

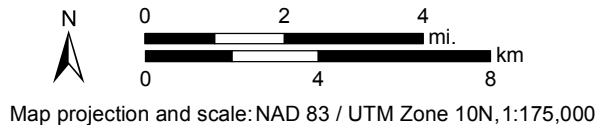
File path: S:\1005020\QA_GIS\Final_Figures\Figure_01-1.mxd; Date: 05/29/2014; User: Alex Remar, LCI

EXPLANATION

Seismic Reflection Survey

- 2011 AWD line
- 2011 AWD line and 2011 Vibroseis line
- 2011 Vibroseis line
- 2011 nodal receivers, no shotpoints
- 2011 nodal receiver array
- 2012 high-resolution survey receiver array

Note: Only selected line numbers are shown.



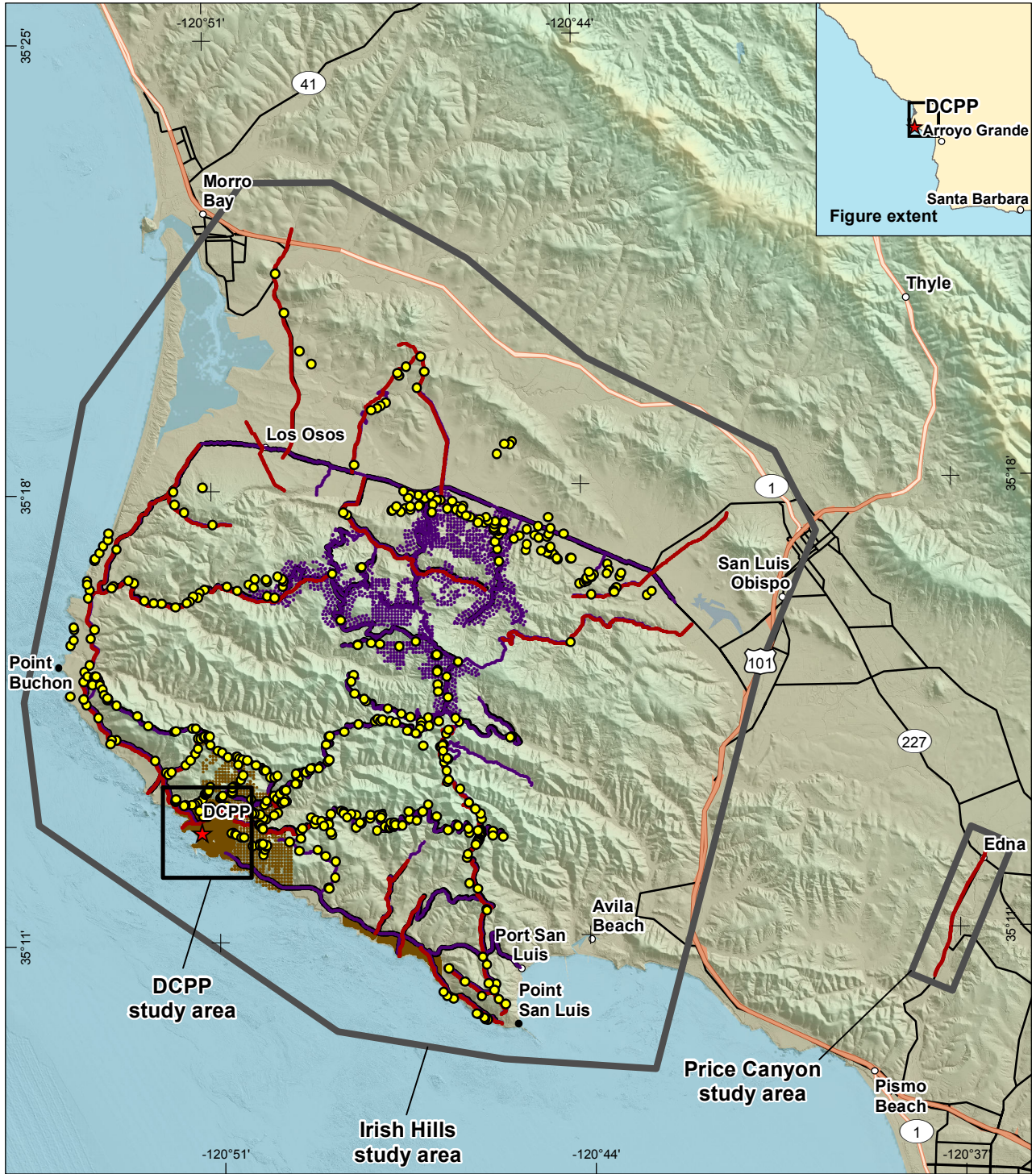
Study Areas and Onshore Seismic-Reflection Data Coverage

DCPP GEOLOGIC MAPPING PROJECT



Pacific Gas and Electric Company

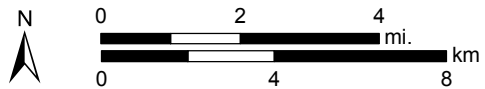
Figure 1-1



File path: S:\1005020QA_GIS\Final_Figures\Figure_03-1.mxd; Date: 05/29/2014; User: Alex Remar, LCI

EXPLANATION

- Geologic field station by GMP
- Seismic Reflection Survey**
- 2011 AWD line
- 2011 AWD line and 2011 Vibroseis line
- 2011 Vibroseis line
- 2011 nodal receivers, no shotpoints
- 2011 nodal receiver array
- 2012 high-resolution survey receiver array



Map projection and scale: NAD 83 / UTM Zone 10N, 1:175,000

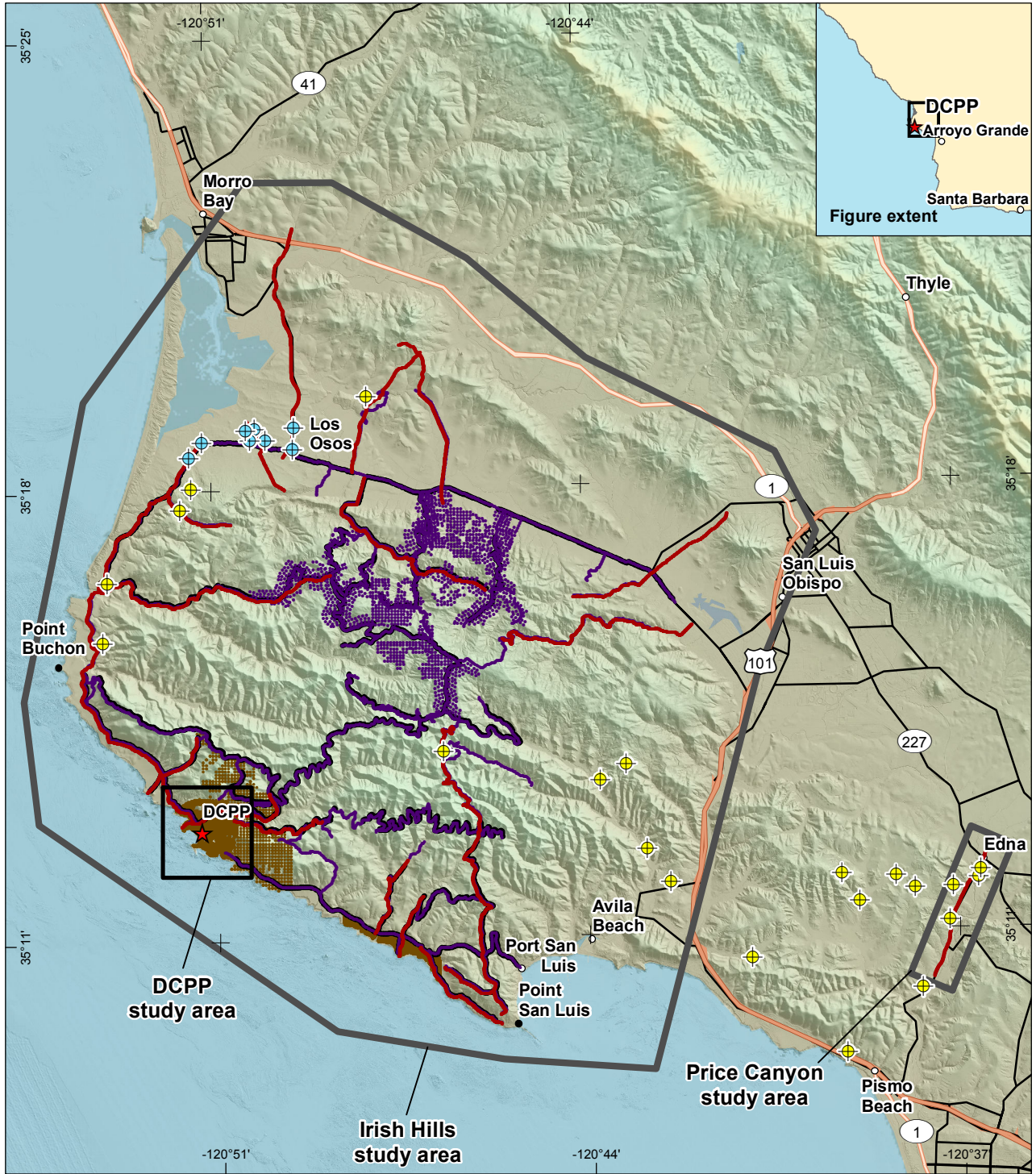
**Locations of New Geologic
Data Collection Sites**

DCPP GEOLOGIC MAPPING PROJECT



Pacific Gas and Electric Company

Figure 3-1



File path: S:\1005020QA_GIS\Final_Figures\Figure_03-2.mxd, Date: 05/29/2014, User: Alex Remar, LCI

EXPLANATION

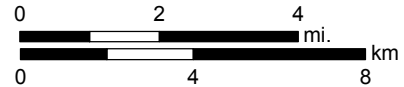
Wells

- Hydrogeologic well
- Oil well

Seismic Reflection Survey

- 2011 AWD line
- 2011 AWD line and 2011 Vibroseis line
- 2011 Vibroseis line
- 2011 nodal receivers, no shotpoints
- 2011 nodal receiver array
- 2012 high-resolution survey receiver array

Note: Well names are provided on Plate 1, Figure 3-9, and Appendix E figures.



