APPLICATION/REPORT OF WASTE DISCHARGE
GENERAL INFORMATION FORM FOR
WASTE DISCHARGE REQUIREMENTS OR NPDES PERMIT

VI. OTHER REQUIRED INFORMATION

Please provide a COMPLETE characterization of your discharge. A complete characterization includes, but is not limited to, design and actual flows, a list of constituents and the discharge concentration of each constituent, a list of other appropriate waste discharge characteristics, a description and schematic drawing of all treatment processes, a description of any Best Management Practices (BMPs) used, and a description of disposal methods.

Also include a site map showing the location of the facility and, if you are submitting this application for an NPDES permit, identify the surface water to which you propose to discharge. Please try to limit your maps to a scale of 1:24,000 (7.5' USGS Quadrangle) or a street map, if more appropriate.

VII. OTHER

Attach additional sheets to explain any responses which need clarification. List attachments with titles and dates below:

You will be notified by a representative of the RWQCB within 30 days of receipt of your application. The notice will state if your application is complete or if there is additional information you must submit to complete your Application/Report of Waste Discharge, pursuant to Division 7, Section 13260 of the California Water Code.

VIII. CERTIFICATION

"I certify under penalty of law that this document, including all attachments and supplemental information, were prepared under my direction and supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

Print Name: Jon Woessner	Title: Northern Area Manager
Signature:	Date: 6/22/09

FOR OFFICE USE ONLY

Date Form 200 Received:	Letter to Discharger:	Fee Amount Received:	Check #:

Humboldt Redwood Company LLC

Erosion Control Plan (ECP) for the "City Dump" THP 1-05-006HUM

Updated ECP – for purpose of identifying **Tier 2** erosion control sites specific to units 1 - 7 (2009 enrollment requests); Unit 3 has sites 300 and 600 (Road X14.7534) erosion control sites located on the spur road system leading specifically to These units.

This plan is being included in the THP to partially meet the requirements of the North Coast Regional Water Quality Control Board Watershed-wide Discharge Requirements. (**WWDRs**)

All operational portions of this ECP that are to be enforced through the Forest Practice Rules have been included in Section II of the THP.

Version **20080819**

Humboldt Redwood Company LLC Erosion Control Plan (ECP)

This document addresses the requirements of the California Regional Water Quality Control Board, North Coast Region Order No. R1-2006-0041 (Freshwater Creek) for an Erosion Control Plan (ECP) related to timber harvest activities on Non-Federal lands in the North Coast Region (Sec. III D2 and D3). The responsible party for this ECP is Humboldt Redwood Company LLC, P.O. Box 712 Scotia, CA 95565 (707) 764-2330.

This ECP is submitted for: THP Name: **City Dump 1-05-006HUM**
Contact Person: **Jon Woessner** Phone: **(707) 764-4376**

The landowner is committed to a wide variety of measures to prevent and minimize the discharge or threatened discharge of sediment from controllable sediment discharge sources as part of this project into the waters of the state in violation of applicable water quality requirements. Prevention and Minimization of Controllable Sediment Discharge Sources associated with this project are identified in the *Controllable Sediment Sources* table. The specific conditions of sediment discharge sources and a summary of prevention and minimization measures (Section I) are identified in the table. General prevention and minimization measures for the project (Section II) are incorporated in the ECP by reference.

The RPF and/or the RPF Designee have conducted an inventory of potential "controllable sediment discharge sources" within the project area. As defined in California Regional Water Quality Control Board Order No. R1-2006-0041 (Freshwater Creek).

> "Controllable sediment discharge source" means sites or locations, both existing and those created by proposed timber harvest activities, within the Project area that meet all the following conditions:
>
> 1. is discharging or has the potential to discharge sediment to waters of the state in violation of applicable water quality requirements or other provisions of these WWDRs,
> 2. was caused or affected by human activity, and
> 3. may feasibly and reasonably respond to prevention."

Upon guidance of the North Coast Regional Water Quality Control Board (NCRWQCB) staff, discharge from the source must be likely to occur during the life of the Timber Harvesting Plan (THP) and WWDR. (Holly Lundborg, personal communication)

The inventory method consisted of an appurtenant road survey, aerial photos and ground assessments of the harvest units, and a complete ground assessment of all watercourses and associated stream protection zones.

The schedule for implementing the prevention and minimization management measures for the controllable sediment sources will be consistent with the duration of the THP. These measures will be implemented in accordance with the priority level assigned to each site. High priority sites will be addressed first with low priority sites to follow. Work at all sites will be accomplished prior to THP expiration. The general prevention and minimization measures will be implemented concurrent with operations.

I. Inventory and Treatment of Controllable Sediment Sources

All controllable sediment sources are listed in the attached "Erosion Control Plan" table. These sources have been assigned a treatment priority of low, medium or high based on: 1) potential for significant sediment delivery to a Class I, II or III channel; 2) treatment immediacy (a subjective combination of event probability and sediment delivery); and 3) treatment cost-effectiveness.

The Prioritization for implementing prevention and minimization measures for road-related and non road-related controllable sediment sources is based upon guidance provided in Order No. R1-2006-0041 (Freshwater Creek) Highest priority is assigned to the largest sediment discharge sources that discharge to waters that support domestic water supplies or fish. The landowner's prioritization method considers this guidance, and combines it with consideration for accessibility and level of imminent risk of significant sediment discharge. Sources that receive a high priority rating will be treated by a date certain as noted in the Controllable Sediment Sources table. Sources that receive a low or medium rating are determined to have a low to moderate risk of imminent discharge and will be treated prior to completion of the THP, or as otherwise indicated.

Non-road related controllable sediment sources can include skid road crossings, yarding furrow, skid road in watercourse, perched skid road fill, skid road rutting, landslide, layouts, railroad grade, incline, etc.

Information specific to Controllable Sediment Discharge Sources is listed in the Controllable Sediment Sources Table, below. An explanation of information provided in that table is provided below.

II. General Prevention and Minimization Measures for Controllable Sediment Discharge

In addition to the site specific measures detailed above, the general measures proposed in this project, either as required by another State or Federal regulating agency, or as a matter of Humboldt Redwood Company policy, will prevent or minimize future sediment delivery. These measures include, but are not limited to measures incorporated in the THP Section Items as follows:

THP Section II:

