

AIR

2000 lb shot
140' 8" casing
only / 100'

Water:
No

CLIENT: U.S. Geological Survey/ S.C.E.C.
PROJECT: SSIIP
CLIENT REP: Air Rose

Wed. Dec. 1, 2010 Date: Hole # 6000b Rig # 1 Driller: Sam Crum Supervisor: Fuis

TIME	LOG #	FOOTAGE	REMARKS	LOG REFERENCE #
9:00	1		Moved SP to 6000b1 & moved some	
	1b		junk out of the way; Got water	1. Crew Travel To Site
11:20	2		up the road thanks to security	2. Rig Up
			guard called up & left Dustin	3. Reenter Hole
	14		* Starting using mud rotary;	4. Drilling
			hoping it will get us down to where	5. Pull Pipe
			we can use the hammer... will	6. Mix Mud & Fill
			Probably have to get the Odex	7. Coring
12:20	4	0		8. Install Casing/Pipe
				9. Cementing
2:45	8			10. Rig Down
				11. Move Rig To New Site
3:15		30'	Sam says we can't get past 30'	12. Maintenance
			though we're drilling slowly anyway	13. Standby (Explain)
3:52	5		Pull pipe; Travis is getting	14. Other (Explain)
			casing so we can try to	15. Logging
			use the air hammer	16. Water Trip
			tomorrow; this 30' of drilling	
			even wore out the bit a	
			noticeable amount	MATERIALS USED
8:00	1/2			Mud <u>started</u> <u>by hand</u> sacks
	12		Had to work on hydraulic casing	LC _____ Type _____
			clamp thing that holds casing	
10:00	14		up above the hole	sacks
	4		Pulling casing off truck to put into	
			upper section of hole	sacks
10:50	8	20'	Using AIR	sacks
	4		Cased the upper 20' of 8"	sacks
11:44	4	120'		
			Rocks rolling in on the last 10-20'	Viscose _____
			Had to use a lot of foam; it's	Cement _____
			super messy...	Diesel _____
12:30	10		Measured; Open hole to 100'	Diesel _____
			would need Odex to do	Foamer <u>A LOT</u> <u>of foam</u>
			it right	Detergent _____
1:35	11		moving to 1234c	Other _____
			* Our masterlock is on	
			their gates *	
				CREW HOURS
				Driller / _____
				Helper / _____
				Helper / _____

Footage: FROM _____ TO _____ TOTAL FOOTAGE 100'
 Bit 9 7/8" changed at 30' (Size 9 7/8")
 Bit _____ changed at _____ Size _____
 Bit _____ changed at _____ Size _____

Revised: 21, June 1999

David Delis

Approved _____
 Easy to drive to; Fence 15-20'
 away, water pipe in 40-50' and
 power in 120'?

140 feet
8'

100 feet
2nd HOLE
1st Drilled to see
if open its 100 feet.

CLIENT: U.S. Geological Survey/ S.C.E.C.
PROJECT: SSIP
CLIENT REP: Cyril Slayday-Criley

Date:		Hole # <u>Coobe?</u>	Rig # <u>①</u>	Driller: <u>Sam Crum</u>	Supervisor: <u>G. F. Wise</u>
TIME	LOG #	FOOTAGE	REMARKS		LOG REFERENCE #
1019			Setting up		
1029	4	0'	DRILLING		1. Crew Travel To Site
1024	8	5'	1st pipe added		2. Rig Up
1033		20'	SAMPLE		3. Reenter Hole
1038	8	25'	2nd pipe added		4. Drilling
			ONLY ONE HOLE AT 100 FEET NO SECOND ONE!		5. Pull Pipe
					6. Mix Mud & Fill
					7. Coring
					8. Install Casing/Pipe
					9. Cementing
					10. Rig Down
					11. Move Rig To New Site
					12. Maintenance
					13. Standby (Explain)
					14. Other (Explain)
					15. Logging
					16. Water Trip
MATERIALS USED					
				Mud _____ sacks	
				LC _____ Type _____	
				_____ sacks	
				_____ sacks	
				_____ sacks	
				Viscose _____	
				Cement _____	
				Diesel _____	
				Foamer _____	
				Detergent _____	
				Other _____	
CREW HOURS					
				Driller / _____	
				Helper / _____	
				Helper / _____	