Map projection and scale: NAD 83 / UTM Zone 10N, 1:175,000

Locations of Selected Wells

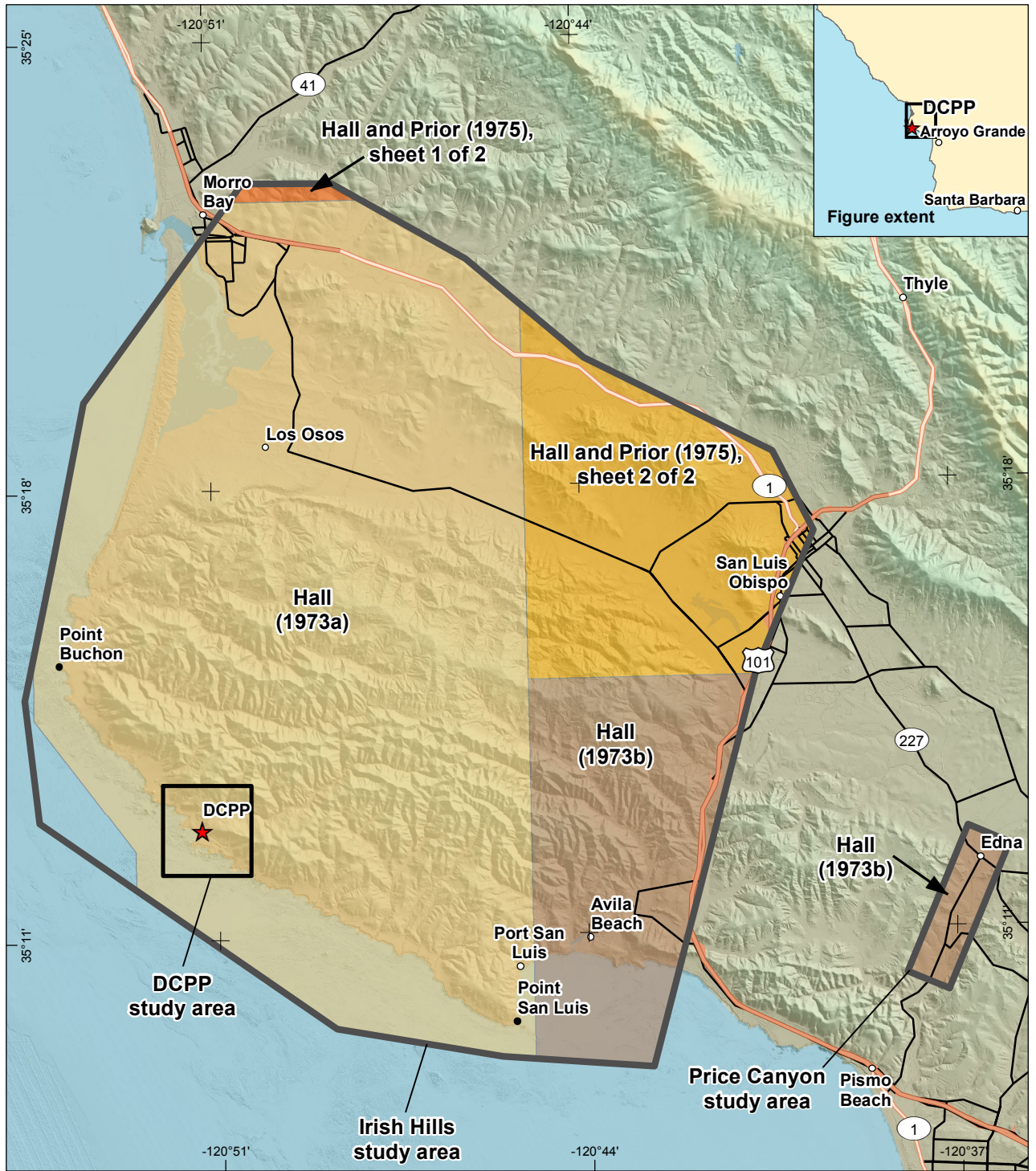
DCPP GEOLOGIC MAPPING PROJECT



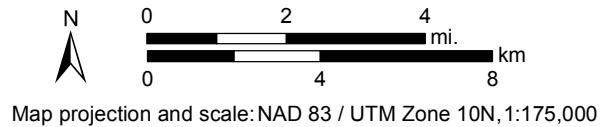
Pacific Gas and Electric Company


Figure 3-2

File path: S:\11005\020\QA_GIS\Final_Figures\Figure_03-3.mxd, Date: 05/29/2014, User: Alex Remar, LCI

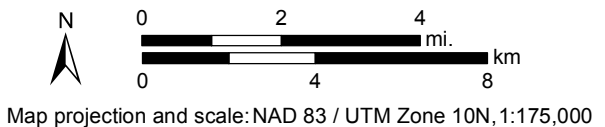
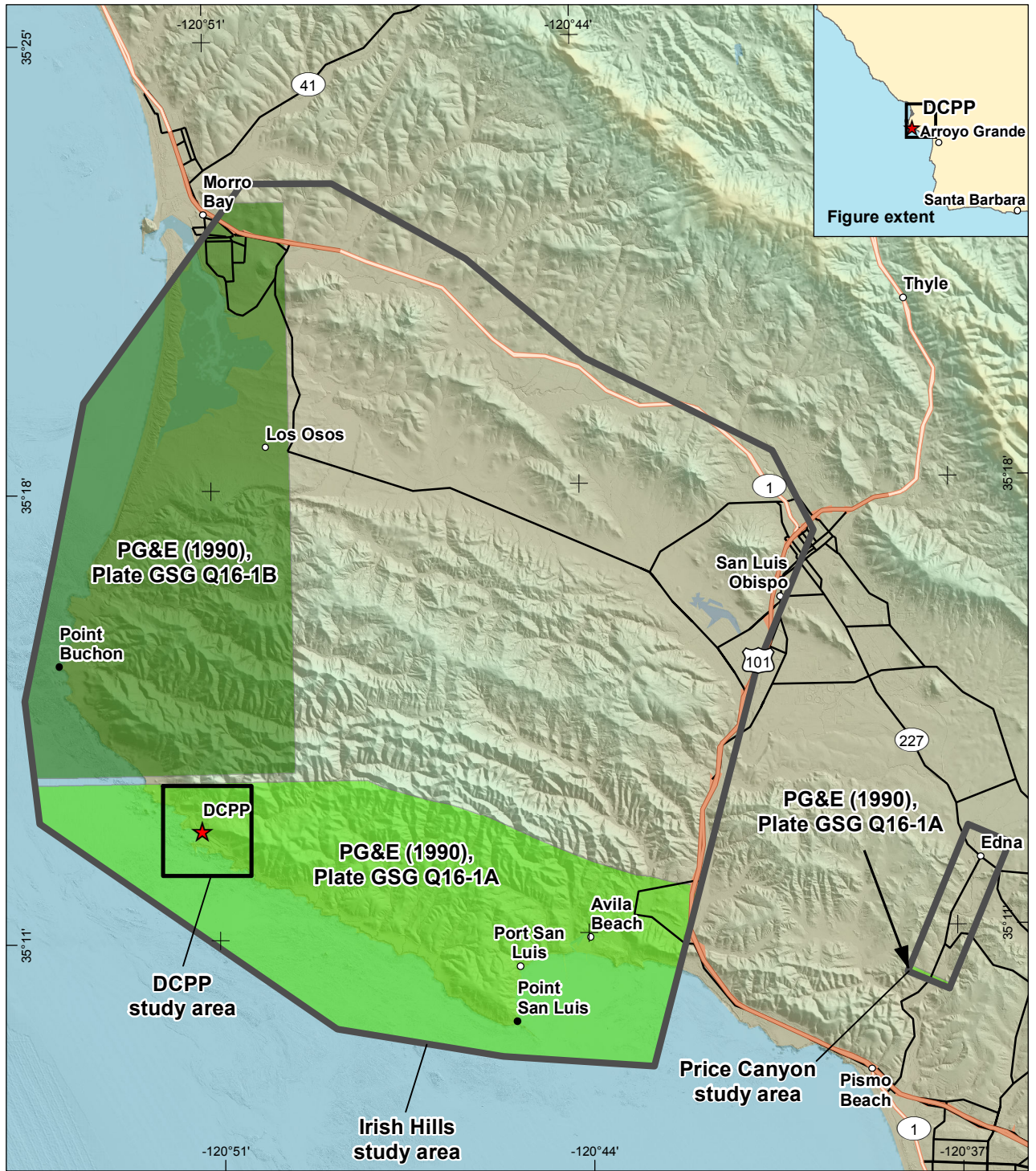



Note: Hall et al. (1979) covers the map areas of Hall (1973a) and Hall and Prior (1975).