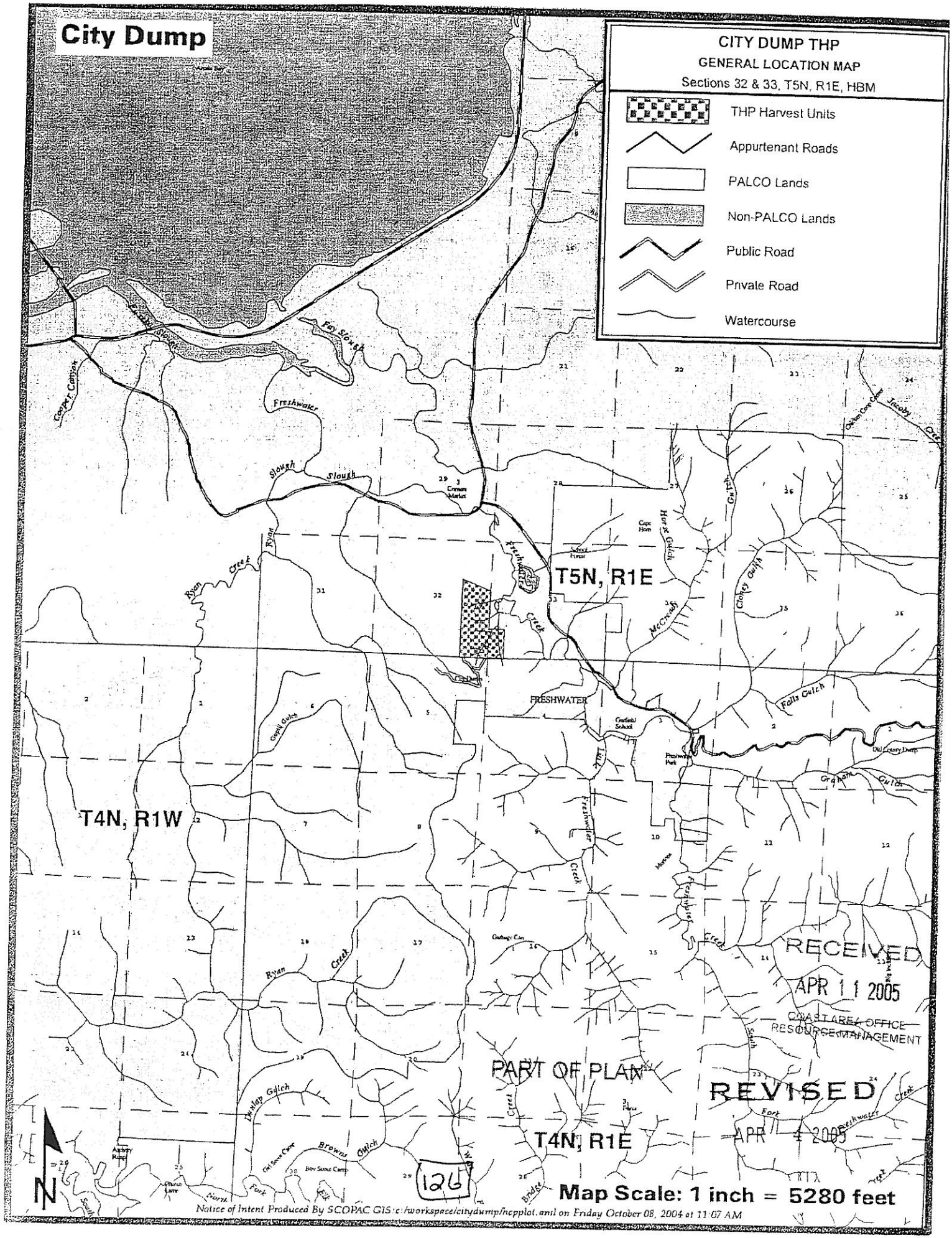
- Item 14 – Describes silvicultural prescriptions
  - (i) Site Preparation – Disclosure of selected site preparation treatments and mitigation measures
- Item 16 – Harvesting Practices – Describes yarding systems, equipment utilized, equipment limitations, and drainage facility installation timing
  - Inclusive through (m) – equipment use limitations and mitigation
- Item 18 – Soil Stabilization – waterbreak requirements, mitigation to minimize soil disturbance and sediment transport
- Item 20 – Ground Based Equipment Use Location
- Item 21 – Ground Based Equipment Use in Sensitive Areas – locations, descriptions of operations, limitations and mitigation measures
- Item 22 – Alternative Practices to Harvesting and Erosion Control
- Item 23 – Winter Operations – Provides descriptions of limitations and mitigation measures required during winter period operations and Winter Operating Plan
- Item 24 – Roads and Landings – Describes road and landing construction and re-construction operations, limitations, drainage relief structure installation, mitigation measures, road maintenance, inspections and wet weather road use restrictions
- Item 25 – Site Specific Measures to Reduce Adverse Impacts and Special Instructions to the LTO
- Item 26 – Watercourse and Lake Protection (WLPZ)
- Item 27 – "In Lieu" WLPZ Practice(s)
- Item 28 – Downstream Water Users Notification and Domestic Water Supply Protection Description of protection measures
- Item 29 – Sensitive Watershed – Identifies whether the plan is located in a designated sensitive watershed and mitigation measures
- Item 29 – 1 Hillslope Management (HCP 6.3.3.7) – Describes HCP hillslope management measures required as per watershed analysis

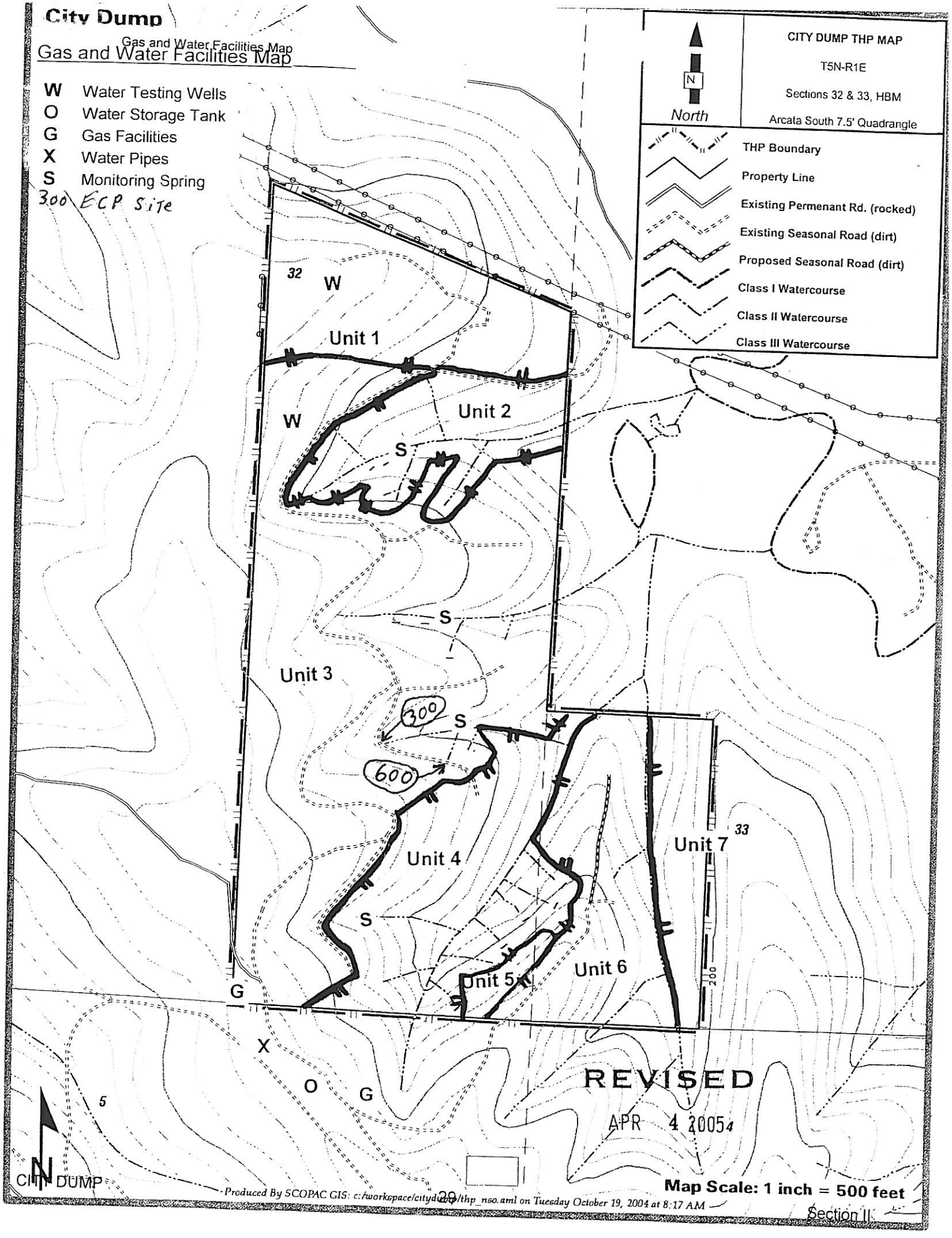
THP Section V:

- Sediment Reduction from Roads and THP Sediment Production--Including Table 1 – "Sediment Delivery for Units and Roads for this THP," references, letter regarding Road related sediment assessment for this THP with the calculations of deliverable net cubic yards of sediment, calculations and PWA information related to the THP project area when available

Maps attached:

- **Appurtenant Road and Wet Weather Road Use map**
- **Road Construction Locations/ECP Site Locator Map**


City Dump
CITY DUMP THP
GENERAL LOCATION MAP
Sections 32 & 33, T5N, R1E, HBM
THP Harvest Units
Appurtenant Roads
PALCO Lands
Non-PALCO Lands
Public Road
Private Road
Watercourse
T5N, R1E
T4N, R1W
T4N, R1E
FRESHWATER
Freshwater Slough
Fay Slough
Cooper Canyon
Ryan Creek
Horse Gulch
McCready
Cloney Gulch
Falls Gulch
Graham Gulch
Freshwater Creek
Dunlap Gulch
Browns Gulch
Jacoby Creek
Old Cutsey Dump
Gulch
Creek
Fork
Bridge
Map Scale: 1 inch = 5280 feet
N
126
RECEIVED
APR 11 2005
COAST AREA OFFICE
RESOURCE MANAGEMENT
PART OF PLAN
REVISED
APR 4 2005
Notice of Intent Produced By SCOPAC GIS:c:/workspace/citydump/ncpplot.aml on Friday October 08, 2004 at 11:07 AM