Footage: FROM _____ TO _____ TOTAL FOOTAGE _____
 Bit 8 1/2 changed at _____ Size _____"
 Bit _____ changed at _____ Size _____"
 Bit _____ changed at _____ Size _____"

Approved _____

90-
8

CLIENT: U.S. Geological Survey/ S.C.E.C.
 PROJECT: SSIP
 CLIENT REP: Coye Slaydery - ceisay

HARDROCK

Date: 2/24/11 / 2/25/11 Hole # 6007b Rig # 0 Driller: Sam Crum Supervisor: G. Fuis

TIME	LOG #	FOOTAGE	REMARKS	LOG REFERENCE #
			STARTED OUT IN MUD SWITCHED TO FOMER -	1. Crew Travel To Site
			ON SITE	2. Rig Up
8am				3. Reenter Hole
830	4	0'	DRILLING	4. Drilling
831	8	5'	1st pipe added	5. Pull Pipe
847		20'	NO SAMPLE TAKEN. Just ROCKS FOME GRIND	6. Mix Mud & Fill
850	8	25'	2nd pipe added	7. Coring
857		40'	SAMPLE TAKEN ROCK GRINDY FOME	8. Install Casing/Pipe
859	8	45'	3rd pipe added	9. Cementing
9102		60'	SAMPLE TAKEN GRINDY FOME ROCKS	10. Rig Down
9104		65'	4th pipe added	11. Move Rig To New Site
9109		80'	NO SAMPLE TAKEN GRINDY ROCKS	12. Maintenance
9111		85'	5th pipe added	13. Standby (Explain)
		90'	SAMPLE TAKEN FOME ROCKS & GRINDY	14. Other (Explain)
925	S		REMOVING PIPE	15. Logging
943	S		ALL PIPE OUT THE GROUND & BIT	16. Water Trip
				MATERIALS USED
				Mud _____ sacks
				LC _____ Type _____
				_____ sacks
				_____ sacks
				_____ sacks
				Viscose _____
				Cement _____
				Diesel _____
				Foamer _____
				Detergent _____
				Other _____
				CREW HOURS
				Driller / _____
				Helper / _____
				Helper / _____

Footage: FROM _____ TO _____ TOTAL FOOTAGE _____
 Bit _____ changed at _____ Size _____"
 Bit _____ changed at _____ Size _____"
 Bit _____ changed at _____ Size _____"

Approved _____

KULCO
 target 1000 lbs
 100' 8" casing

WATER
 not sure

CLIENT: U.S. Geological Survey/ S.C.E.C.
 PROJECT: SSIP
 CLIENT REP: Liz Rose

Tues. 11/16/10

PM

Date: 11/16/10		Hole # 601263 Rig # 1		Driller: Sam Crum	Supervisor: Fuis	
TIME	LOG #	FOOTAGE	REMARKS		LOG REFERENCE #	
1:45	1					
2:15	2				1. Crew Travel To Site	
2:45	14		Travis left to get 8" casing		2. Rig Up	
3:15	16		Sam & Dustin went to get water from the hydrant		3. Reenter Hole	
					4. Drilling	
					5. Pull Pipe	
					6. Mix Mud & Fill	
					7. Coring	
					8. Install Casing/Pipe	
					9. Cementing	
					10. Rig Down	
					11. Move Rig To New Site	
					12. Maintenance	
					13. Standby (Explain)	
					14. Other (Explain)	
					15. Logging	
					16. Water Trip	
					MATERIALS USED	
						Mud <u>20</u> sacks
						LC _____ Type _____
						sacks
						sacks
						sacks
						Viscose _____
						Cement _____
						Diesel _____
						Foamer _____
					Detergent _____	
					Other _____	
					CREW HOURS	
						Driller _____
						Helper _____
						Helper _____