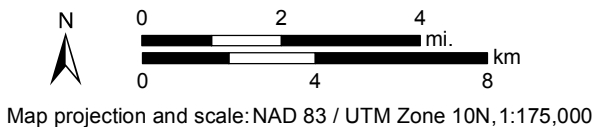
Geologic Maps by C.A. Hall Used in This Study	
DCPP GEOLOGIC MAPPING PROJECT	
 Pacific Gas and Electric Company	Figure 3-3


File path: S:\1005020\QA_GIS\Final_Figures\Figure_03-4.mxd, Date: 06/29/2014, User: Alex Remar, LCI



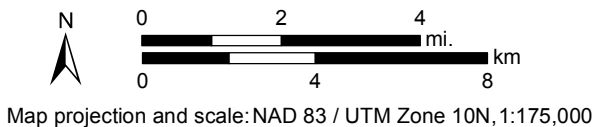
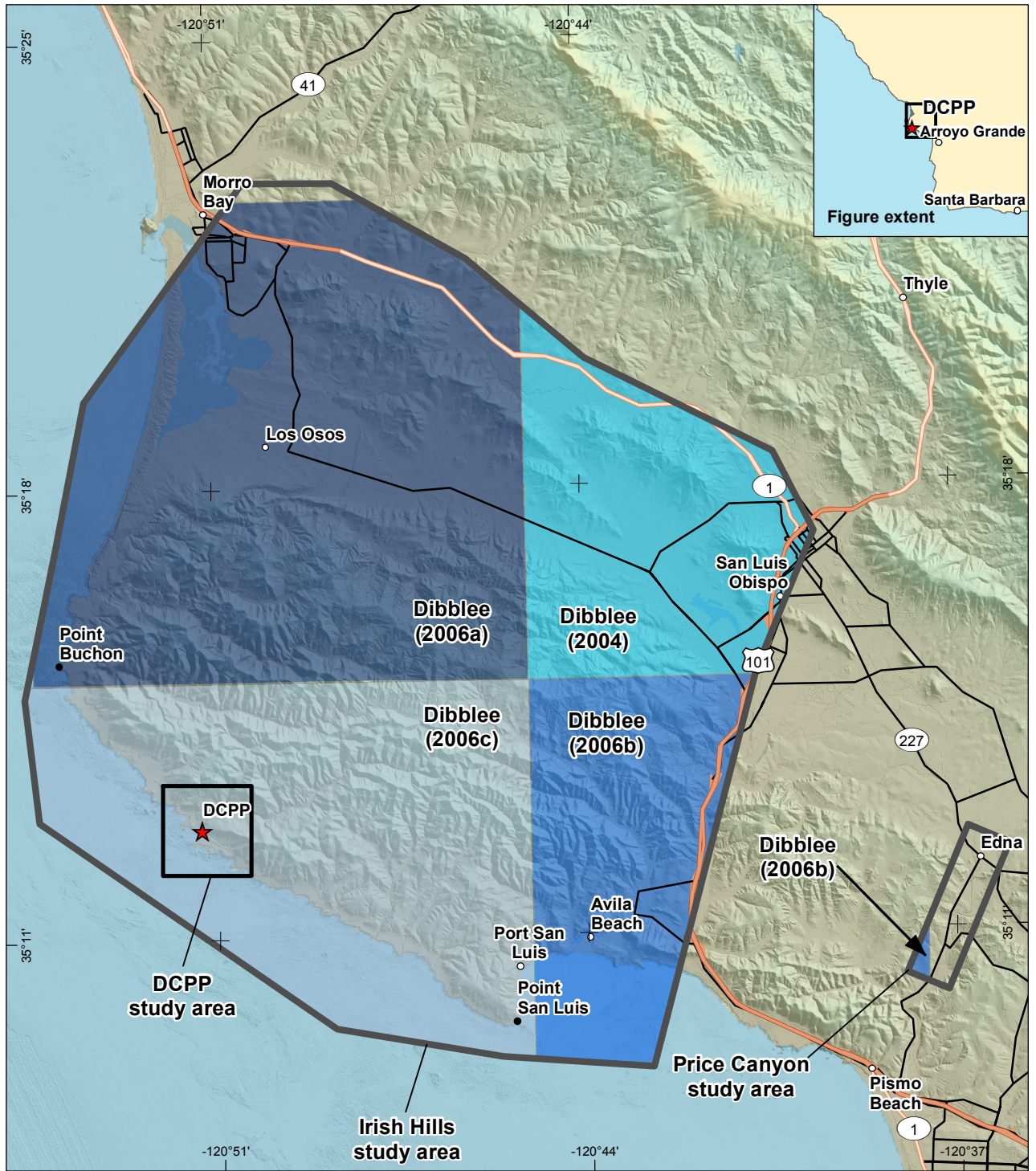
Geologic Maps Developed for the LTSP Used in This Study	
DCCP GEOLOGIC MAPPING PROJECT	
 Pacific Gas and Electric Company	Figure 3-4


File path: S:\1005020\QA_GIS\Final_Figures\Figure_03-5.mxd, Date: 06/29/2014, User: Alex Remar, LCI



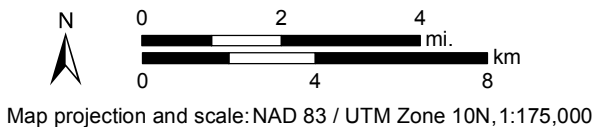
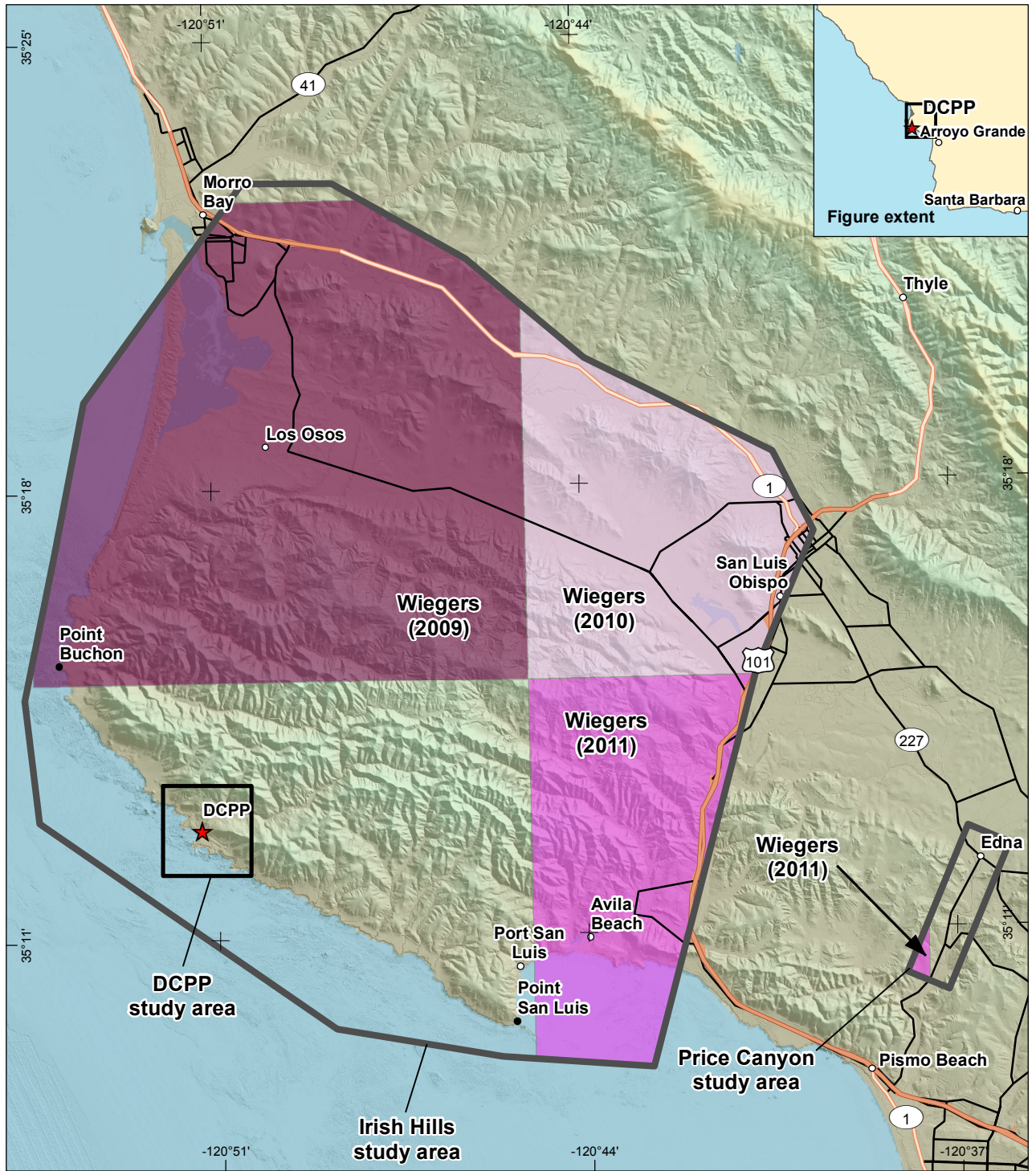
Map of the Los Osos Fault Zone by Lettis and Hall (1994) Used in This Study	
DCCP GEOLOGIC MAPPING PROJECT	
 Pacific Gas and Electric Company	Figure 3-5


File path: S:\1005020\QA_GIS\Final_Figures\Figure_03-6.mxd, Date: 06/29/2014, User: Alex Remar, LCI



