

Date: 19-2015

# BOREHOLE LITHOLOGICAL LOG

Page 1 of 1

Well Number/Name: MW-6 DEEP

GRADATION

Name: AZAD KHALIGHI

Drilling Contractor: CASCADE

Sampling Method: CONT. CORE

Descriptive Location: BLANCO RD

Descriptive Location: BLANCO RD

Descriptive Location: BLANCO RD

Date: 2-19-2015

## BOREHOLE LITHOLOGICAL LOG

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Well Number/Name: MW-6 DEEP

Name: AZAD KHALIGHI

Sample Depth (ft)	Drilling Rate (ft/hr)	Color: Munsell Name and Class	Moisture Content			Particle % Dist.		Grain Size		Grain Size	Sorting	Grain Shape	Plasticity	Cementation	Mineral Composition			Rock Type (USCS Group)	Comment													
			Dry	Moist	Saturated	Cobbles	Gravel	Sand	Fines	Sand	Gravel	Fine	Coarse	Max	Well	Medium	Poor	Angular	Sub-Angular	Sub-Rounded	Rounded	None	Low	Medium	High	Strong	Quartz	Feldspar	Mica	Amphibole	Evaporites	Other

27.3'		7.5YR 4/4 Brown	X																																
28.4'																																			
28.4'		7.5YR 5/1 GRAY	X	X				X																											
39.5'		GLEY 1 2.5/N BLACK			X				X																										
41.1'		GLEY 1 3/5GY VERY DARK GREENISH GRAY		X					X																										
52.3'		GLEY 1 3/5GY VERY DARK GREENISH GRAY			X					X																									
52.3'		"	X	X																															
57.5		"	X	X																															

Drilling Contractor:

Sampling Method:

Drilling Rig Type:

Descriptive Location:

Drilling Method:

Date: 19-2015

## BOREHOLE LITHOLOGICAL LOG

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Well Number/Name: MW-6 DEEP

Name: AZAD KHALIGHI

Sample Depth (ft)	Drilling Rate (ft/hr)	Color: Munsell Name and Class	Moisture Content	GRADATION												Rock Type (USCS Group)	Comment												
				Particle % Dist.			Grain Size		Grain Size		Sorting	Grain Shape	Plasticity	Cementation	Mineral Composition														
				Fines	Sand	Gravel	Fine	Medium	Coarse	Fine					Max														
575'		GLEY 1 2.5/5GY GREENISH BLACK	Dry	X	X		X	X				X	X		X														
61'		GLEY 1 3/5GY Very DARK GREENISH/ Brown	Moist																										
72'		GLEY 1 2.5/1N BLACK	Saturated	X																									
72'		GLEY 1 2.5/1N BLACK																											
74		GLEY 1 2.5/10GY GREENISH BLACK		X																									
~87		GLEY 1 2.5/10GY GREENISH BLACK																											
~87		"		X																									
138		"		X																									

575'		GLEY 1 2.5/5GY GREENISH BLACK	X	X			X	X				X	X		X													
61'		GLEY 1 3/5GY Very DARK GREENISH/ Brown	X																									
72'		GLEY 1 2.5/1N BLACK		X																								
72'		GLEY 1 2.5/1N BLACK																										
74		GLEY 1 2.5/10GY GREENISH BLACK		X																								
~87		GLEY 1 2.5/10GY GREENISH BLACK																										
~87		"		X																								
138		"		X																								

Drilling Contractor:

Sampling Method:

Drilling Rig Type:

Descriptive Location:

Drilling Method:

Date: 1-20-2015

## **BOREHOLE LITHOLOGICAL LOG**

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Well Number/Name: MW-6 DEET

## Drilling Contractor:

#### Drilling Rig Type:

#### **Drilling Method:**

#### **Sampling Method:**

#### **Descriptive Location:**

Date:    - 20-2015

## **BOREHOLE LITHOLOGICAL LOG**

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Well Number/Name: MW-6 DEEP

Name: AZAD KHALIGHI

**Drilling Contractor:**

#### **Sampling Method:**

### Descriptive Location:

Drilling Rig Type:

#### Drilling Method:

Date: 20-2015

## **BOREHOLE LITHOLOGICAL LOG**

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Well Number/Name: MW-6 DEEP

### **Contractor:**

#### **Sampling Method:**

ig Type:

#### **Descriptive Location:**

#### **Method:**

Date: 2-21-2015

## BOREHOLE LITHOLOGICAL LOG

Page 7 of

Well Number/Name: MW-6 DEEP

Name: AZAD KHALIQ H

Sample Depth (ft)	Drilling Rate (ft/hr)	Color: Munsell Name and Class	Moisture Content	Particle % Dist.		Grain Size	Grain Size	Sorting	Grain Shape	Plasticity	Cementation	Mineral Composition				Rock Type (USCS Group)	Comment																			
				Dry	Moist	Cobbles	Gravel					Angular	Sub-Angular	Sub-Rounded	Rounded	None	Low	Medium	High	None	Weak	Moderate	Strong	Quartz	Feldspar	Mica	Amphibole	Evaporites	Other							
				Cobbles	Gravel	Sand	Fines					Fine	Medium	Poor	Angular	Sub-Angular	Sub-Rounded	Rounded	None	Low	Medium	High	None	Weak	Moderate	Strong	Quartz	Feldspar	Mica	Amphibole	Evaporites	Other				
187		2.5Y 5/4 LIGHT OLIVE Brown	X																																	
186.7		2.5Y 5/4 LIGHT OLIVE Brown	X																																	
186.7		2.5Y 5/4 LIGHT OLIVE Brown	X																																	
190.9		2.5Y 4/4 OLIVE Brown	X	X																																
190.9		2.5Y 4/4 OLIVE Brown	X	X																																
194		10Y 2 5/3 Brown	X																																	
194		10Y 2 5/3 Brown	X																																	
197		2.5Y 5/3 LIGHT OLIVE Brown	X																																	
197		2.5Y 5/3 LIGHT OLIVE Brown	X																																	
199		2.5Y 5/3 LIGHT OLIVE Brown																																		

Drilling Contractor:

Sampling Method:

Descriptive Location:

Drilling Rig Type:

Drilling Method:

Date: 2-21-2015

# BOREHOLE LITHOLOGICAL LOG

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Well Number/Name: MW-6 DEEP

### **Drilling Contractor:**

#### Drilling Rig Type:

#### Drilling Method:

#### **Sampling Method:**

#### **Descriptive Location:**

Date: 21-2015

## BOREHOLE LITHOLOGICAL LOG

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Well Number/Name: MW-6m

Name: Azad Khalighi

Sample Depth (ft)	Drilling Rate (ft/hr)	Color: Munsell Name and Class	Moisture Content	GRADATION						Rock Type (USCS Group)	Comment						
				Dry	Moist	Saturated	Cobbles	Gravel	Sand	Fines	Grain Size	Grain Size	Sorting	Grain Shape	Plasticity	Cementation	Mineral Composition

217		2.57 5/2 GRAYISH Brown	X X		X	X	15	X	35	X	15	X	X	X	X	X	SP	SILTY SAND w/ SILT & GRAVEL - ROUNDED GRAVEL - SOME MONTMORILLONITE
220		2.57 5/2 LIGHT OLIVE Brown	X		X	X	60	X	10	X	20	X	X	X	X	X	SC	CLAYEY SAND w/ SILT
221		2.57 5/2 LIGHT OLIVE Brown	X		X	X	10	X	20	X	70	X	X	X	X	X	CH	SILTY CLAY w/ SAND
222.5		2.57 5/2 OLIVE Brown	X		X	X	10	X	20	X	70	X	X	X	X	X	CH	CLAY w/ TWO SILTS
237		10yr-3/6 DARK YELLOWISH Brown	X		X	X	5	X	20	X	X	X	X	X	X	X	CH	SAND w/ SILT.
244		10yr-3/6 DARK YELLOWISH Brown					20	X	10	X	X	X	X	X	X	X		6 239 ft B6CS; LARGE BOULDERS FRACUTED & FRAGMENTED BY SOILS ETC.