Wed. 11/17/10

AM

PM

Thur
 AM

Footage: FROM _____ ' TO _____ ' TOTAL FOOTAGE 100'
 Bit 97/8" changed at _____ ' Size _____ "
 Bit _____ changed at _____ ' Size _____ "
 Bit _____ changed at _____ ' Size _____ "

Approved _____

Revised: 21, June 1999

David Delis Not bad; road down to terrace should be driven carefully; Good otherwise

6016a
 target 250 lbs
 78' deep ✓
 6" casing

water
 ~78-80'

CLIENT: U.S. Geological Survey/ S.C.E.C.
 PROJECT: SSIP
 CLIENT REP: LIZ ROSE

Sat. 11/13/10 Hole # 6016a Rig # 1 Driller: Sam Crum Supervisor: Fuis

TIME	LOG #	FOOTAGE	REMARKS	LOG REFERENCE #
AM 9:00	1/16		TRAVIS/DUSTIN got water from hydrant	
10:10			Cary, Steve & I moved boulders & greasewood/cholla from path	1. Crew Travel To Site
10:25	1		Sam & Travis & Dustin arrive	2. Rig Up
10:29	2/16		Travis had to go get more water	3. Reenter Hole
11:40	4	0'		4. Drilling
11:50	8	10'		5. Pull Pipe
				6. Mix Mud & Fill
				7. Coring
PM 11:58	12	27'	Pump maintenance	8. Install Casing/Pipe
12:10	3/4	30'		9. Cementing
12:32	8/4	50'		10. Rig Down
1:00	8/4	50'		11. Move Rig To New Site
1:07	16		travis went back to hydrant	12. Maintenance
1:10	4	60+	Harder, slower drilling & finer sand & gravel on shaker	13. Standby (Explain)
				14. Other (Explain)
				15. Logging
				16. Water Trip
1:21	4	70'		
1:27	8	70'		
1:37	4	95'		
1:41	14/16		Travis got back w/ water	MATERIALS USED
			Bedrock at 150'	Mud 411 sacks
			No Tortoises; Drill bit out	LC Type _____
2:20	5			_____ sacks
2:38	12			_____ sacks
2:48	8	CASING		_____ sacks
3:26	8	78'		_____ sacks
	10		Travis buried hole	_____ sacks
				_____ sacks
4:25	11		MOVE TO 6016a after Steve & I moved boulders & cactus	Viscose _____
4:45	14		Steve & I "replanted" cholla & wood & put boulders back into the path	Cement _____
				Diesel _____
				Foamer _____
				Detergent _____
				Other _____
				CREW HOURS
				Driller / _____
				Helper / _____
				Helper / _____

Footage: FROM _____ TO _____ TOTAL FOOTAGE

Bit 7 7/8" changed at _____ Size _____
 Bit _____ changed at _____ Size _____
 Bit _____ changed at _____ Size _____

70'

Approved _____

250 lbs
78' ✓
6" casing

Water
not sure

CLIENT: U.S. Geological Survey/ S.C.E.C.
PROJECT: SSIP
CLIENT REP: LIZ ROSE

Site: 11/14/10 Hole # 6020a Rig # 1 Driller: Sam Crum Supervisor: Fuis

TIME	LOG #	FOOTAGE	REMARKS	LOG REFERENCE #
8:00	1			
9:00	1/2		Sam & I got to rig	1. Crew Travel To Site
9:45	1/2		TRAVIS & DUSTIN ON SITE	2. Rig Up
10:00	12		Have to weld something on the stabilizer & shaker	3. Reenter Hole
11:45	16		Travis went back to hydrant at Annandale & Little Anorongo Rd. I went to move cacti & take photos & look for tortoises at 6025	4. Drilling
12:00	4	0		5. Pull Pipe
12:20	8/12	15'	Travis got back w/ water; finished working on the shaker & can drill again	6. Mix Mud & Fill
12:40	4	35'		7. Coring
1:03	8	55'		8. Install Casing/Pipe
1:20	4	75'		9. Cementing
1:36	8			10. Rig Down
1:42	4	80'		11. Move Rig To New Site
1:46	5			12. Maintenance
2:55	8	CASING		13. Standby (Explain)
2:55	10	78'	Cased to 78' waited for mud to drop then added a lot of hole plug *wide hole;	14. Other (Explain)
11/15/10	14		Cleaned up, buried, moved rocks & cholla back into our path	15. Logging