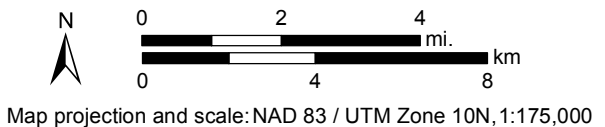
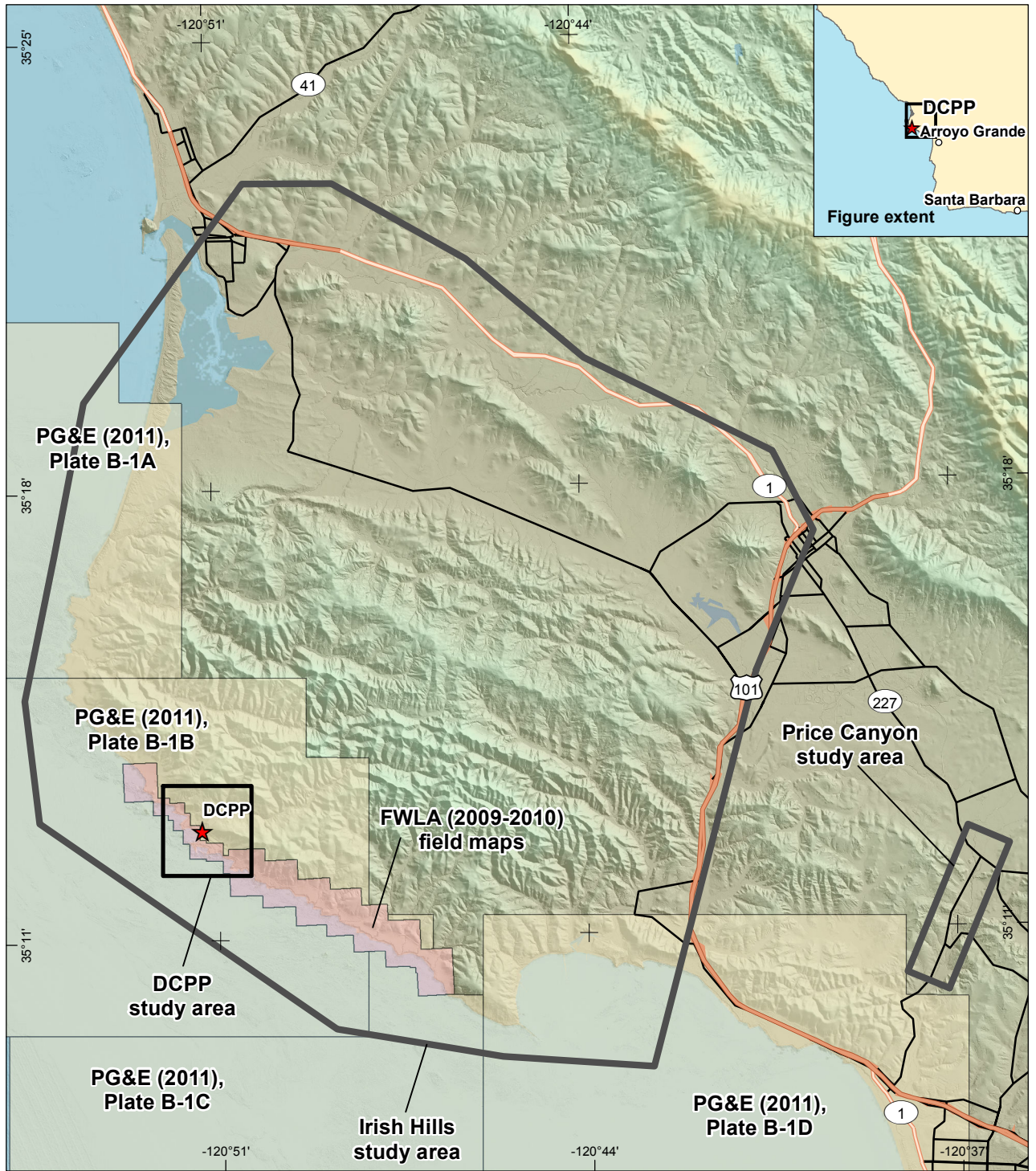
Geologic Maps by T.W. Dibblee Reviewed for This Study	
DCPP GEOLOGIC MAPPING PROJECT	
 Pacific Gas and Electric Company	Figure 3-6

File path: S:\1005020\QA_GIS\Final_Figures\Figure_03-7.mxd, Date: 06/29/2014, User: Alex Remar, LCI




Geologic Maps by M.O. Wiegiers Used in This Study	
DCPP GEOLOGIC MAPPING PROJECT	
 Pacific Gas and Electric Company	Figure 3-7

File path: S:\1005020\QA_GIS\Final_Figures\Figure_03-8.mxd, Date: 06/29/2014, User: Alex Remar, LCI

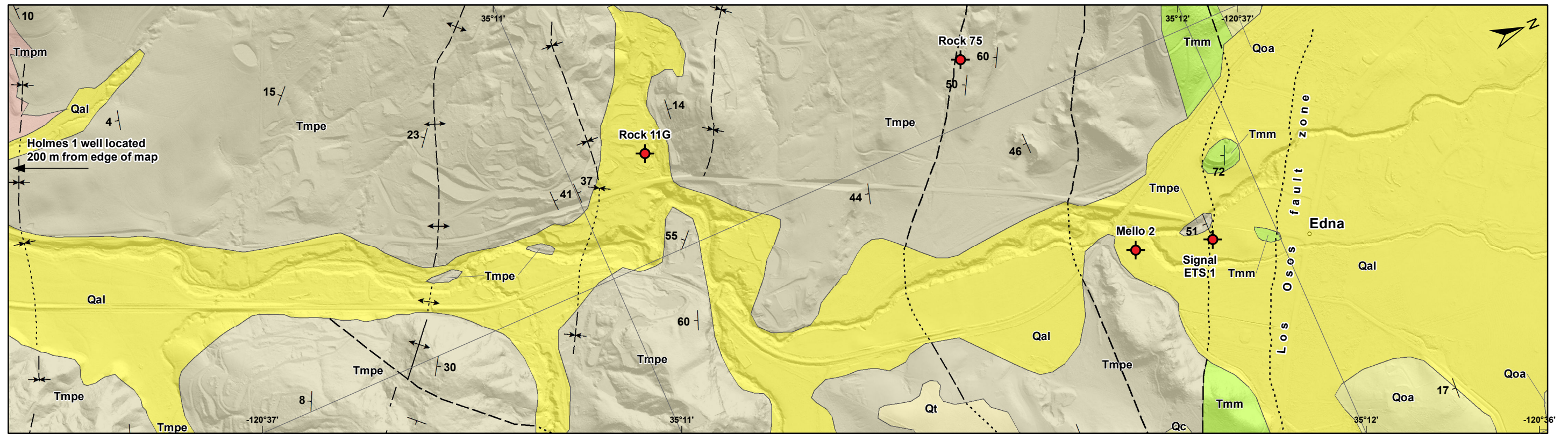


Offshore Maps Produced for the Shoreline Fault Zone Report (PG&E, 2011) and Unpublished Onshore Map Data Collected in 2009 and 2010 for PG&E

DCPP GEOLOGIC MAPPING PROJECT

 Pacific Gas and Electric Company	Figure 3-8
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File path: S:\1005\QA_GeoDatabase\Geology_maps\2014_Geologic_Mapping_Project\Figure_03-9.mxd; Date: 06/20/2014; User: Serkan Bozkurt, LCI

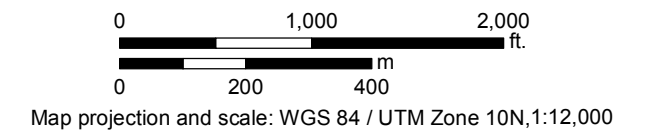
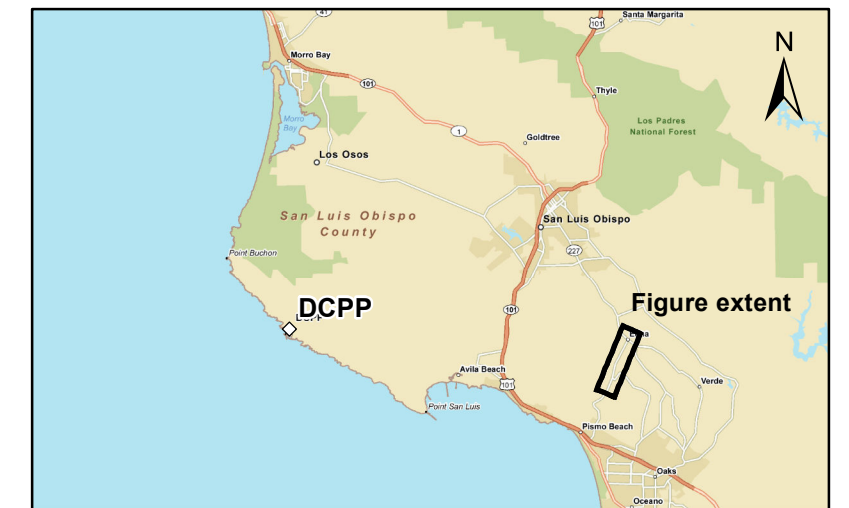


EXPLANATION

- Geologic Units**
- Quaternary**
 - Qal** **Alluvial deposits:** unlithified silt, sand, and gravel valley fill deposited during overbank flooding, channel backfilling, and construction of debris flow levees.
 - Qt** **Fluvial terrace deposits:** unlithified silt, sand, and gravel deposited in stream valleys.
 - Qoa** **Older alluvial deposits:** weakly lithified siltstone, sandstone, and conglomerate deposited as valley fill in the Pleistocene.
 - Neogene**
 - Miocene**
 - Pismo Formation**
 - Tmpm** **Miguelito Member:** siltstone and claystone, brown, thinly bedded, moderately well-lithified, includes rare to common intervals of siliceous and dolomitic siltstone, opaline and porcelaneous shale, and bituminous sandy siltstone.
 - Tmpe** **Edna Member:** sandstone, brown, thinly bedded to unstratified, weakly to moderately well-lithified, includes intervals of bituminous sandstone.
 - Tmm** **Monterey Formation:** tuffaceous, siliceous, and diatomaceous siltstone and shale, gray and brown (weathers to chalky white), thinly bedded and well-lithified, includes common chert laminations.

- Geologic Structures**
- Syncline:** solid where well located, dashed where approximate, dotted where concealed.
 - Anticline:** solid where well located, dashed where approximate, dotted where concealed.
 - Fault:** dashed where approximate, dotted where concealed.
 - Inclined bedding**
 - Other**
 - Oil and gas exploration well

Note: No field stations were collected in the Price Canyon study area.



Sources: Hall (1973b), Lettis and Hall (1994), and PG&E (1990).