City Dump
Gas and Water Facilities Map
Gas and Water Facilities Map
W Water Testing Wells
O Water Storage Tank
G Gas Facilities
X Water Pipes
S Monitoring Spring
300 ECP Site
CITY DUMP THP MAP
T5N-R1E
Sections 32 & 33, HBM
Arcata South 7.5' Quadrangle
North
THP Boundary
Property Line
Existing Permenant Rd. (rocked)
Existing Seasonal Road (dirt)
Proposed Seasonal Road (dirt)
Class I Watercourse
Class II Watercourse
Class III Watercourse
32
33
Unit 1
Unit 2
Unit 3
Unit 4
Unit 5
Unit 6
Unit 7
W
S
G
X
O
300
600
200
REVISED
APR 4 2005
CITY DUMP
Produced By SCOPAC GIS: c:/workspace/citydump/thp_nso.aml on Tuesday October 19, 2004 at 8:17 AM
Map Scale: 1 inch = 500 feet
Section II

III Inspection Plan and Reporting Requirements

A. Inspection Plan
The Inspection Plan is designed to ensure that all required management measures are installed and functioning prior to rainfall events; that the management measures are effective in controlling sediment discharge sources throughout the winter period; and that no new controllable sediment discharge sources developed.

B. Qualified and trained professionals will conduct all specified inspections of the project site to identify areas causing or contributing to a violation of the applicable water quality requirements or other provisions of these WWDRs. The responsible party for inspection and reporting is **Jon Woessner (707) 764-4376**.

C. No inspections are required in Project Areas where Timber Harvest Activities have not yet commenced.

D. Project Areas where Timber Harvest Activities have commenced and no winter period Timber Harvest Activities have occurred inspections will be conducted each year and throughout the duration of the Project while Timber Harvest Activities occur.

a. The Project is covered under WWDRs and the following inspection requirements will begin at the startup of timber harvest activities within the Project area:
   i. By November 15 to assure Project Areas are secure for the winter period;
   ii. Once following ten (10) inches of cumulative rainfall commencing on November 15 and prior to March 1, as worker safety and access allows; and
   iii. After April 1 and before June 15 to assess the effectiveness of management measures designed to address controllable sediment discharges and to determine if any new controllable sediment discharges sources have developed.

b. Project Areas with Winter Period Timber Harvest Activities will conduct inspections of such Project Areas while Timber Harvesting Activities occur and the Project is covered under the WWDRs as follows:
   i. Immediately following cessation of winter period Timber Harvest Activities to assure areas with winter Timber Harvest Activities are secure for the winter;
   ii. Once following ten (10) inches of cumulative rainfall commencing on November 15 and prior to March 1, as worker safety and access allows; and
   iii. After April 1 and before June 15 to assess the effectiveness of management measures designed to address controllable sediment discharges and to determine if any new controllable sediment discharges sources have developed.

c. Inspection reports will identify where management measures have been ineffective and when repairs and design changes will be implemented to correct management measure failures.

d. After completing the required inspections, and when it has been determined new controllable sediment discharges sources have developed, the ECP, implementation schedule, and inspection plan will be updated, if required, consistent with the WWDRs and submit the updated documents to the Regional Water Board to maintain coverage under the WWDRs. If the approved amendment is found to be out of compliance with the WWDRs, the Project will be amended to be consistent with the provisions of the WWDR within 30 days, or coverage under the WWDRs will be terminated. The Project will then be required to seek Project coverage under an individual WDR.

e. Equipment, materials, and workers will be available for rapid response to failures and emergencies, implement, as feasible, emergency management measures depending upon field conditions and worker safety for access.

D. If during the inspection or during the course of conducting timber harvest activities, a violation of an applicable water quality requirement or conditions of WWDRs is discovered, the following procedures will be followed:

a. When it has been determined that discharges are causing or contributing to a violation or an exceedence of an applicable water quality requirement or a violation of a WWDR prohibition:
   i. Corrective measures will be implemented immediately following the discovery that applicable water quality requirements were exceeded or a prohibition violated, followed by notification to the Regional Board by telephone as soon as possible but no later than 48 hours after the discharge has been discovered. The notification will be followed by a report within 14 days to the Regional Board, unless otherwise directed by the Executive Officer, that includes:
      1. the date the violation was discovered;

2. the name and title of the person(s) discovering the violation;
3. a map showing the location of the violation site;
4. a description of recent weather conditions prior to discovering the violation;
5. the nature and cause of the water quality requirement violation or exceedence or WWDR prohibition violation;
6. photos of the site characterizing the violation;
7. the management measure(s) currently being implemented;
8. any maintenance or repair of management measures;
9. any additional management measures which will be implemented to prevent or reduce discharges that are causing or contributing to the violation or exceedence of applicable water quality requirements or WWDR prohibition violation; and,
10. The signature and title of the person preparing the report.
11. The report will include an implementation schedule for corrective actions and describe the actions taken to reduce the discharges causing or contributing to violation or exceedence of applicable water quality requirements or WWDR prohibition violation.

E. For other inspections conducted where violations are not discovered, a summary report will be submitted to Executive Officer by June 30th for each year of coverage under the WWDRs or upon termination of coverage. The summary report, at a minimum will include the date of inspections, the inspector's name, the location of each inspection, and the title and name of the person submitting the summary report.

If helicopter operations are proposed for this project, please find attached a Columbia Helicopters, Inc. (CHI) Fuel Spill Prevention and Cleanup Plan For Columbia Helicopters Field Operations.