MATERIALS USED

Mud	sacks
LC	Type
	sacks
	sacks
	sacks
Viscose	
Cement	
Diesel	
Foamer	
Detergent	
Other	

CREW HOURS

Driller	/
Helper	/
Helper	/

Footage: FROM _____ TO _____ TOTAL FOOTAGE 78'
Bit 9 1/8" changed at _____ Size _____"
Bit _____ changed at _____ Size _____"
Bit _____ changed at _____ Size _____"

Revised: 21, June 1999

David Delis

78'

Approved _____
Have to drive up over a berm through bushes w/ 60' but not too soft

Used AIR
FOAM

6025a
128' of 6"
target: 1000 lbs

Water
w/ 3 gal/min
at 50'
w/ 8 gal/min at 125'

CLIENT: U.S. Geological Survey/ S.C.E.C.
PROJECT: SSIP
CLIENT REP: W. ROSE

Sun. 11/14/10

Date: 11/14/10 Hole # 6025a Rig # 1 Driller: Sam Crum Supervisor: Fuis

TIME	LOG #	FOOTAGE	REMARKS	LOG REFERENCE #
PM 3:00	1			
3:25	2		Set up shaker then rig at a3 site	1. Crew Travel To Site
<u>Mon 11/15/10</u>				
AM 9:00	1/16		Filled water trailer on the way in	2. Rig Up
10:00	2			3. Reenter Hole
10:56	4	0		4. Drilling
11:20	8	15'		5. Pull Pipe
11:42	4	33'	Hard Rock - need to go get air hammer equipment from SW drill yard	6. Mix Mud & Fill
PM 12:00			All off site	7. Coring
2:40	1/2		Travis, then Sam & Dustin back on site	8. Install Casing/Pipe
3:35	4			9. Cementing
3:50		28'	Hard Rock	10. Rig Down
3:56	8	25'		11. Move Rig To New Site
4:07	8	50'		12. Maintenance
	14		Water at ~40' - 50'	13. Standby (Explain)
4:45	8	105'		14. Other (Explain)
4:55	4	120'	More water - aquifer #2 (8 gal/min)	15. Logging
4:57	4	125'	120-125'	16. Water Trip
5:02	5			
5:08	10		Dark; time to quit until tomorrow	

MATERIALS USED

Mud _____ sacks
LC _____ Type _____

_____ sacks
_____ sacks
_____ sacks

Viscose _____

Cement _____

Diesel _____

Foamer _____

Detergent _____

Other _____

CREW HOURS

Driller _____ / _____

Helper _____ / _____

Helper _____ / _____

Mon

AM

PM

Tues 11/16/10

AM

takes ~40-45 mins drive from 6025 to Annabake pavement

Footage: FROM _____ TO _____ TOTAL FOOTAGE 124'

Bit _____ changed at _____ Size _____"
Bit _____ changed at _____ Size _____"
Bit _____ changed at _____ Size _____"

Approved _____

AIR

002062

water?

25016 shot
18' 6" casing
~ 83'