Drilling Contractor:

Drilling Rig Type:

Drilling Method:

Sampling Method:

Descriptive Location:

Date: 2-22-2015

## BOREHOLE LITHOLOGICAL LOG

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Well Number/Name: MW-6 DEEP

GRADATION

Name: AZAD KHALIGHI

Sample Depth (ft)	Drilling Rate (ft/hr)	Color: Munsell Name and Class	Moisture Content		Particle % Dist.		Grain Size		Grain Size		Sorting	Grain Shape	Plasticity	Cementation	Mineral Composition		Rock Type (USCS Group)	Comment																	
			Dry	Moist	Saturated	Cobbles	Gravel	Sand	Fines	Silt					Well	Medium	Poor	Angular	Sub-Angular	Sub-Rounded	Rounded	None	Low	Medium	High	None	Weak	Moderate	Strong	Quartz	Feldspar	Mica	Amphibole	Evaporites	Other
244		10YR 3/6 DARK YELLOWISH Brown	X																																

247		10YR 3/6 DARK YELLOWISH Brown	X																																	
247		5Y 4/2 OLIVE GRAY	XX																																	
253.4		2.5Y 4/2 DARK GRAYISH Brown																																		
253.9		2.5Y 4/2 DARK GRAYISH Brown																																		
256		2.5Y 2/5 BLACK																																		
257		10YR 4/4 DARK YELLOWISH Brown	X																																	
259		10YR 4/4 DARK YELLOWISH Brown	X																																	

Drilling Contractor:

Drilling Rig Type:

Drilling Method:

Sampling Method:

Descriptive Location:

Date: 2-22-2015

# BOREHOLE LITHOLOGICAL LOG

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Well Number/Name: NW-6 DEEP

Name: AZAD KHALIGHI

Drilling Contractor: CASCADE

Sampling Method: CORE - cont.

Drilling Rig Type:

Descriptive Location: MW-6.D

Date: 22-2015

## BOREHOLE LITHOLOGICAL LOG

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Well Number/Name: MW-6 Deep

Name: ABD KHALIGHI

Sample Depth (ft)	Drilling Rate (ft/hr)	Color: Munsell Name and Class	Moisture Content	GRADATION												Rock Type (USCS Group)	Comment																				
				Particle % Dist.			Grain Size		Grain Size		Sorting	Grain Shape	Plasticity	Cementation	Mineral Composition																						
				Dry	Moist	Saturated	Cobbles	Gravel	Sand	Silt					Fine	Coarse	Max	Angular	Sub-Angular	Sub-Rounded	Rounded	None	Low	Medium	High	None	Weak	Moderate	Strong								
282		5Y 4/4 OLIVE	X X		X		35	10	5	10																											
284.5																																					
284.5		5Y 3/2 DARK OLIVE gray	X X		5	20	65	10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
288		5Y 4/2 OLIVE gray	X X		10	20	60	10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
288		5Y 4/2 OLIVE gray	X X		10	20	60	10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
297		2.5Y 5/4 LIGHT OLIVE Brown	X X		60	90	40	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
299		2.5Y 5/6 LIGHT OLIVE Brown	+ +		15	45	10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
302																																					

Drilling Contractor:

Drilling Rig Type:

Drilling Method:

Sampling Method:

Descriptive Location:

Date: 1-22-2015

# BOREHOLE LITHOLOGICAL LOG

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Well Number/Name: MW-6 DEEP

## GRADATION

Name: AZAD KITALGUY

Sample Depth (ft)	Drilling Rate (ft/hr)	Color: Munsell Name and Class	Moisture Content	Particle % Dist.		Grain Size	Grain Size	Sorting	Grain Shape	Plasticity	Cementation	Mineral Composition	Rock Type (USCS Group)	Name: <u>HEAD KHALI GY</u>																							
Dry	Moist		Saturated	Cobbles	Gravel	Sand	Fines							Dry	Moist	Saturated	Angular	Sub-Angular	Sub-Rounded	Rounded	None	Low	Medium	High	None	Weak	Moderate	Strong	Quartz	Feldspar	Mica	Amphibole	Evaporites	Other	Alteration Visible	Grading Analysis	Well Graded
Moist	Saturated		Cobbles	Gravel	Sand	Fines	Silt	Clay	Fine	Coarse	Max	Well	Medium	Poor	Angular	Sub-Angular	Sub-Rounded	Rounded	None	Low	Medium	High	None	Weak	Moderate	Strong	Quartz	Feldspar	Mica	Amphibole	Evaporites	Other	Alteration Visible	Grading Analysis	Well Graded	Fat Clay	Rock Type (USCS Group)
Saturated	Cobbles		Gravel	Sand	Fines	Silt	Clay	Fine	Coarse	Max	Well	Medium	Poor	Angular	Sub-Angular	Sub-Rounded	Rounded	None	Low	Medium	High	None	Weak	Moderate	Strong	Quartz	Feldspar	Mica	Amphibole	Evaporites	Other	Alteration Visible	Grading Analysis	Well Graded	Fat Clay		
Cobbles	Gravel		Sand	Fines	Silt	Clay	Fine	Coarse	Max	Well	Medium	Poor	Angular	Sub-Angular	Sub-Rounded	Rounded	None	Low	Medium	High	None	Weak	Moderate	Strong	Quartz	Feldspar	Mica	Amphibole	Evaporites	Other	Alteration Visible	Grading Analysis	Well Graded	Fat Clay			
Gravel	Sand		Fines	Silt	Clay	Fine	Coarse	Max	Well	Medium	Poor	Angular	Sub-Angular	Sub-Rounded	Rounded	None	Low	Medium	High	None	Weak	Moderate	Strong	Quartz	Feldspar	Mica	Amphibole	Evaporites	Other	Alteration Visible	Grading Analysis	Well Graded	Fat Clay				
Sand	Fines		Silt	Clay	Fine	Coarse	Max	Well	Medium	Poor	Angular	Sub-Angular	Sub-Rounded	Rounded	None	Low	Medium	High	None	Weak	Moderate	Strong	Quartz	Feldspar	Mica	Amphibole	Evaporites	Other	Alteration Visible	Grading Analysis	Well Graded	Fat Clay					
Fines	Silt		Clay	Fine	Coarse	Max	Well	Medium	Poor	Angular	Sub-Angular	Sub-Rounded	Rounded	None	Low	Medium	High	None	Weak	Moderate	Strong	Quartz	Feldspar	Mica	Amphibole	Evaporites	Other	Alteration Visible	Grading Analysis	Well Graded	Fat Clay						
Silt	Clay		Fine	Coarse	Max	Well	Medium	Poor	Angular	Sub-Angular	Sub-Rounded	Rounded	None	Low	Medium	High	None	Weak	Moderate	Strong	Quartz	Feldspar	Mica	Amphibole	Evaporites	Other	Alteration Visible	Grading Analysis	Well Graded	Fat Clay							
Clay	Fine		Coarse	Max	Well	Medium	Poor	Angular	Sub-Angular	Sub-Rounded	Rounded	None	Low	Medium	High	None	Weak	Moderate	Strong	Quartz	Feldspar	Mica	Amphibole	Evaporites	Other	Alteration Visible	Grading Analysis	Well Graded	Fat Clay								
Fine	Coarse		Max	Well	Medium	Poor	Angular	Sub-Angular	Sub-Rounded	Rounded	None	Low	Medium	High	None	Weak	Moderate	Strong	Quartz	Feldspar	Mica	Amphibole	Evaporites	Other	Alteration Visible	Grading Analysis	Well Graded	Fat Clay									
Coarse	Max		Well	Medium	Poor	Angular	Sub-Angular	Sub-Rounded	Rounded	None	Low	Medium	High	None	Weak	Moderate	Strong	Quartz	Feldspar	Mica	Amphibole	Evaporites	Other	Alteration Visible	Grading Analysis	Well Graded	Fat Clay										
Max	Well		Medium	Poor	Angular	Sub-Angular	Sub-Rounded	Rounded	None	Low	Medium	High	None	Weak	Moderate	Strong	Quartz	Feldspar	Mica	Amphibole	Evaporites	Other	Alteration Visible	Grading Analysis	Well Graded	Fat Clay											

**Drilling Contractor:**

Drilling Rig Type:

#### Drilling Method:

#### **Sampling Method:**

#### **Descriptive Location:**

Date: 1-22-2013

## **BOREHOLE LITHOLOGICAL LOG**

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Well Number/Name: MW-6 ~~pool~~

Name: AZAD KHALIGHI

### Drilling Contractor:

#### **Sampling Method:**

### Descriptive Location:

Drilling Rig Type:

### Descriptive Location:

#### Drilling Method: