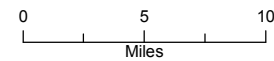


**LEGEND**

- |                            |   |                      |
|----------------------------|---|----------------------|
| Sierrita Property Boundary | <b>Surface Management</b>               | Indian Reservation   |
| Counties                   | Bureau of Land Management               | Military             |
| Cities                     | U.S. Forest Service (N.F.)              | Local or State Parks |
| Major Road                 | National Park Service (N.P.S.)          | State Trust Land     |
| River/Stream               | U.S. Fish and Wildlife Service (N.W.R.) | Private              |
|                            |   | Other                |

Source:  
Base Map - ALRIS 1997 - 2007






**Figure 2-1**  
**Site Location**  
*Freeport-McMoRan*  
*Sierrita Inc.*

Figure 2-2  
Sierrita Facility Map

Freeport-McMoRan Sierrita Inc.



**Legend**

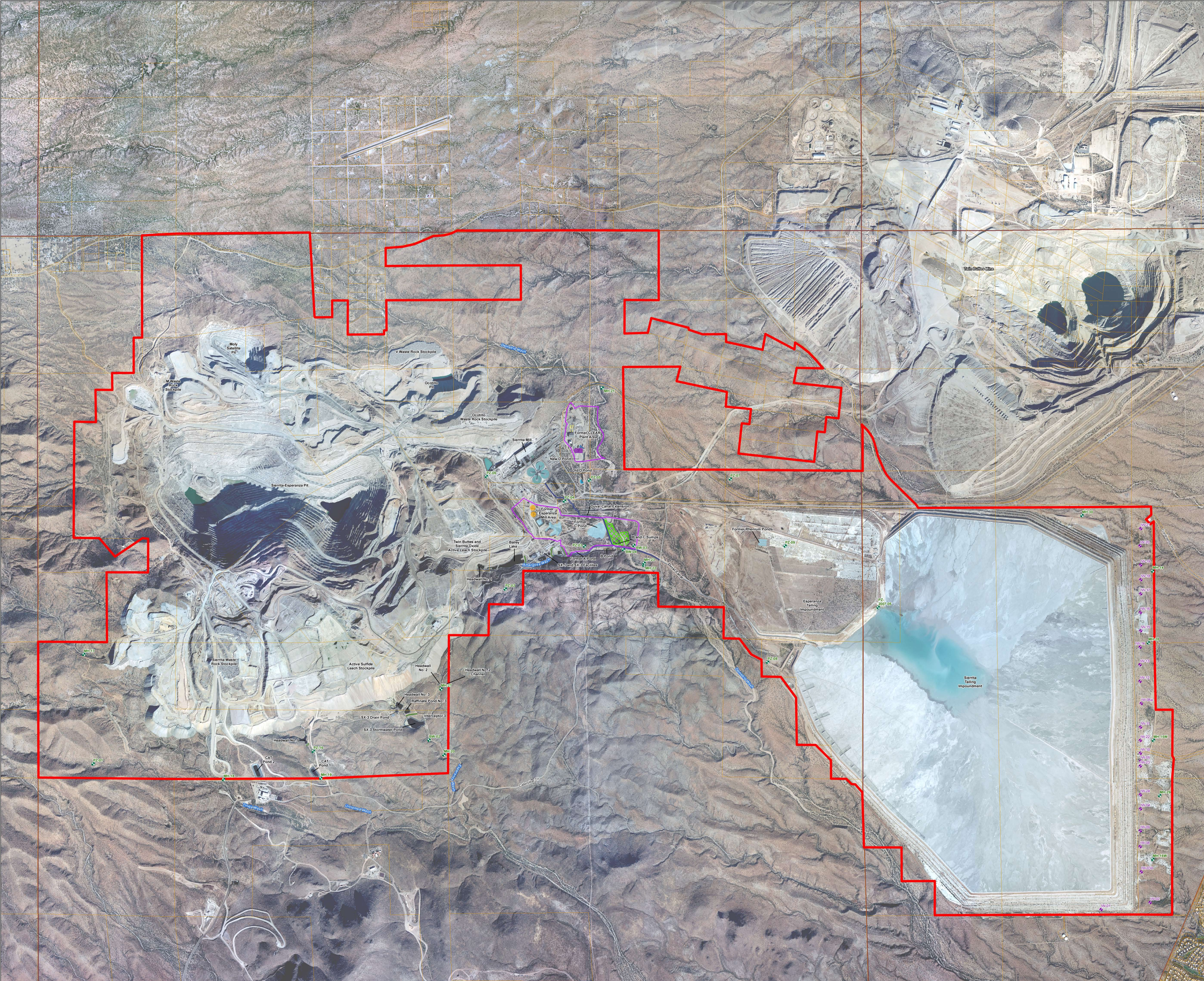
-  Monitor Wells and Piezometers
-  Pumping/Interceptor Wells
-  Parcel Boundary