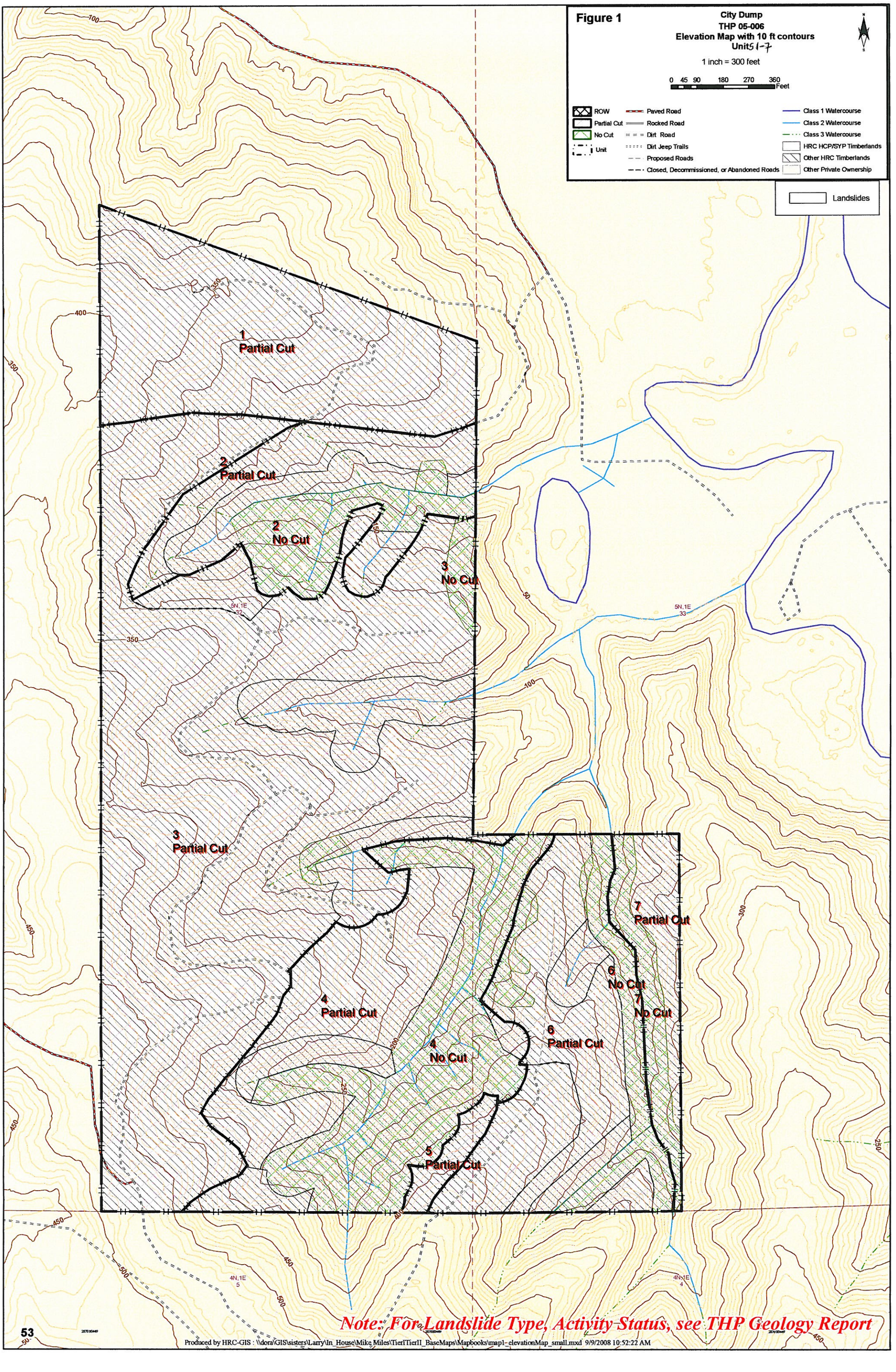
Explanation of Information Included in the Controllable Sediment Sources Table	
Column Heading	Explanation
Site No.	Site identification unique to project area
Site Type	A description of the existing site. Example: Humboldt Crossing; Culvert Crossing; Unstable Fill; Unstable Cut Slope; Diversion Potential.
Estimate of Potential Erosion	A quantitative estimate of the volume, in cubic yards, of the total amount of potential erosion/displacement of soil that will occur should the site entirely fail. The landowner often uses a methodology developed by Pacific Watershed Associates to estimate erosion, which assumes 100% delivery of calculated volume—use of this method for individual sites is noted in Site Description.
Potential Sediment Delivery Percent	An estimate of the relative potential for sediment delivery expressed as a percent of the total amount of Potential Erosion that will be discharged to waters of the State should the site fail.
Sediment Prevention Volume	The volume, in cubic yards, of sediment discharge estimated to be prevented by implementation of the prescribed treatment. Volume represents the Estimate of Potential Erosion multiplied by the Potential Sediment Delivery Percent.
Priority for Treatment	Treatment priority reflects the immediacy of sediment discharge and the relative risk to the receptor, should the site fail. Low priority sites are ones that will not likely deliver significant amounts of sediment during the life of the WWDR permit, and will be treated prior to filing of THP work completion report, which does not exceed 5-years following THP approval date. Medium or high priority sites indicate potentially imminent discharge, and the timing of treatment is indicted in Implementation Schedule column.
Implementation Schedule	Indicates the timing of implementing the prevention and minimization measures listed in the Treatment column.
Site Description	Provides sufficient information that describes the existing condition of the site and factors that inform the chosen treatment methods and implementation schedule. This information will include a description of how the existing condition of the site (ie. stable or unstable) will be affected by different storm events, and whether sediment discharge is imminent. For example, an unstable site could easily discharge significant amounts of sediment in a small storm, thus the treatment priority should be higher. Conversely, a stable site that may take one or more very large storms to trigger discharge could be lower treatment priority. If PWA method is used to calculate erosion/delivery volumes, it will noted here.
Treatment	Sediment discharge prevention and minimization measures that will be implemented at the site, including treatment specifications if necessary.

Attachments:

- **ECP Table**

Erosion Control Plan

Site	Site Type	Est. Potential Erosion (Cu.Yards)	Est. Potential Delivery (Cu.Yards & %)		Priority for Treatment	Implementation Schedule	Site Description	Treatment
Project City Dump								
RD: X14.7534 STATION: 300 SITE: P1 WOID: -290214886 SEDID: 5N1E32G701 REPAIRED: NO	Perched Fill	15	15	100%	Low	Prior to THP Final Completion.	Seasonal road needs dip installed.	EXISTING SEASONAL ROAD CROSSES ABOVE END OF CLASS III WATERCOURSE. THE PORTION OF ROAD LOCATED ABOVE THE CLASS III WATERCOURSE SHALL BE DIPPED ADEQUATELY TO PREVENT A FUTURE DIVERSION. REMOVE PERCHED FILL AND PLACE AT STABLE LOCATION. NEW FILL AT POINT G-4 SHALL BE COMPACTED ON A LEVEL BENCH EXCAVATED TO SUPPORTIVE MATERIAL PER THE FOREST PRACTICE RULES. The lateral edges of the excavation are del;ineated in the field.
RD: X14.7534 STATION: 600 SITE: P3 WOID: -848918741 SEDID: 5N1E32H701 REPAIRED: NO	Surface Drainage	5	5	100%	Low	Prior to THP Final Completion.	Surface drainage control.	SURFACE DRAINAGE FOR THE ROADWAY SHALL DESIGNED TO AVOID DELIVERING RUNOFF INTO THE HEAD OF THIS FEATURE. A SUBSURFACE DRAINAGE SYSTEM MAY BE NEEDED IN THE FUTURE If THE SLIDE BEGINS TO THREATEN THE ROADWAY. IF THIS OCCURS, A CERTIFIED ENGINEERING GEOLOGIST OR GEOTECHNICAL ENGINEER WILL NEED TO DESIGN THE DRAINAGE MEASURES FOR REVIEW AND APPROVAL BY CDF AND CGS.
Total Estimated Yards		20	20					