No

CLIENT: U.S. Geological Survey/ S.C.E.C.
PROJECT: SSIP
CLIENT REP: LIZ ROSE

Fri. Dec. 3, 2010 Hole # 6028b2 Rig # 1 Driller: Sam Crum Supervisor: Fuis

TIME	LOG #	FOOTAGE	REMARKS	LOG REFERENCE #
1:45	1		Sam drove up Hoopa Tr while I	1. Crew Travel To Site
3:15	2/10		ripped a locator at 6038x at 2:40 Set up rig at the stake so it's off the road while DUSTIN went to get water & Travis went to SW yard to load up casing Accident on Hwy 10 prevented DUSTIN from getting up there in time. Left rig at site	2. Rig Up 3. Reenter Hole 4. Drilling 5. Pull Pipe 6. Mix Mud & Fill 7. Coring 8. Install Casing/Pipe 9. Cementing 10. Rig Down
Sat. Dec. 4, 2010				
			I had to meet J&H drilling crew in Imperial Valley so Sam & Dustin drilled 6028b2	11. Move Rig To New Site 12. Maintenance 13. Standby (Explain) 14. Other (Explain) 15. Logging 16. Water Trip
7-8	1/2			
9:30-10	4		Ran 18' of casing in once it was in hard rock	
			- Brown DG to dark red clay to gray granite	
1:45	10		took rig to 6038x & then went home	
	11			
			off the road the ground/dirt was really soft Sam had to move the rig forward from the stake to get the jacks leveled	
MATERIALS USED				
				Mud _____ sacks
				LC _____ Type _____
				_____ sacks
				_____ sacks
				_____ sacks
				Viscose _____
				Cement _____
				Diesel _____
				Foamer <u>maybe a gallon</u>
				Detergent _____
				Other _____
CREW HOURS				
				Driller / _____
				Helper / _____
				Helper / _____

Footage: FROM _____ TO _____ TOTAL FOOTAGE 83-85'

Bit 8" changed at _____ Size _____
Bit _____ changed at _____ Size _____
Bit _____ changed at _____ Size _____

Approved _____

drift/sand road is
well-driven & good

6035A1
90 feet
8'

CLIENT: U.S. Geological Survey/ S.C.E.C.
PROJECT: SSIP
CLIENT REP: Cape Skayby-Criley

Date: 7/26/11		Hole # 6035A1		Rig # ①	Driller: Sam Crum	Supervisor: G. Fois
TIME	LOG #	FOOTAGE	REMARKS		LOG REFERENCE #	
12			ON SITE			
200			SETTING UP		1. Crew Travel To Site	
208			TOWER UP		2. Rig Up	
214	4	0'	DRILLING		3. Reenter Hole	
215	8	5'	1st pipe added		4. Drilling	
221		20'	SAMPLE TAKEN Dirt Sand Rocks		5. Pull Pipe	
248	8	25'	2nd pipe added		6. Mix Mud & Fill	
254		40'	SAMPLE TAKEN Rocks Sand		7. Coring	
259	8	45'	3rd pipe added		8. Install Casing/Pipe	
308		60'	SAMPLE TAKEN Rocks Sand Dirt		9. Cementing	
316	8	65'	4th pipe added		10. Rig Down	
322		80'	SAMPLE TAKEN Dirt Rocks SAND		11. Move Rig To New Site	
326	8	85'	5th pipe added		12. Maintenance	
332		90'	SAMPLE TAKEN Sand Dirt Rocks		13. Standby (Explain)	
335	5		Removing pipe & Bit		14. Other (Explain)	
345	5		All pipe and DRIV Bit out		15. Logging	
			NOTE AT AROUND		16. Water Trip	
			245 ADDED A BIT OF			
			CASING			
MATERIALS USED						
					Mud	sacks
					LC	Type
						sacks
						sacks
						sacks
					Viscose	
					Cement	
					Diesel	
					Foamer	
					Detergent	
					Other	
CREW HOURS						
					Driller	/
					Helper	/
					Helper	/

Footage: FROM _____ TO _____ TOTAL FOOTAGE _____
 Bit 7 1/8 changed at _____ Size _____"
 Bit _____ changed at _____ Size _____"
 Bit _____ changed at _____ Size _____"
 Approved _____

AIR

6038x

WELL

2000 lb shot
140' 8" casing ✓
*Basalt - notorious
for cracks, taking
NO EXPLOSIVES CASE

No

CLIENT: U.S. Geological Survey/ S.C.E.C.
PROJECT: SSIP
CLIENT REP: Liz Rose

Date: Dec. 4, 2010		Hole # 6038x	Rig # 1	Driller: Sam Crum	Supervisor: Fluis
TIME	LOG #	FOOTAGE	REMARKS		LOG REFERENCE #
pm 2:00	1/2		Set up rig; Travis dropped off casing		1. Crew Travel To Site
	1/6		Sam's friend at Morongo water let them fill trailer		2. Rig Up
4:00	10		Left site until Mon. - Sam will not be drilling on Sun. 12/5 -		3. Reenter Hole
Sun. Dec. 5, 2010					
→ NO Drilling; Left rig & Traveled					
Mon. Dec. 6, 2010					
AM 8:00	1		Sam, Travis, Dustin found rig broken		4. Drilling
8:45			Came & I arrived		5. Pull Pipe
	13		Waiting for Sheriff to file a report for stolen tools -		6. Mix Mud & Fill
			• All tools stolen from side tool compartment; water drained from trailer & Battery cover taken off		7. Coring
9:00	14		Travis went to Home Depot to buy new tools; then got water		8. Install Casing/Pipe
pm 12:30	14		Police man left		9. Cementing
	2		Had to move north slightly - the thieves who drained the water caused the dirt to be too soft & the footings sunk and put the rig off balance		10. Rig Down
1:05	4	0	drill down enough to set casing		11. Move Rig To New Site
1:33	8	40'	Put 6' of 10" casing in?		12. Maintenance
1:40		50'	At 50' either the rock shifted or is sticking out into the hole b/c it locked up the drill		13. Standby (Explain)
1:43	8	60'			14. Other (Explain)
1:51	8	80'	did we possibly get into granite?? (see sample)		15. Logging
2:15	4	125'	Slower drilling than first 80'		16. Water Trip
2:27	4	140'			
2:33	5				
2:50	8	CASING			
3:10		65'	section #4 had to be hammered in as did the others		
4:29	8	120'	6th section is in		
5:08	9		7th section is mostly in		

MATERIALS USED

- Mud _____ sacks
- LC _____ Type _____
- _____ sacks
- _____ sacks
- _____ sacks
- Viscose _____
- Cement _____
- Diesel _____
- Foamer _____
- Detergent _____
- Other _____

CREW HOURS

- Driller _____ / _____
- Helper _____ / _____
- Helper _____ / _____

Footage: FROM _____ TO _____ TOTAL FOOTAGE 140'
 Bit 8" changed at _____ Size _____
 Bit _____ changed at _____ Size _____
 Bit _____ changed at _____ Size _____

Approved Soft when wet!

Good dirt/sand road not
far off main road

AIR

6038X
Target 2000lbs
140' 8" casing ✓

NO

CLIENT: U.S. Geological Survey/ S.C.E.C.

PROJECT: SSIP

CLIENT REP: U2 Rose

Mon: Dec. 6, 2010 Hole # 6038x Rig # 1 Driller: Sam Crum Supervisor: Fui's

TIME	LOG #	FOOTAGE	REMARKS	LOG REFERENCE #
5:20	14		measured open hole to 123'	1. Crew Travel To Site
			* they didn't weld steel plug on the bottom so when they pushed the casing down it filled up with rock	2. Rig Up
			- they have 147' of casing so it needs to be cleaned out tomorrow	3. Reenter Hole
				4. Drilling
				5. Pull Pipe
				6. Mix Mud & Fill
				7. Coring
				8. Install Casing/Pipe
5:30	10'		off site	9. Cementing
				10. Rig Down
Tues. Dec. 7, 2010				11. Move Rig To New Site
				12. Maintenance
7:30	1			13. Standby (Explain)
	2			14. Other (Explain)
9:28	3/8		Add steel to clean out casing	15. Logging
10	4		Pulled pipe & redrilled again to make sure the hole was cleared to 140'	16. Water Trip
10:48	5/3/4			
	10			
			* No steel cap on the bottom; cased all the way to 140'	MATERIALS USED
			1 bag of hole plug in the bottom of the casing	Mud _____ sacks
				LC _____ Type _____
				_____ sacks
				_____ sacks
				_____ sacks
11:17	11		off to 30426	Viscose _____
				Cement _____
				Diesel _____
				Foamer _____
				Detergent _____
				Other _____
				CREW HOURS
				Driller / _____
				Helper / _____
				Helper / _____

Footage: FROM _____ TO _____ TOTAL FOOTAGE 140'
Bit 8" changed at _____ Size _____"
Bit _____ changed at _____ Size _____"
Bit _____ changed at _____ Size _____"

Approved _____

good road; gets soft when wet though!