**Sierrita Facilities**

-  Area of Interest
-  Former CLEAR Plant Tanks
-  Former Thickener
-  Former Mill Building
-  Former Pond
-  Former Evaporation Pond
-  Former E Pond
-  Old D Pond
-  Channel
-  Drain
-  404 Mitigation Area

**General Features**

-  Sierrita Property Boundary
-  Township and Range Boundary



Source - Cooper Aerial Co. 2006  
 Base Map - AUNIS 1997 - 2007  
 Parcel - Arima County Department of Transportation 2006  
 P:\WREB\2344522\2344522\_Sierrita\GIS\Pict2\_2\_Sierrita\_Facility\_Map\_24x36.pdf (deg)

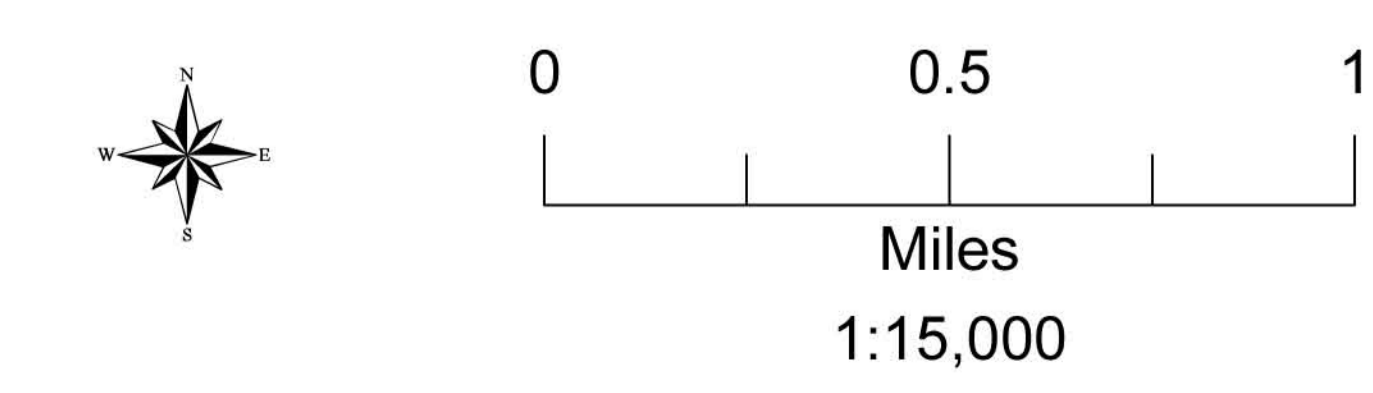