Geologic Map of the Price Canyon Study Area

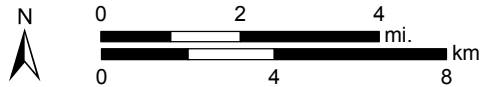
DCPP GEOLOGIC MAPPING PROJECT

Pacific Gas and Electric Company Figure **3-9**



EXPLANATION

 Area where significant revisions were made to geologic map



Map projection and scale: NAD 83 / UTM Zone 10N, 1:175,000

Locations of Significant Revisions to Existing Geologic Maps

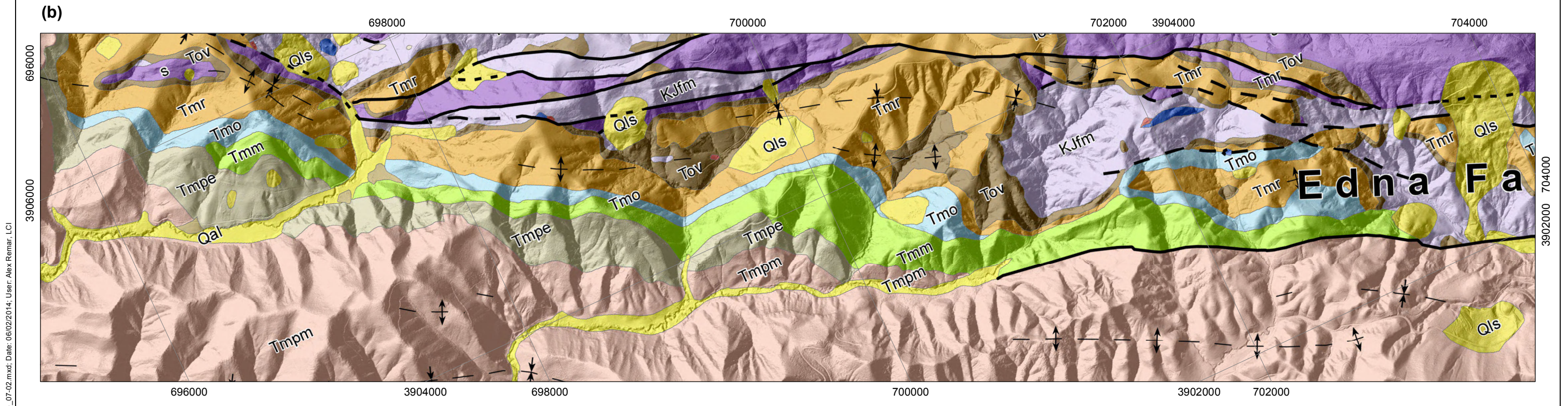
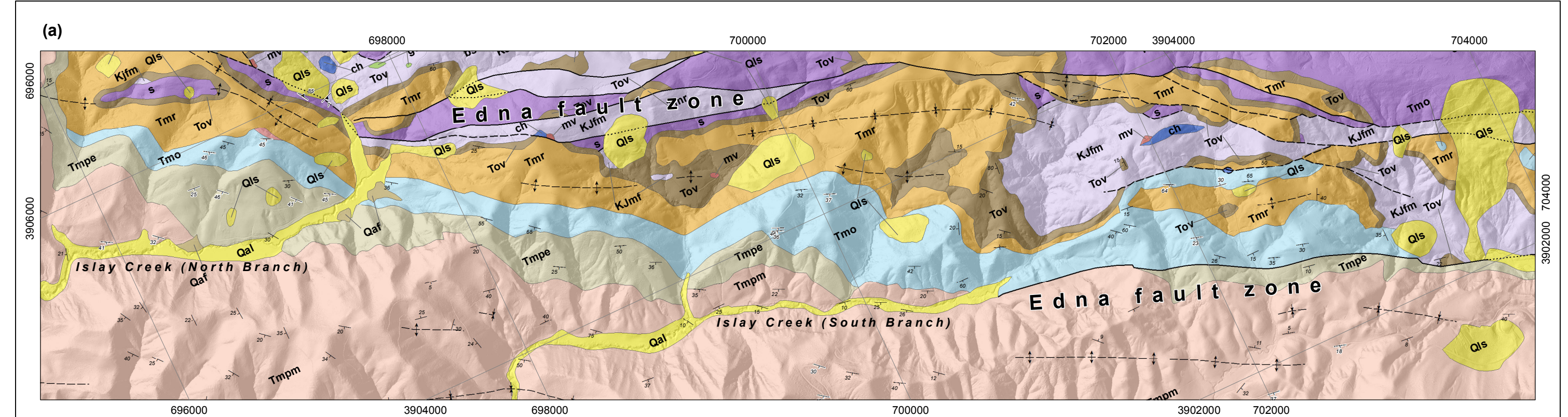
DCPP GEOLOGIC MAPPING PROJECT



Pacific Gas and Electric Company

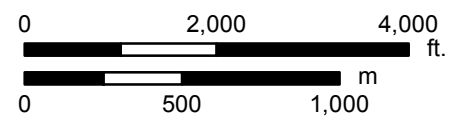
Figure 7-1

File path: S:\11005020\QA_GIS\Final_Figures\Figure_07-01.mxd; Date: 05/29/2014; User: Alex Remar, LCI



Changes:

- 1) Reclassified Monterey Formation to Obispo Formation or Pismo Formation, Edna Member (across the figure extent).
- 2) Reclassified Pismo Formation, Miguelito Member to Pismo Formation, Edna Member along the Edna fault zone (locally at the southeast end of the figure).
- 3) Added bedding attitudes (throughout the figure extent).



Notes:
 - Panel A map explanation on Plate 1.
 - Creek names added to Panel A for reference.

Map projection and scale: NAD 83 / UTM Zone 10N, 1:24,000

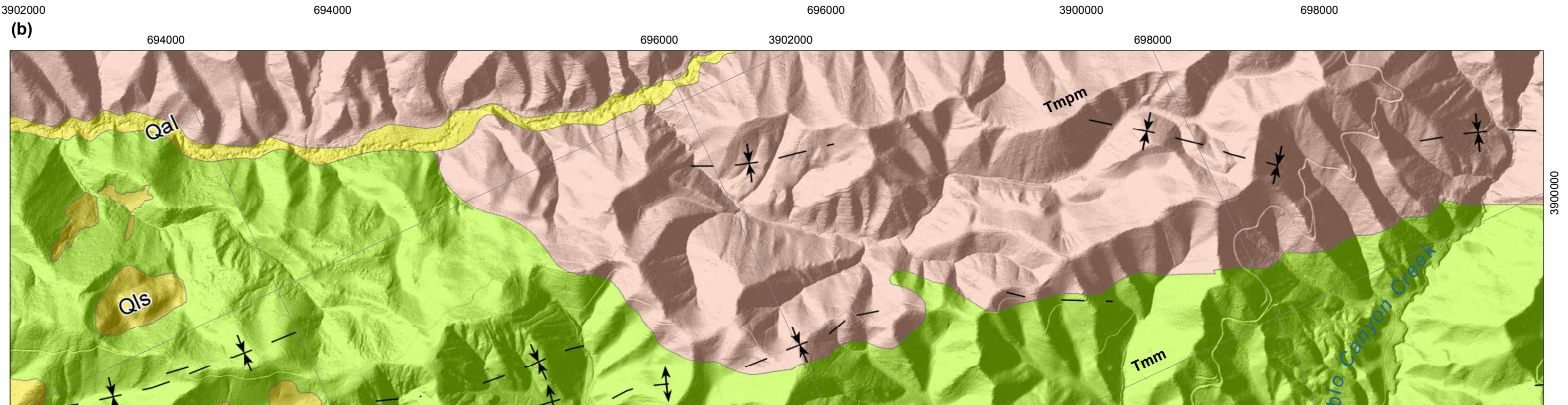
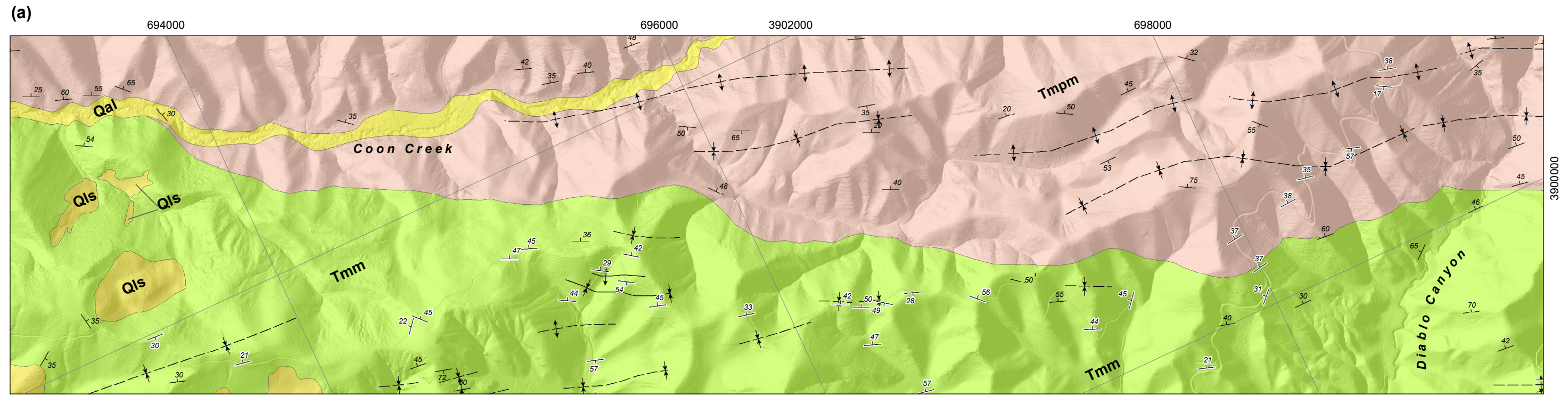
Comparison of (a) Revised and (b) Previous (AMEC, 2012a) Mapping, NE Margin of Pismo Syncline

DCPP GEOLOGIC MAPPING PROJECT

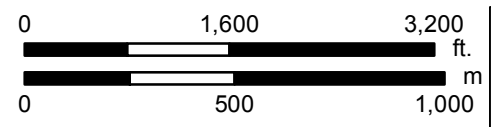


Figure 7-2

File path: S:\11005\020\QA_GIS\Final_Figures\Figure_07-02.mxd; Date: 06/02/2014; User: Alex Remar, LCI



Changes:
 1) Modified contact between Monterey Formation and Pismo Formation (central and northwest portion of the figure).
 2) Added bedding attitudes and map-scale folds (throughout the figure extent).



