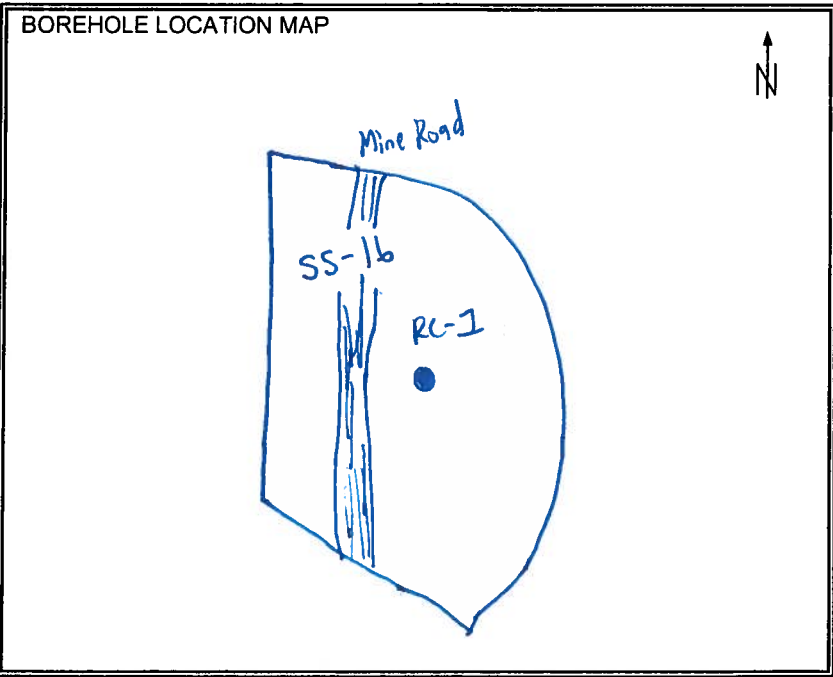


**BOREHOLE LOG**



Boring ID: <b>RC-1</b>	
Monitoring Well ID:	
Project Number:	Project Name:
Client:	
Site:	
Borehole Location (Township, Range, Section):	
Logged By: <b>RCJ</b>	
Reviewed By:	Review Date:
Drilling Contractor: <b>Eagle Drilling</b>	
Drill Rig Type/Method: <b>truck-mounted core drill</b>	
Sampler Type: <b>triple-barrel NQ wire-line core sampler</b>	
Borehole Diameter (inches): <b>2.5" (1.8-inch diameter)</b>	to:                    feet bgs
Overdrilled Diameter (inches): <b>4"</b>	to:                    feet bgs
Drill Start Date: <b>6/9/14</b>	Drill Start Time: <b>0700</b>
Drill Finish Date:	Drill Finish Time:
Total Borehole Depth (feet bgs):	
Soil Boring Backfill Date:	Soil Boring Backfill Time:
Ground Surface Reference Elevation (feet msl):	
Depth to 1st Saturated Zone (feet bgs):	Date:                    Time:
Depth to Other Water-Bearing Zones (feet bgs):	
Depth to Water After Drilling (feet bgs):	
Well Completion Date:	Well Completion Time:
Screen Interval (feet bgs):	Total Well Depth (feet bgs):
Well Diameter (inches):	Well Casing Material:
Static Water Level After Well Installation (feet bgs):	



**NOTES/REMARKS**

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# BOREHOLE LOG

Project Location:

DATE:

LOGGED BY:

BORING ID: **RC-1**

Page    of   

Sampler Type	Sample Interval	Time	Recovered/Driven (in./m)	Blow Counts/6 in.	Physical Analysis	Chemical Analysis	PID Reading (ppm)	Well Construction Info	Depth (feet bgs)	USCS Type/Designation	Soil Description	% Gravel	% Coarse Sand	% Medium Sand	% Fine Sand	% Silt/Clay
									0		Driller inserted hollow-stem auger section for first 5'. Bentonite chips were used to seal boring. 0700 Eagle began drilling RC-1. Eagle used bentonite grout to re-seal and used pump to recycle water.					
			No Recovery						5		6/9/14 weakly-cemented gravelly alluvium (volcaniclast) (5'-5.5') Lt. gray, mottled, Quartz Monzonite, fine to medium crystallized, 5% to 10% mafics, hornblende, biotite, fractured, (5.5'-9') calcite coating					
		0830							10		Evidence of cave-in from top. Quartz monzonite w/ hematite staining along fractures, large blocky fracture (9'-12')					
		0905							15		Fractured materials preventing drill bit from advancing. Driller tripped out of boring to clear bit. Limited sample collected. w/oxidation and green coloration Lt. gray, mottled Quartz Monzonite, fine to medium crystallized, 5% to 10% mafics, hornblende, biotite, fractured (mostly solid) zones. <del>11'-14'</del> (11'-14')					
		1025							20		No recovery (14'-18.5')					
			No Recovery													
		1130									No recovery (18.5'-24')					
		1150	No Recovery								Medium to coarse-grained sand observed in wash water.					