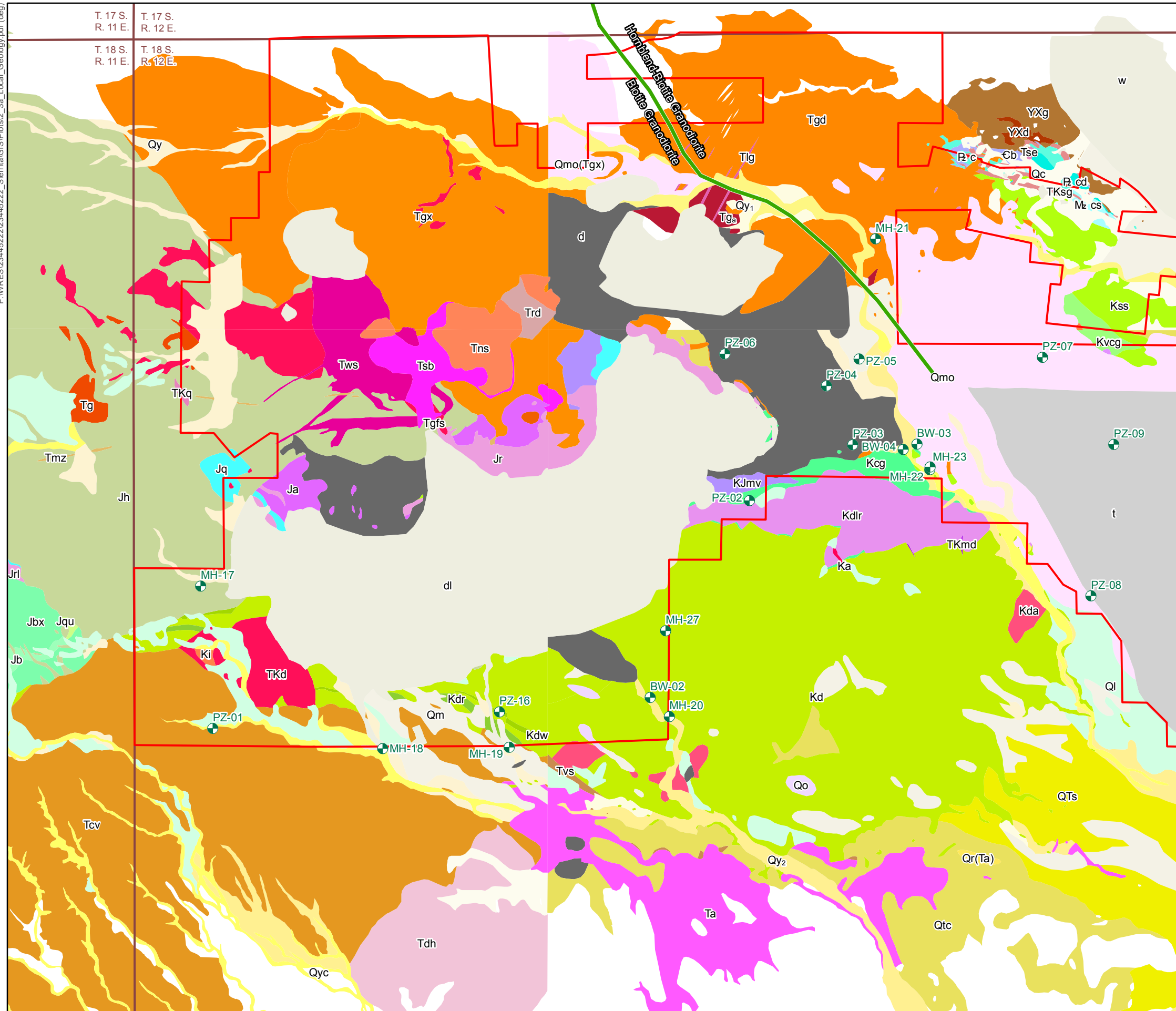


Figure 2-3a  
Local Geology

Freeport-McMoRan Sierrita Inc.



**Legend**

Detailed Legend on Figure 2-3b

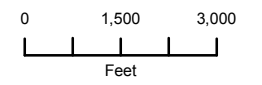
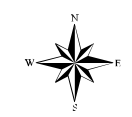
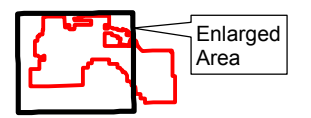
w / dl	Ta	TKq/Tse	Jb/Jbz
t	Tvs	TKf	Jbdx
d	Tpb	TKsg	Jqu
Qyc	Tsb	Ki	Jru
Qy2	Tmz	Kdi	Jau
Qy1	Tga	Kdr	Jg
Qy	Tlg	Kdw	Jr
Qtc	Trd	Ka	Jrt
Ql	Trd	Kda	Jq
Qm	Tgf	Kdlr	Ja
Qmo	Tg	Kvcg	Pz c
Qo	Tgx	Kcg	Pz cd
Qc	Tgd	KJmv	Mz cs
QTs	Tns	Jtq/Kd	Cb
Qr(Ta)	Tws	Jh	YXd
Tcv	TKmd	Jbd	YXg
Tdh	TKd	Jbb	

Ruby Star Granodiorite = Tg, Tgx, and Tgd  
 Demetrie Volcanics = Ki, Kdi, Kdr, Kdw, Kda, and Kdlr  
 Harris Ranch Quartz Monzonite = Jh  
 Ox Frame Volcanics = Jg, Jr, Jrt, Jq, and Ja

**General Features**

- Sierrita Property Boundary
- Township and Range Boundary
- Approximate Ruby Star Biotite Granodiorite and Hornblende-Biotite Granodiorite Division
- Monitor Wells and Piezometers

Source:  
 Geology - Arizona Geological Survey 2007  
 Granodiorite Division - Conoco 1978



1 inch equals 3,000 feet



## Figure 2-3b Key to Geologic Map

Freeport-McMoRan Sierrita Inc.

### Historic

w / dl	Excavated rock (<50 years)
t	Mine tailing (<50 years)
d	Disturbed ground (<100 years)

### Quaternary - Late Tertiary

Qyc	Modern stream channel deposits (< ~1 ka) DGM33
Qy2	Late Holocene alluvium (<~2 ka) DGM 33
Qy1	Holocene alluvium (~2 to 10 ka) DGM 33
Qy	Undifferentiated Holocene alluvium (<10 ka) DGM 33
Qtc	Holocene and Pleistocene hillslope colluvium and talus (<10 ka)
Ql	Late Pleistocene alluvium (~10 to 130 ka) DGM33
Qm	Middle Pleistocene alluvium (~130-750 ka)
Qmo	Middle to Early Pleistocene alluvium (~500 ka to 1 Ma).
Qo	Early Pleistocene alluvium (~1 to 2 Ma)
Qc	Colluvium and talus (Holocene and Pleistocene, <2Ma)
QTS	Early Pleistocene to Pliocene alluvium (~1 to 5 Ma)
Qr(Ta)	Holocene and Pleistocene regolith deposits over Tertiary bedrock units Ta and Tdh (< 10 ka)

### Tertiary

Tcv	Volcaniclastic conglomerate and sandstone (Tertiary)
Tdh	Dacite of Tinaja Peak (Tertiary)
Ta	Andesite of Tinaja Hills (Tertiary) Andesitic dikes (Miocene or Oligocene)
Tvs	Volcanic-lithic sandstone and conglomerate (Tertiary)
Tpb	Biotite porphyry dike (Tertiary)
Tsb	Sierrita Breccia (Tertiary)
Tmz	Quartz monzonite dikes (Tertiary)
Tga	Silica-iron altered granitoid (Paleocene)

Tlg	Biotite leucogranite (Paleocene)
Trd	Rhyodacite porphyry (Tertiary)
Trd	Rhyodacite porphyry (Tertiary)
Tgf	Sierrita Granite, aplite phase (Tertiary)
Tg	Sierrita Granite (Tertiary)/ Ruby Star Granodiorite (Paleocene)
Tgx	Ruby Star Granodiorite, megacrystic or porphyritic phase (Tertiary)
Tgd	Ruby Star Granodiorite (Tertiary) (granodiorite phase)
Tns	North Sierrita Porphyry (Tertiary)
Tws	West Sierrita Porphyry (Tertiary)

### Early Tertiary - Late Cretaceous

TKmd	Mafic dikes (Tertiary or Cretaceous)
TKd	Fine-grained, biotite diorite (Tertiary)
TKq/Tse	Quartz vein and hydrothermal breccia (Tertiary – Cretaceous)
TKf	Felsite intrusion (Tertiary)
TKsg	Cretaceous/Tertiary Rock