Note: For Landslide Type, Activity Status, see THP Geology Report

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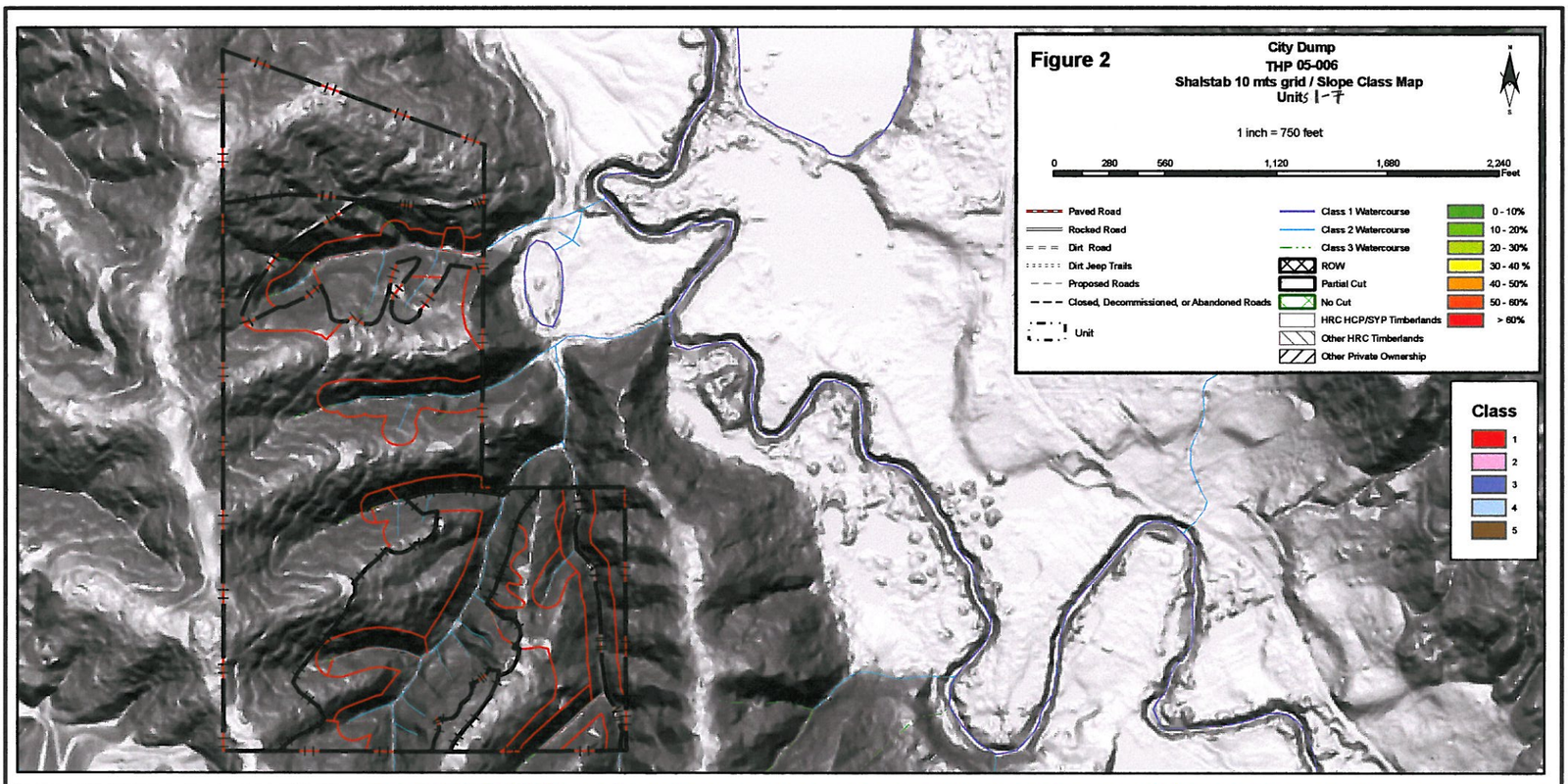
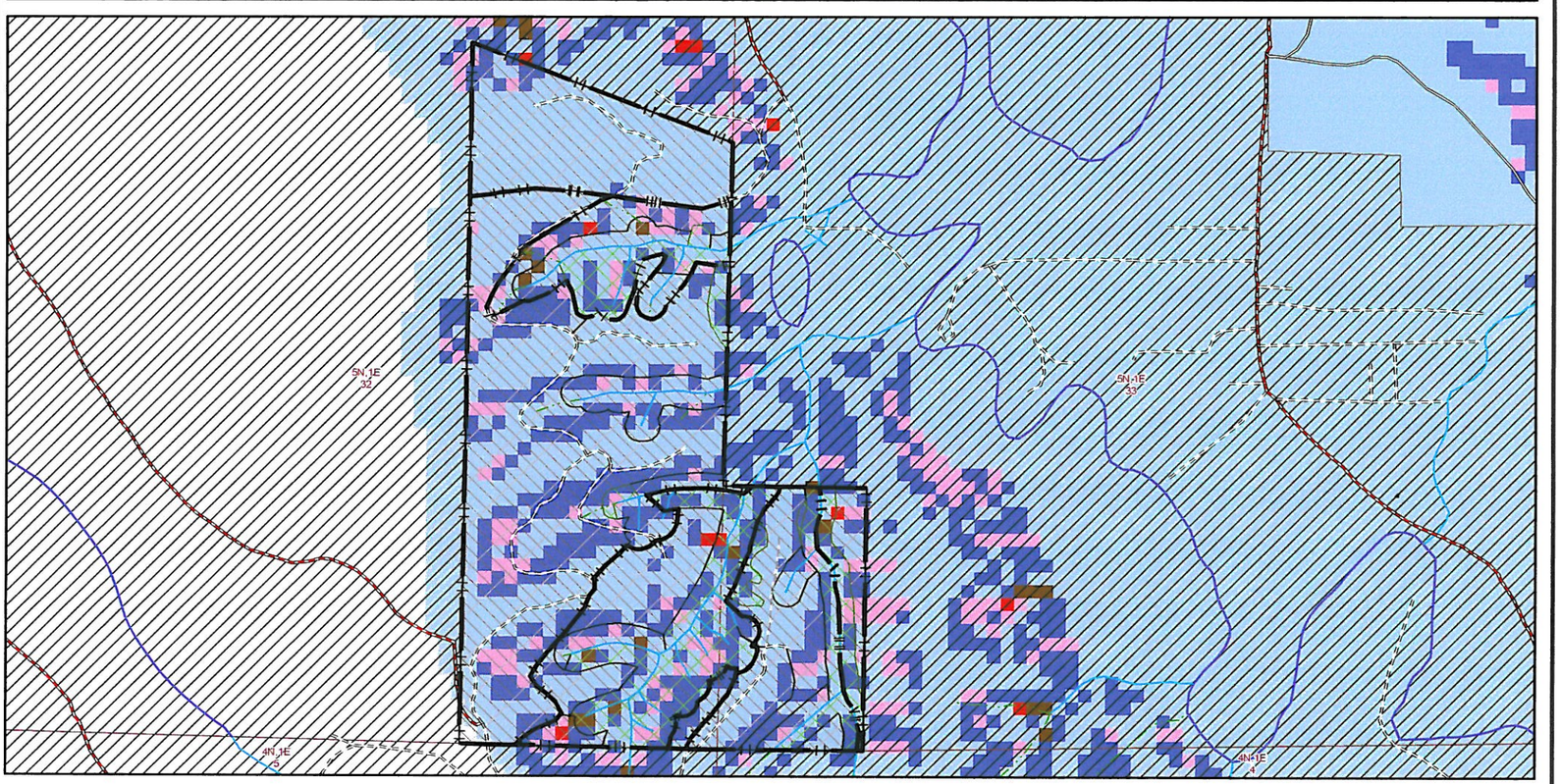
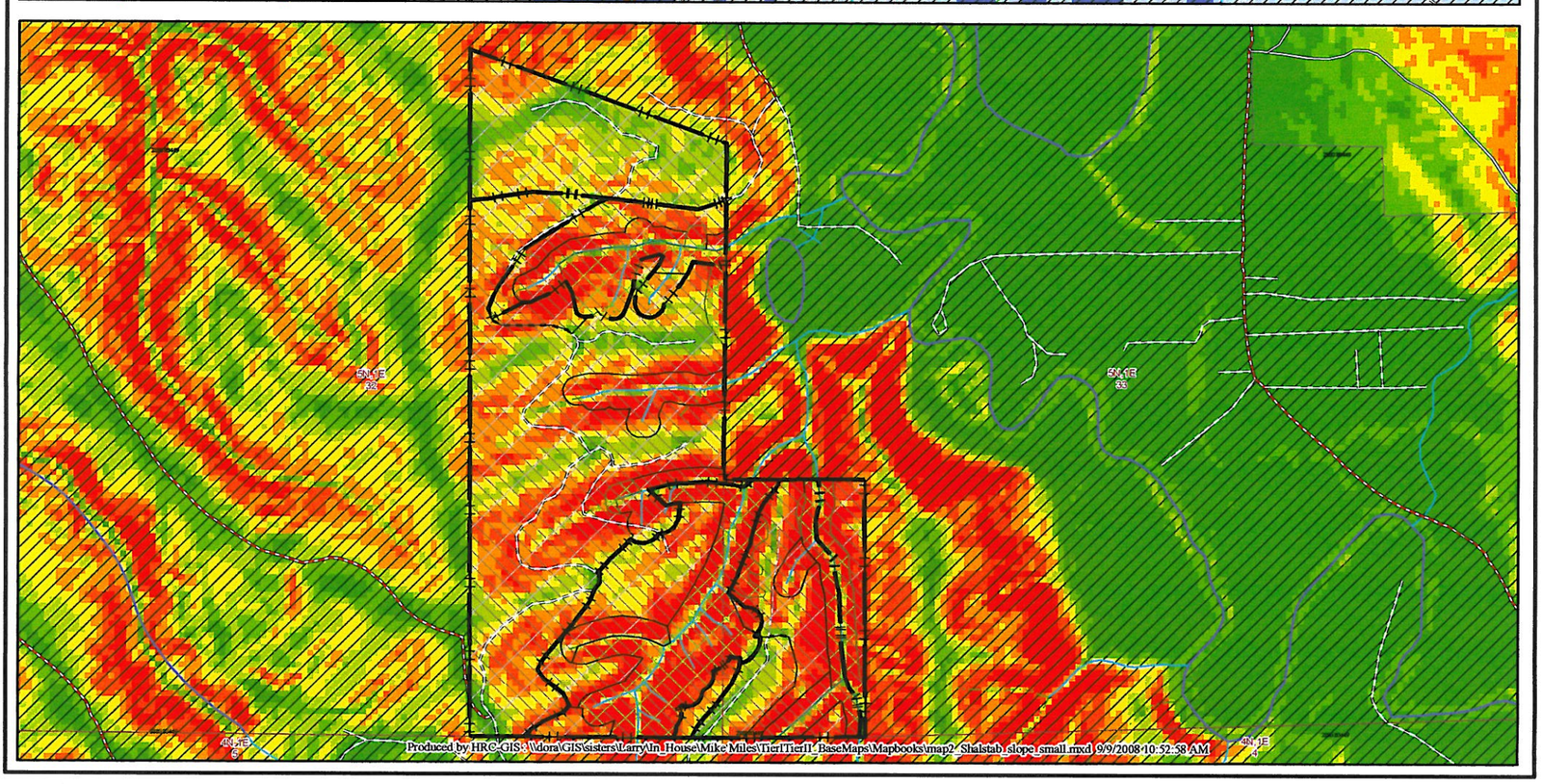


Figure 2
City Dump
THP 05-006
Shalstab 10 mts grid / Slope Class Map
Units I-7
1 inch = 750 feet
0 280 560 1,120 1,680 2,240 Feet
Paved Road
Rocked Road
Dirt Road
Dirt Jeep Trails
Proposed Roads
Closed, Decommissioned, or Abandoned Roads
Unit
Class 1 Watercourse
Class 2 Watercourse
Class 3 Watercourse
ROW
Partial Cut
No Cut
HRC HCP/SYP Timberlands
Other HRC Timberlands
Other Private Ownership
0 - 10%
10 - 20%
20 - 30%
30 - 40 %
40 - 50%
50 - 60%
> 60%
Class
1
2
3
4
5


5N,1E
33
4N,1E
3
5N,1E
33
4N,1E


5N,1E
33
5N,1E
33
4N,1E
3
4N,1E
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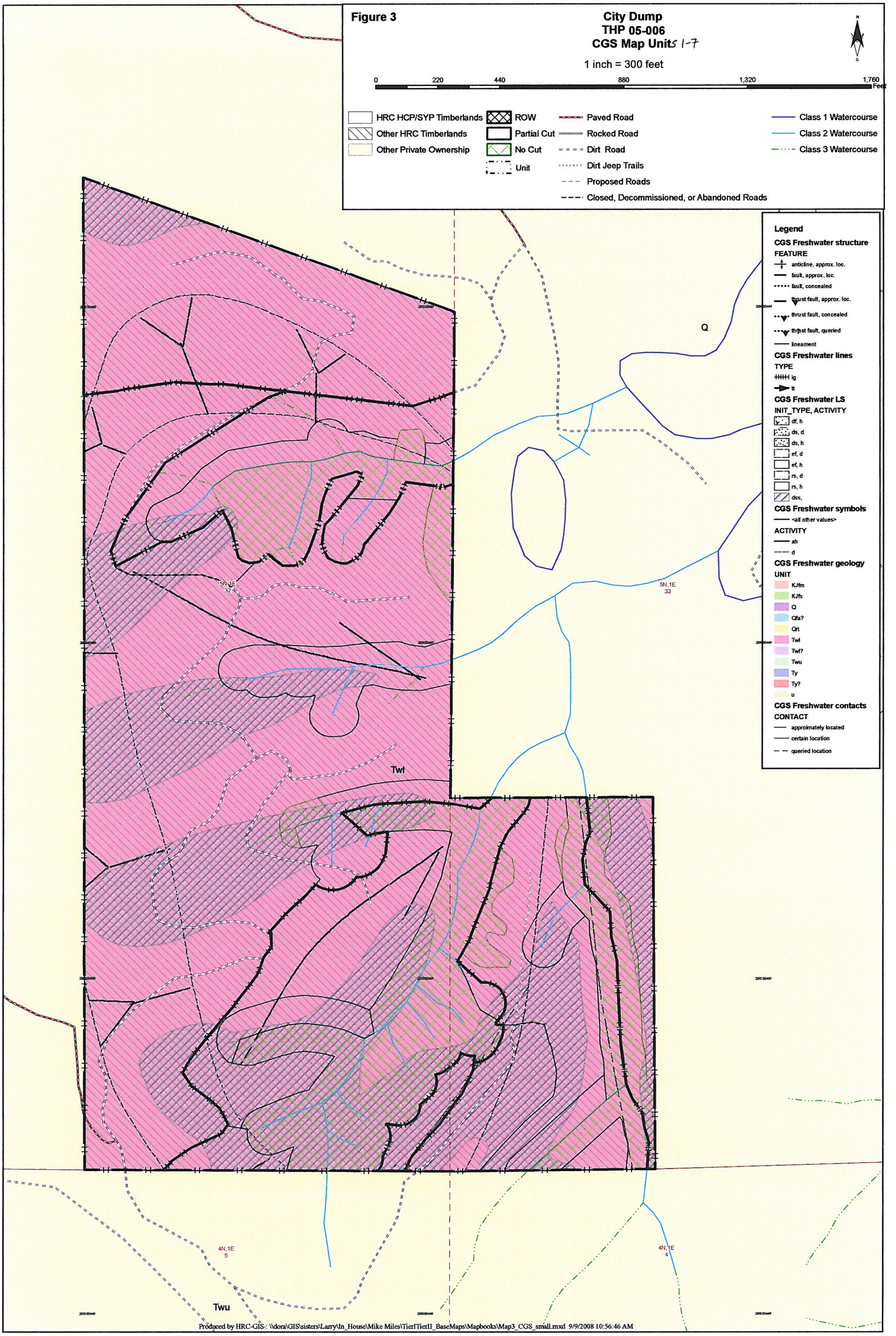
Figure 3
City Dump
THP 05-006
CGS Map Units 1-7
1 inch = 300 feet
0
220
440
880
1,320
1,760
Feet
HRC HCP/SYP Timberlands
Other HRC Timberlands
Other Private Ownership
ROW
Partial Cut
No Cut
Unit
Paved Road
Rocked Road
Dirt Road
Dirt Jeep Trails
Proposed Roads
Closed, Decommissioned, or Abandoned Roads
Class 1 Watercourse
Class 2 Watercourse
Class 3 Watercourse
Legend
CGS Freshwater structure
FEATURE
anticline, approx. loc.
fault, approx. loc.
fault, concealed
thrust fault, approx. loc.
thrust fault, concealed
thrust fault, queried
lineament
CGS Freshwater lines
TYPE
ig
tt
CGS Freshwater LS
INIT_TYPE, ACTIVITY
df, h
ds, d
ds, h
ef, d
ef, h
rs, d
rs, h
dss,
CGS Freshwater symbols
<all other values>
ACTIVITY
ah
d
CGS Freshwater geology
UNIT
KJfm
KJfs
Q
Qfa?
Qrt
Twl
Twl?
Twu
Ty
Ty?
u
CGS Freshwater contacts
CONTACT
approximately located
certain location
queried location
Q
5N,1E
32
5N,1E
33
Twl
4N,1E
5
4N,1E
4
Twu
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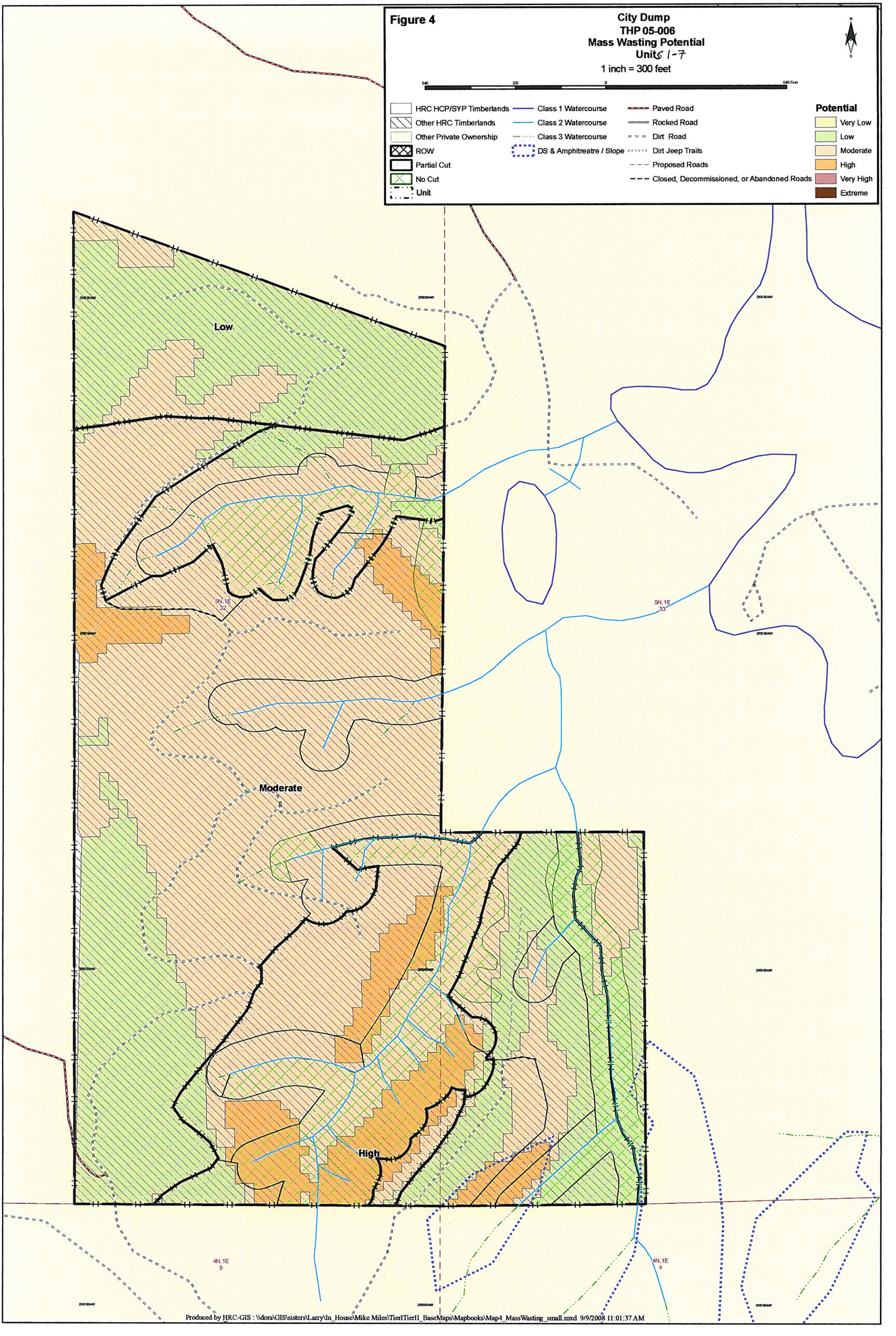
Figure 4
City Dump
THP 05-006
Mass Wasting Potential
Units 1-7
1 inch = 300 feet
640
320
0
640 Feet
HRC HCP/SYP Timberlands
Other HRC Timberlands
Other Private Ownership
ROW
Partial Cut
No Cut
Unit
Class 1 Watercourse
Class 2 Watercourse
Class 3 Watercourse
DS & Amphitreatre / Slope
Paved Road
Rocked Road
Dirt Road
Dirt Jeep Trails
Proposed Roads
Closed, Decommissioned, or Abandoned Roads
Potential
Very Low
Low
Moderate
High
Very High
Extreme
Low
Moderate
High
5N,1E 32
5N,1E 33
4N,1E 5
4N,1E 4
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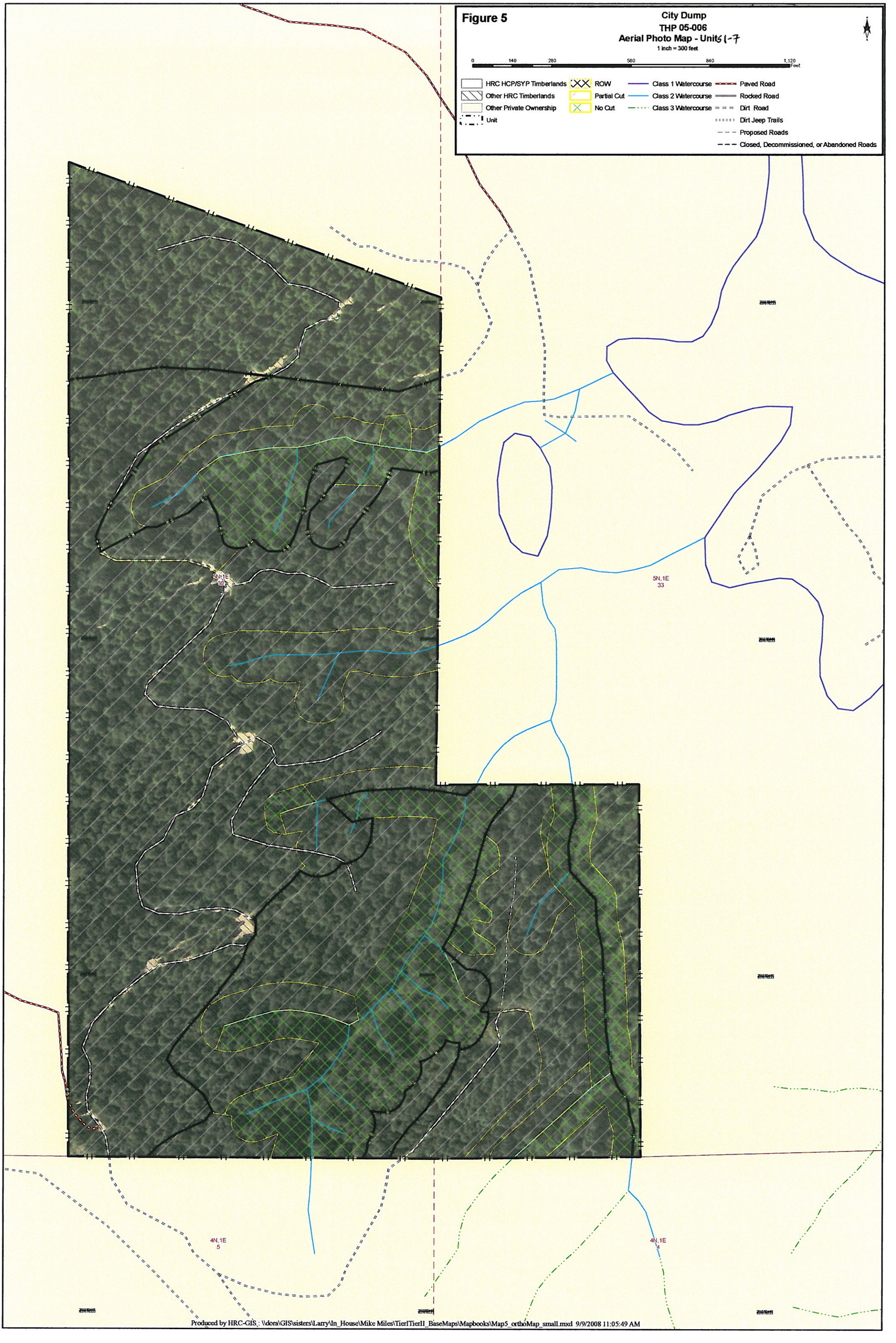
Figure 5
City Dump
THP 05-006
Aerial Photo Map - Units 1-7
1 inch = 300 feet
0
140
280
560
840
1,120
Feet
HRC HCP/SYP Timberlands
Other HRC Timberlands
Other Private Ownership
Unit
ROW
Partial Cut
No Cut
Class 1 Watercourse
Class 2 Watercourse
Class 3 Watercourse
Paved Road
Rocked Road
Dirt Road
Dirt Jeep Trails
Proposed Roads
Closed, Decommissioned, or Abandoned Roads
5N,1E
33
4N,1E
5
4N,1E
4