# BOREHOLE LOG

Project Location:

DATE:  
LOGGED BY:

BORING ID: *RC1*

Page    of   

Sampler Type	Sample Interval	Time	Recovered/Driven (in./in.)	Blow Counts/6 in.	Physical Analysis	Chemical Analysis	PID Reading (ppm)	Well Construction Info	Depth (feet bgs)	USCS Type/Designation	Soil Description	% Gravel	% Coarse Sand	% Medium Sand	% Fine Sand	% Silt/Clay
									20		Medium to coarse-grained sand observed in wash water.					
											No recovery ( <del>21'-24'</del> 18.5'-24')					
									25		No recovery (24'-29.5')					
											Coarse-grained sand observed in wash water.					
											No recovery					
									30		Coarse-grained sand observed in wash water.					
											No recovery (29.5'-34.5')					
									35							
									40							

6/9/14

**BOREHOLE LOG**



Boring ID: <b>RC-1 CONTINUATION FROM U-9</b>		
Monitoring Well ID:		
Project Number: <b>10353259.02</b>	Project Name: <b>BOULDER CANYON BYPASS</b>	
Client: <b>NDOT</b>		
Site: <b>BOULDER CANYON BYPASS</b>		
Borehole Location (Township, Range, Section):		
Logged By:		
Reviewed By:	Review Date:	
Drilling Contractor:		
Drill Rig Type/Method:		
Sampler Type:		
Borehole Diameter (inches):	to:	feet bgs
Overdrilled Diameter (inches):	to:	feet bgs
Drill Start Date: <b>6/19</b>	Drill Start Time:	
Drill Finish Date:	Drill Finish Time:	
Total Borehole Depth (feet bgs):		
Soil Boring Backfill Date:	Soil Boring Backfill Time:	
Ground Surface Reference Elevation (feet msl):		
Depth to 1st Saturated Zone (feet bgs):	Date:	Time:
Depth to Other Water-Bearing Zones (feet bgs):		
Depth to Water After Drilling (feet bgs):		
Well Completion Date:	Well Completion Time:	
Screen Interval (feet bgs):	Total Well Depth (feet bgs):	
Well Diameter (inches):	Well Casing Material:	
Static Water Level After Well Installation (feet bgs):		

BOREHOLE LOCATION MAP

NOTES/REMARKS

**SEE PAGE 1 FROM U/9**

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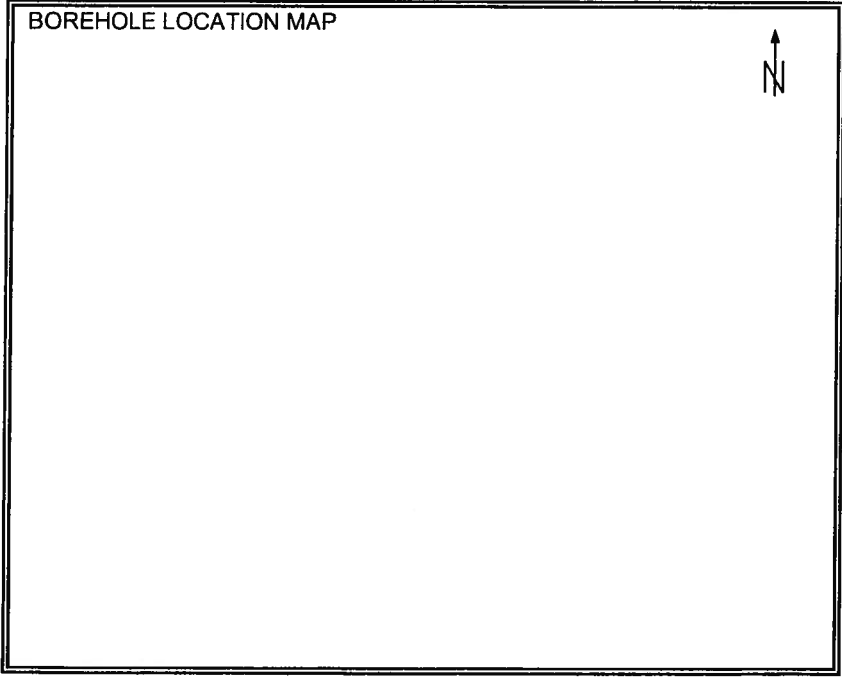
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BOREHOLE LOG