### Cretaceous

Ki	Demetrie volcanics, intermediate porphyry (Cretaceous)
Kdi	Demetrie volcanics, intrusive andesite (Cretaceous)
Kdr	Demetrie volcanics, upper rhyolite tuff (Cretaceous)
Kdw	Demetrie volcanics, pyroclastic unit (Cretaceous)
Ka	Andesite intrusion (Late Cretaceous)
Kda	Demetrie Volcanics, andesite, altered (Late Cretaceous)
Kdlr	Demetrie Volcanics, lower rhyolitic tuff (Late Cretaceous)
Kvcg	Volcanic-lithic conglomerate (Cretaceous)
Kcg	Conglomerate (Cretaceous)

### Early Cretaceous - late Jurassic

KJmv	Mafic to intermediate metavolcanic rocks (Cretaceous to Jurassic)
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### Jurassic

Jtq/Kd	Rhyolite ash-flow tuff (Jurassic)/ Demetrie Volcanics, andesite (Late Cretaceous)
Jh	Harris Ranch Monzonite (Jurassic)
Jbd	Dacitic ash-flow tuff, Red Boy Rhyolite (Jurassic)
Jbb	Biotite-rich ash-flow tuff, Red Boy Rhyolite (Jurassic)
Jb/Jbz	Rhyolite ash-flow tuff, Red Boy Rhyolite (Jurassic)/ Mesobreccia, Red Boy Rhyolite (Jurassic)
Jbdx	Rhyolite porphyry megabreccia, Red Boy Rhyolite (Jurassic)
Jqu	Quartz sandstone (Jurassic)
Jru	Rhyolite lava (Jurassic)
Jau	Andesitic lava and conglomerate (Jurassic)
Jg	Ox Frame volcanics - Tuff of George Tank (Jurassic)
Jr	Ox Frame volcanics - Rhyolite, undifferentiated (Jurassic)
Jrt	Ox Frame volcanics - Rhyolite tuff (Jurassic)
Jq	Ox Frame volcanics - Quartz sandstone (Jurassic)
Ja	Ox Frame volcanics - Andesite, undifferentiated (Jurassic)

### Paleozoic - Mesozoic

Pc	Carbonate rocks (Paleozoic)
Pcd	Carbonate rocks, dominantly dolostone (Paleozoic)
Me cs	Calcsilicate granofels, siltstone, and sandstone (Mesozoic)

### Cambrian

Cb	Bolsa Quartzite (Cambrian)
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### PreCambrian

YXd	Fine- to medium-grained diorite (Mesozoic or Proterozoic)
YXg	Igneous complex (Mesozoic(?) and Proterozoic)

Figure 2-4  
Groundwater Elevation  
July 2007

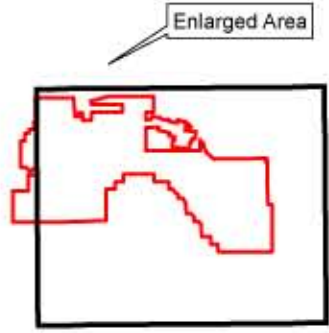
Freeport-McMoRan Sierrita Inc.

**Legend**

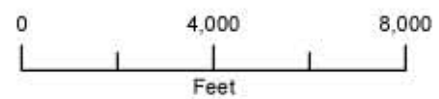
- Monitor Wells and Piezometers
- Approximate Groundwater Elevation Contours  
100 foot contour interval  
(Dashed where inferred)
- Approximate Groundwater Elevation Contours  
Inferred from Hydro Geo Chem 2007  
100 foot contour interval
- Well Name and July 2007 Groundwater Elevation (ft AMS)

**General Features**

- Sierrita Property Boundary
- Township and Range Boundary



Source: Imagery - Cooper Aerial Co. 2006 and State Cartographer's Office 2005  
Groundwater Contours - URS 2008, Hydro Geo Chem 2007  
Base Map - ALRIS 1997 - 2007



1 inch equals 4,000 feet