Map projection and scale: NAD 83 / UTM Zone 10N, 1:18,000

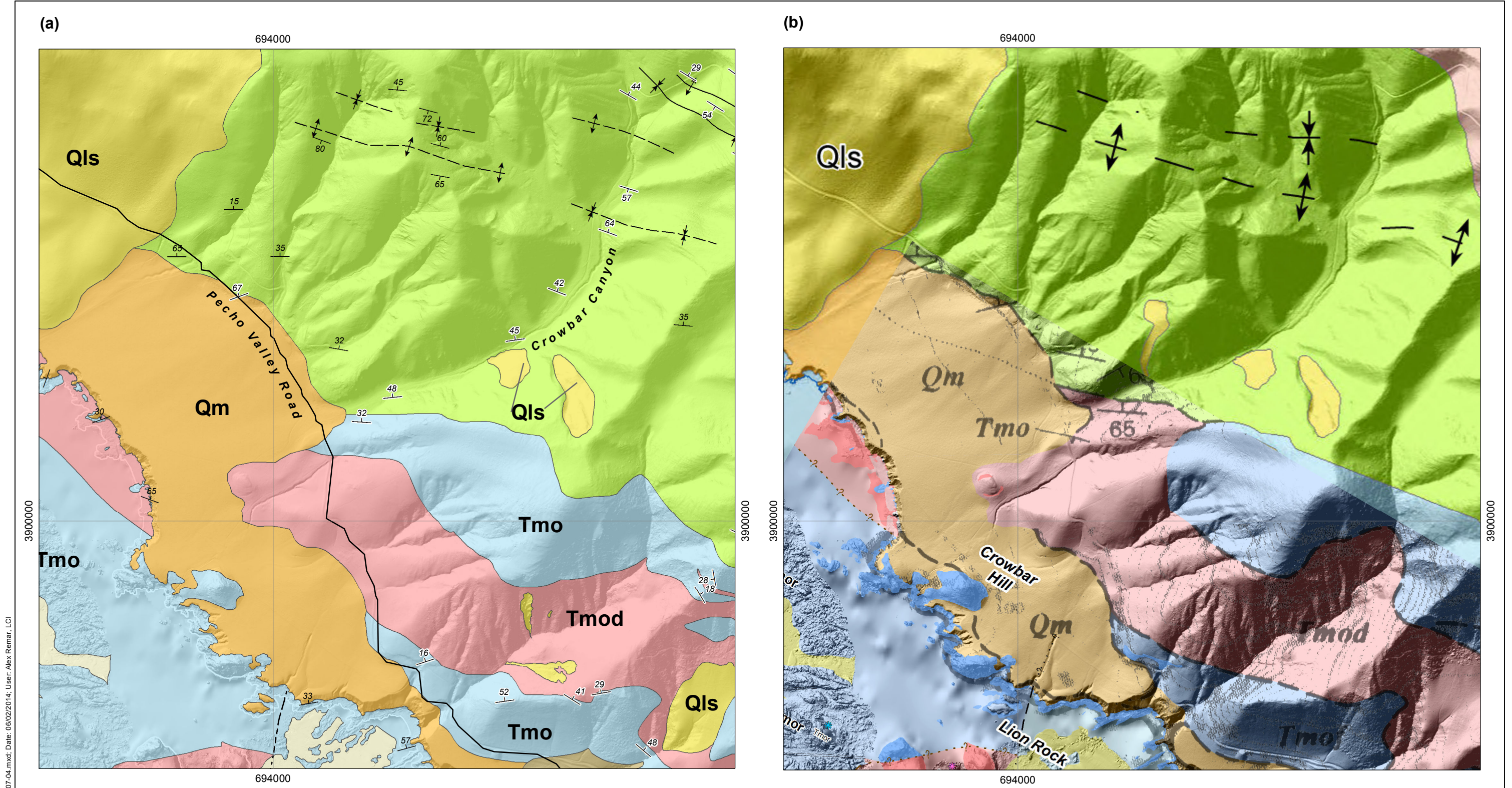
Comparison of (a) Revised and (b) Previous (AMEC, 2012a) Mapping, Pismo Formation/Monterey Formation Contact

DCPP GEOLOGIC MAPPING PROJECT



Figure 7-3

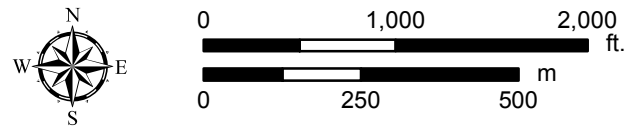
Notes:
 - Panel A map explanation on Plate 1.
 - Creek names added to Panel A for reference.



File path: S:\11005\020\QA_GIS\Final_Figures\Figure_07-04.mxd; Date: 06/02/2014; User: Alex Remar, LCI

Changes:

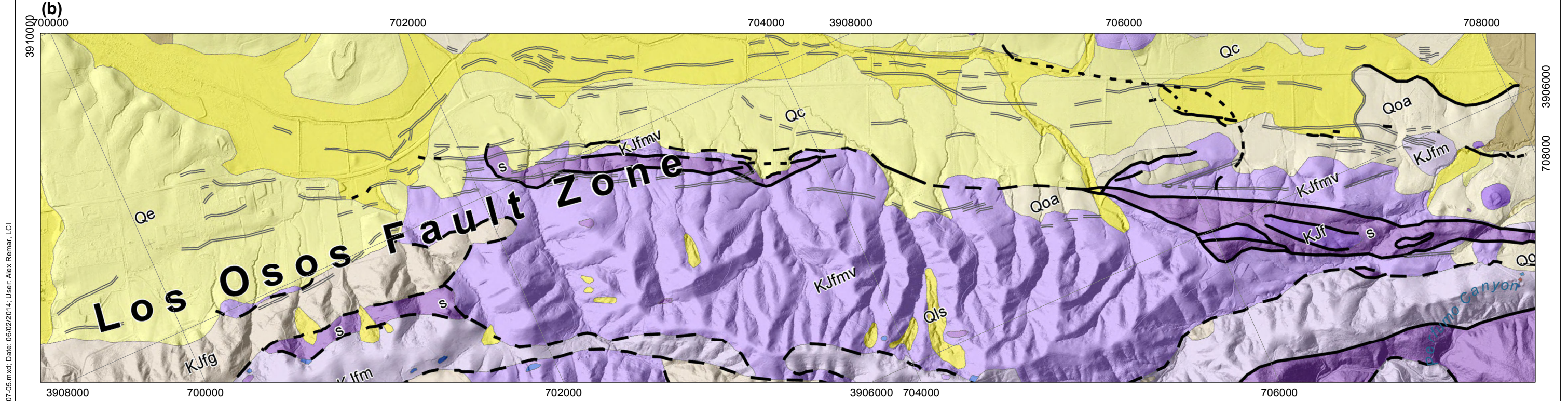
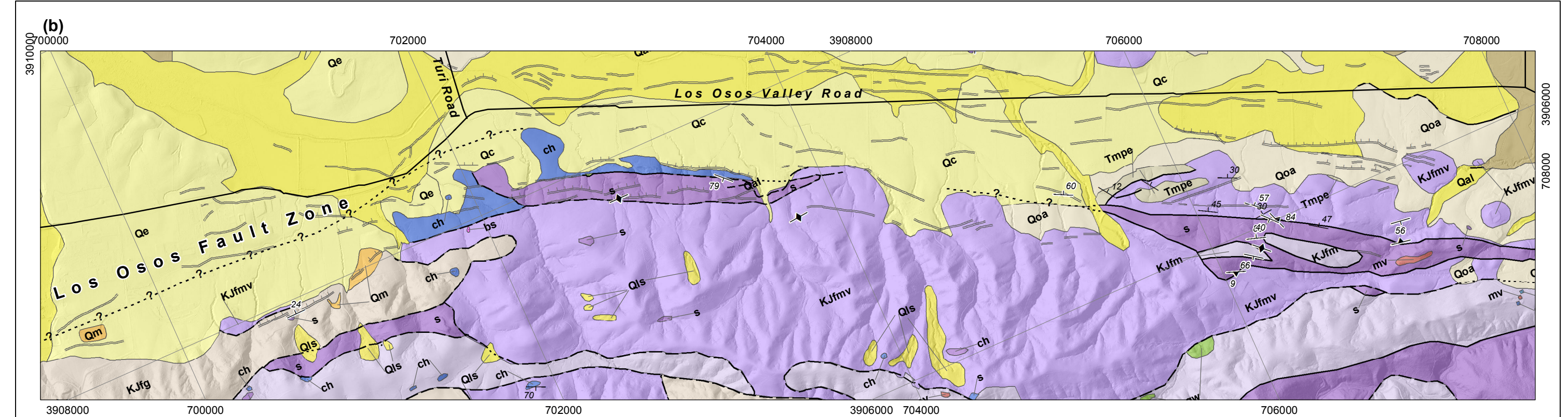
- 1) Modified contact between Monterey Formation and Obispo Formation (east edge of the figure).
- 2) Modified contact between Obispo Formation diabase and Obispo Formation volcanics (southeastern portion of the figure).
- 3) Added bedding attitudes and map-scale folds (throughout the figure extent).



Notes:
 - Panel A map explanation on Plate 1.
 - Roads and creeks added to Panel A for reference.

Map projection and scale: NAD 83 / UTM Zone 10N, 1:12,000

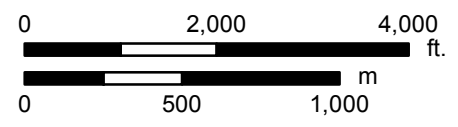
Comparison of (a) Revised and (b) Previous (PG&E, 2011) Mapping, Monterey Formation/Obispo Formation Contact	
DCPP GEOLOGIC MAPPING PROJECT	
Pacific Gas and Electric Company	Figure 7-4



File path: S:\1005\020\QA_GIS\Final_Figures\Figure_07-05.mxd; Date: 06/02/2014; User: Alex Remar, LCI

Changes:

- 1) Modified fault traces within Franciscan Complex rocks (central portion of figure).
- 2) Mapped chert (ch) within previously mapped Franciscan Complex metavolcanics and Quaternary deposits (northwestern portion of the figure).
- 3) Modified extent of serpentinite (s) within previously mapped Franciscan Complex metavolcanics (northwestern portion of the figure).
- 4) Mapped marine terrace deposits (Qm) (northwestern end of the figure).
- 5) Modified locations of lineaments and faults (minor modifications; throughout the figure extent).
- 6) Added bedding attitudes (across the central portion of the figure).



Notes:
 - Panel A map explanation on Plate 1.
 - Roads added to Panel A for reference.

Map projection and scale: NAD 83 / UTM Zone 10N, 1:24,000

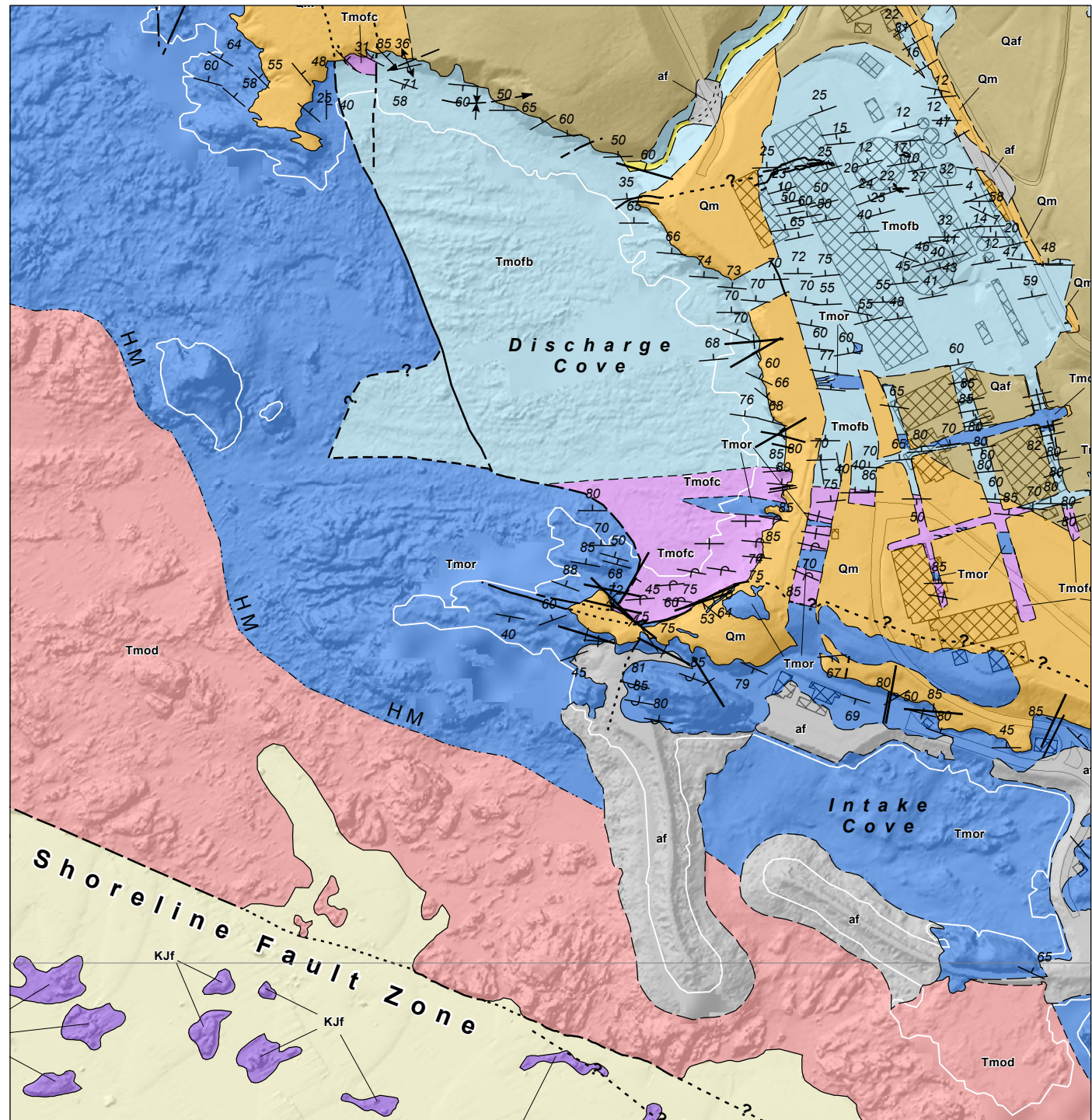
Comparison of (a) Revised and (b) Previous (AMEC, 2012a) Mapping, Los Osos Fault Zone

DCPP GEOLOGIC MAPPING PROJECT

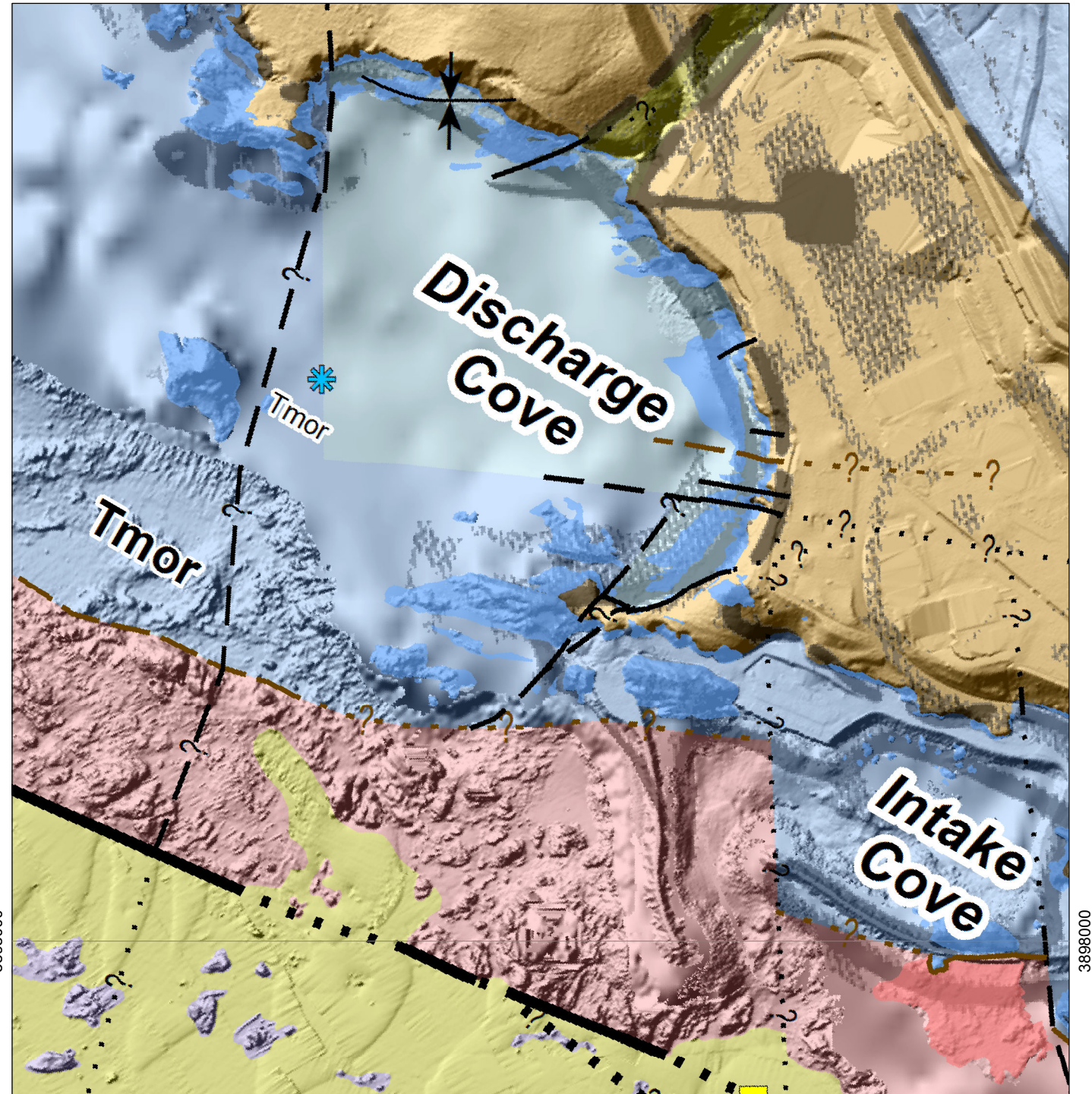


Figure 7-5

(a)

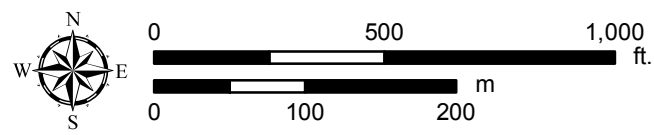


(b)



Changes:

- 1) Added extent of Obispo Formation previously exposed and mapped beneath DCP (eastern portion of figure).
- 2) Subdivided Obispo Formation tuffs and volcaniclastics into tuffaceous resistant subunit (Tmor), bedded fine-grained subunit (Tmofc), and bedded coarser-grained volcaniclastic subunit (Tmofb). (throughout the figure extent)
- 3) Added bedding attitudes and faults (throughout the figure extent).
- 4) Modified interpretation of Discharge Cove faults and stratigraphy based on additional Kelpfly MBES data (central and northwestern portion of figure).
- 5) Modified contact between Obispo Formation diabase (Tmod) and tuffaceous, resistant Obispo Formation (Tmor) based on helicopter magnetic survey data (across the central portion of the figure).



Note: Panel A map explanation on Plate 2.

Map projection and scale: NAD 83 / UTM Zone 10N, 1:5,000

Comparison of (a) Revised and (b) Previous (PG&E, 2011) Mapping, Offshore of DCP

DCPP GEOLOGIC MAPPING PROJECT

	Pacific Gas and Electric Company	Figure 7-6
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File path: S:\11005\020\QA_GIS\Final_Figures\Figure_07-06.mxd; Date: 06/02/2014; User: Alex Remar, LCI

(a)



Image Source: Composite DEM, version 7 (DCPP Geodatabase, 2013)
 Artificial sunlight azimuth and inclination (degrees): 315 / 45

(b)

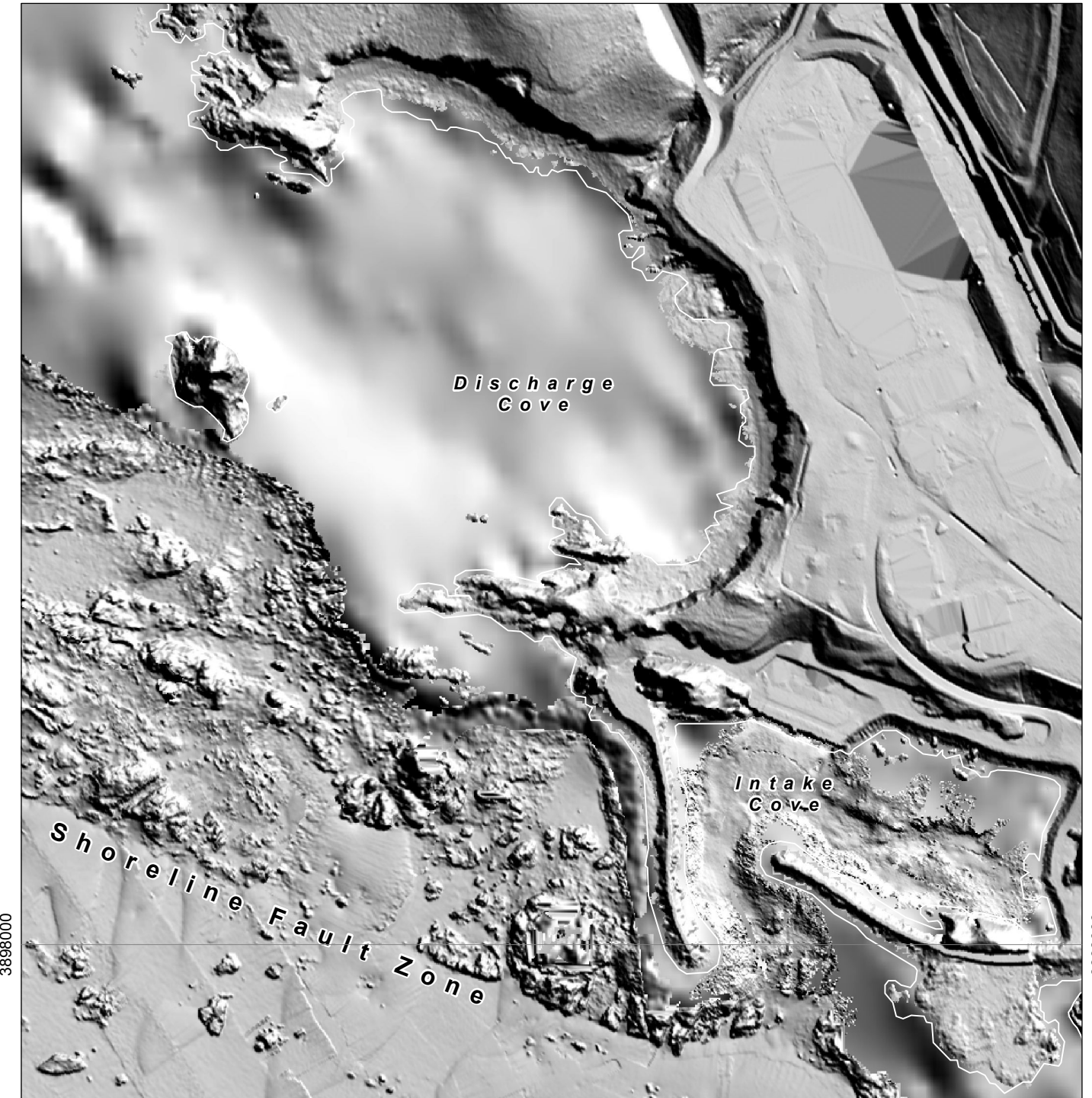
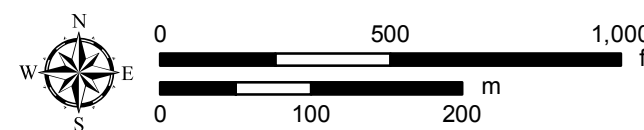


Image Source: Composite DEM, version 6 (DCPP Geodatabase, 2011)
 Artificial sunlight azimuth and inclination (degrees): 045 / 45



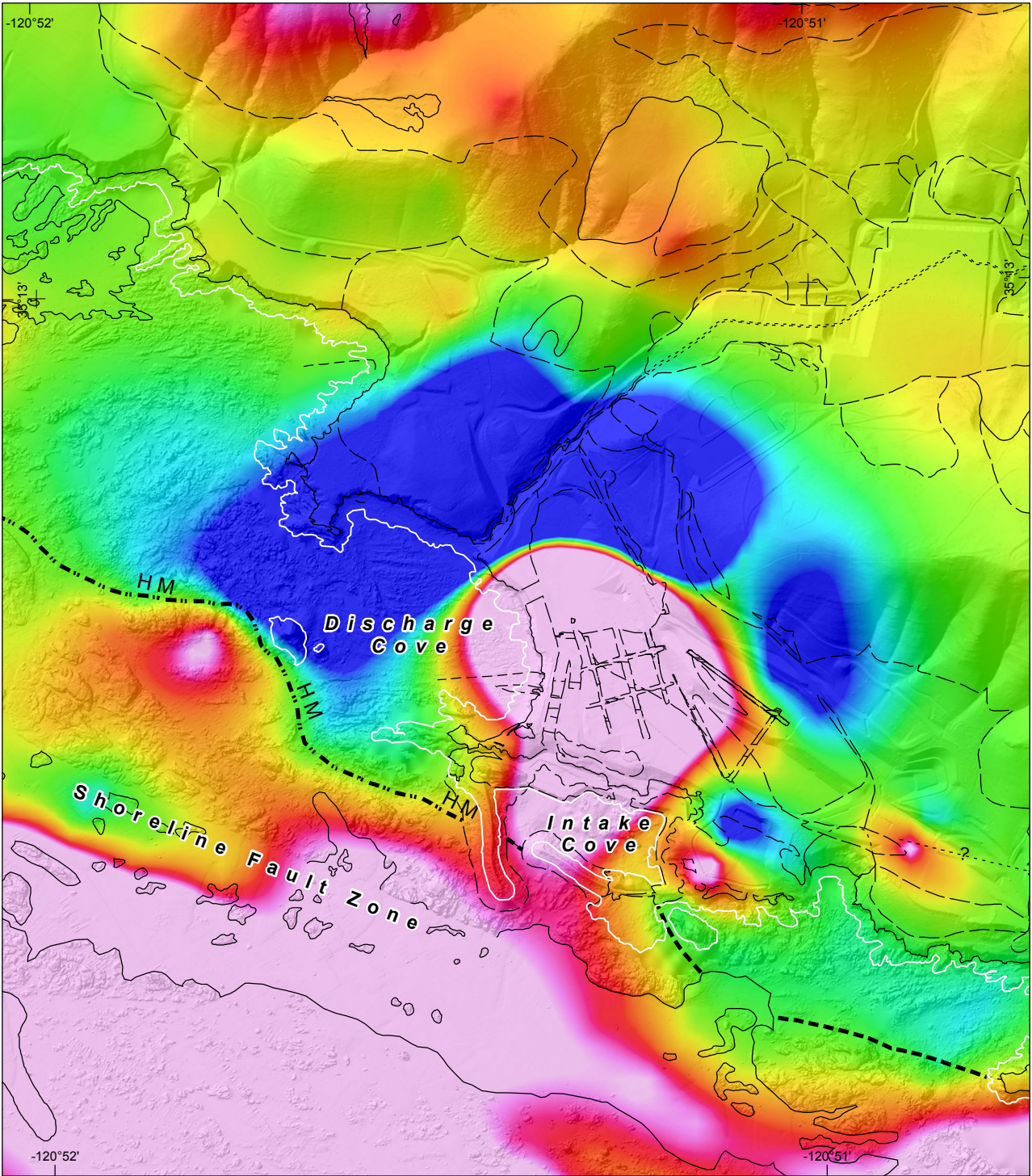
Map projection and scale: NAD 83 / UTM Zone 10N, 1:5,000

**Comparison of (a) Revised and
 (b) Previous (PG&E, 2011) Artificial
 Hillshade Images of the Discharge
 Cove Area**

DCPP GEOLOGIC MAPPING PROJECT

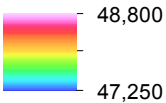


Figure 7-7



EXPLANATION

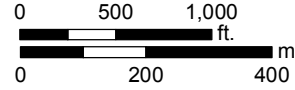
Total Magnetic Intensity (nT)



Geologic Contacts

T_{mod} / T_{mor} contact defined by:

- HM Helicopter Magnetic and MBES data
- Onshore mapping and MBES data
- Other geologic contacts



Map projection and scale: NAD 83 / UTM Zone 10N, 1:12,000

Helicopter Magnetic Survey Data in the DCPG Area and Inferred Geologic Contact between T_{mod} and T_{mor}

DCPP GEOLOGIC MAPPING PROJECT



Figure 7-8

File path: S:\10051020\QA_GIS\Final_Figures\Figure_07-08.mxd; Date: 06/03/2014; User: Alex Remar, LCI

Notes:
 - Magnetic data are from Langenheim et al. (2012).
 - See Plate 2 for geologic units and explanation of geologic contacts.