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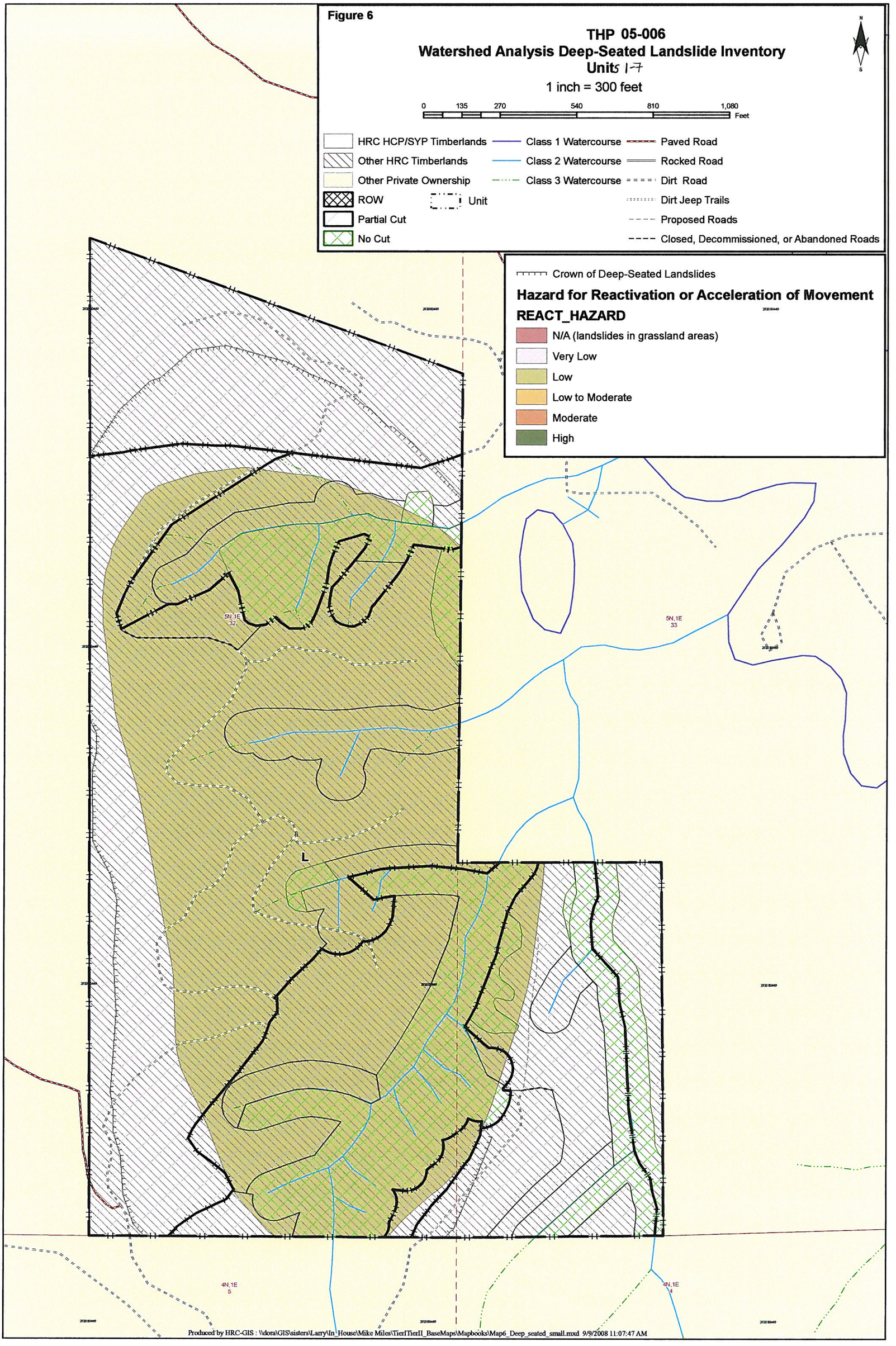
Figure 6
THP 05-006
Watershed Analysis Deep-Seated Landslide Inventory
Units 1-7
1 inch = 300 feet
0 135 270 540 810 1,080
Feet
N
S
HRC HCP/SYP Timberlands
Other HRC Timberlands
Other Private Ownership
ROW
Partial Cut
No Cut
Unit
Class 1 Watercourse
Class 2 Watercourse
Class 3 Watercourse
Paved Road
Rocked Road
Dirt Road
Dirt Jeep Trails
Proposed Roads
Closed, Decommissioned, or Abandoned Roads
Crown of Deep-Seated Landslides
Hazard for Reactivation or Acceleration of Movement
REACT_HAZARD
N/A (landslides in grassland areas)
Very Low
Low
Low to Moderate
Moderate
High
5N,1E
32
5N,1E
33
4N,1E
5
4N,1E
4
L
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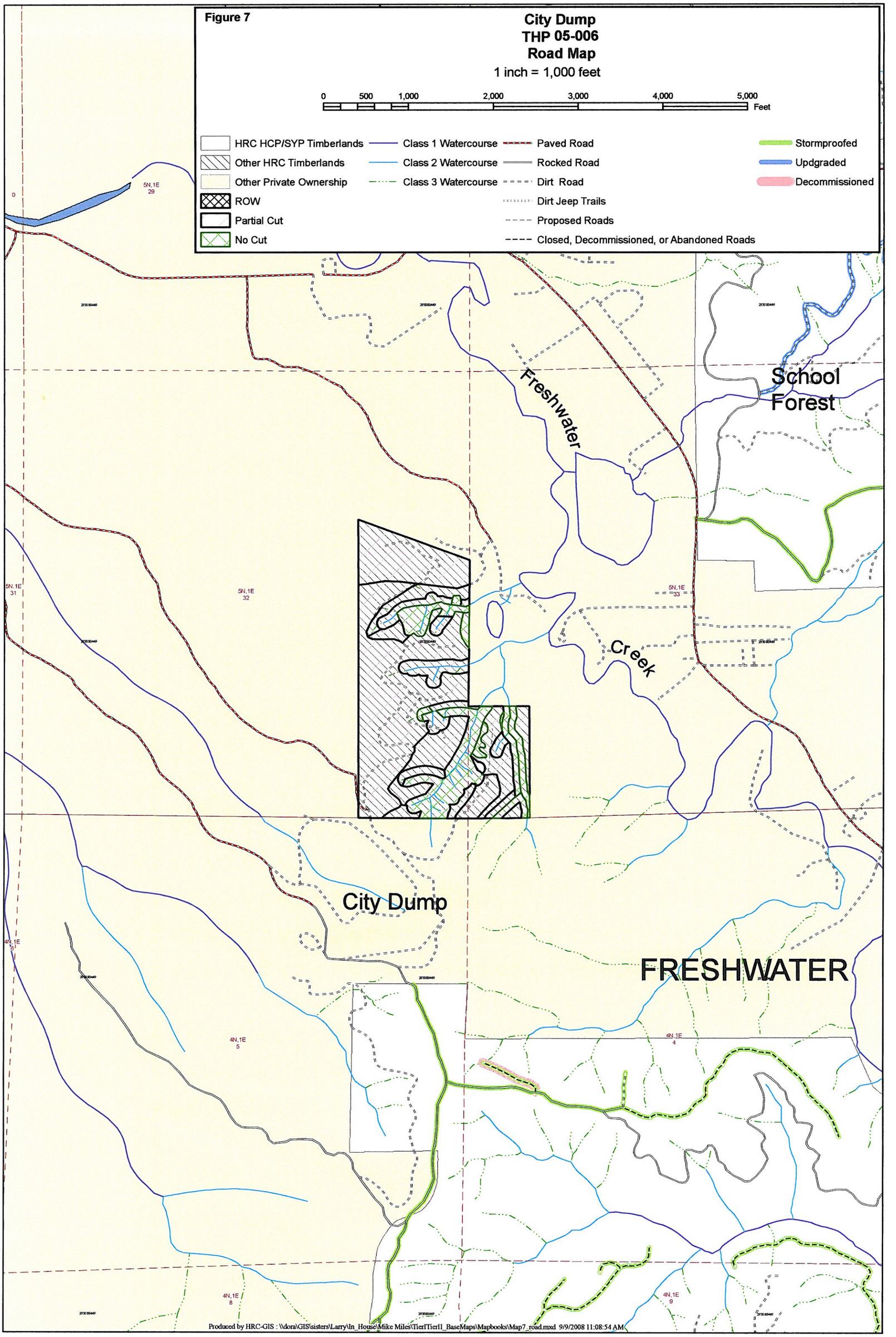
Figure 7
City Dump
THP 05-006
Road Map
1 inch = 1,000 feet
0
500
1,000
2,000
3,000
4,000
5,000
Feet
HRC HCP/SYP Timberlands
Other HRC Timberlands
Other Private Ownership
ROW
Partial Cut
No Cut
Class 1 Watercourse
Class 2 Watercourse
Class 3 Watercourse
Paved Road
Rocked Road
Dirt Road
Dirt Jeep Trails
Proposed Roads
Closed, Decommissioned, or Abandoned Roads
Stormproofed
Updgraded
Decommissioned
Freshwater
School Forest
Creek
City Dump
FRESHWATER
5N,1E 29
5N,1E 31
5N,1E 32
5N,1E 33
4N,1E 5
4N,1E 4
4N,1E 8
4N,1E 9
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