Boring ID: <u>RC-BA-001a</u>		
Monitoring Well ID: <u>RC-2 MMS</u>		
Project Number: <u>10353259.0a</u>	Project Name: <u>BOULDER CITY BYPASS</u>	
Client: <u>NDOT</u>		
Site: <u>BOULDER CITY BYPASS</u>		
Borehole Location (Township, Range, Section): <u>RC-2</u>		
Logged By: <u>KULB, STEVE, MARK</u>		
Reviewed By:	Review Date:	
Drilling Contractor: <u>EAGLE DRILLING</u>		
Drill Rig Type/Method: <u>ROCK CORE</u>		
Sampler Type: <u>CORE DRILLING</u>		
Borehole Diameter (inches): <u>3"</u>	to: <u>16'</u> feet bgs	
Overdrilled Diameter (inches):	to: feet bgs	
Drill Start Date: <u>6/10/14</u>	Drill Start Time: <u>1200</u>	
Drill Finish Date: <u>6/11/14</u>	Drill Finish Time: <u>1140</u>	
Total Borehole Depth (feet bgs):		
Soil Boring Backfill Date:	Soil Boring Backfill Time:	
Ground Surface Reference Elevation (feet msl):		
Depth to 1st Saturated Zone (feet bgs):	Date:	Time:
Depth to Other Water-Bearing Zones (feet bgs):		
Depth to Water After Drilling (feet bgs):		
Well Completion Date:		Well Completion Time:
Screen Interval (feet bgs):		Total Well Depth (feet bgs):
Well Diameter (inches):		Well Casing Material:
Static Water Level After Well Installation (feet bgs):		



NOTES/REMARKS

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BOREHOLE LOG



Boring ID: RC-4		
Monitoring Well ID: RC-		
Project Number: 10353259.02	Project Name: BOULDER CITY BYPASS	
Client: NDOT		
Site: BOULDER CITY BYPASS		
Borehole Location (Township, Range, Section):		
Logged By: M. Stockman, KF		
Reviewed By:	Review Date:	
Drilling Contractor: EAGLE		
Drill Rig Type/Method:		
Sampler Type:		
Borehole Diameter (inches):	to: feet bgs	
Overdrilled Diameter (inches):	to: feet bgs	
Drill Start Date:	Drill Start Time:	
Drill Finish Date:	Drill Finish Time:	
Total Borehole Depth (feet bgs):		
Soil Boring Backfill Date:	Soil Boring Backfill Time:	
Ground Surface Reference Elevation (feet msl):		
Depth to 1st Saturated Zone (feet bgs):	Date:	Time:
Depth to Other Water-Bearing Zones (feet bgs):		
Depth to Water After Drilling (feet bgs):		
Well Completion Date:	Well Completion Time:	
Screen Interval (feet bgs):	Total Well Depth (feet bgs):	
Well Diameter (inches):	Well Casing Material:	
Static Water Level After Well Installation (feet bgs):		

BOREHOLE LOCATION MAP

NOTES/REMARKS

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**BOREHOLE LOG**

Project Location: NDOT-BOULDER CITY BYPASS

DATE: 6/12/14  
LOGGED BY: MS, KF

BORING ID: RC-4

1  
2  
3  
4  
5

Sampler Type	Sample Interval	Time	Recovered/Driven (in./m.)	Blow Counts/6 in.	Physical Analysis	Chemical Analysis	PID Reading (ppm)	Well Construction Info	Depth (feet bgs)	USCS Type/Designation	Soil Description	% Gravel	% Coarse Sand	% Medium Sand	% Fine Sand	% Silt/Clay
									<u>NO RECOVERY</u>							
											<u>LIGHT GRAY, VERY PINK <del>CRYSTALS</del> FRACTURED ROCK. LIGHT TAN SEDIMENTS W/IN FRACTURES</u>					
											<u>LIGHT GRAY/TAN, VERY FRACTURED COARSE <del>CRYSTALS</del> MOTTLED W/ RED/ ORANGE OXIDE</u>					