BOULDER CITY BYPASS PERSONAL AIR MONITORING SAMPLING FORM

Tetra Tech, Inc. Background Study (ABS)

Date: 5/30/14

Cassette Lot No: 32946

Field Activity (check one):	Soil Sampling	
Collected By: M5	☐ Ambient Air Testing	☐ Other Activity

LOG BOOK 3

Sample #	Pump I.D.#	Rotometer I.D. #	Sample Type ¹	ABS Field Activity 2	Time On Time Off Total Minutes	Flow Rate-Start Flow Rate-Stop Total Volume (Liters)	Personnel Sampled
BC-ABS-00001	5KC 827126	LV-02	FS	SOIL SAMPLING ABS	840	960	ES
					<i>I</i>	1	-
BC-ABS-00002	_	_	FB	FIELD BLANK	1		
					1	1	
BC-ABS-00003	_	92 <u></u>	LB	LOT BLANK			

NOTES: All ABS samples will be collected on 25 mm diameter mixed cellulose ester (MCE) filter cassettes with a pore size of 0.8µm

1) Sample Type

FS = Field Sample

EB = Equipment Blank

FB = Field Blank

FP = Field Split

FD = Field Duplicate

LB = Lot Blank

2) Field Activity

Soil Sampling,

ABS Testing,

Ambient Air Testing,

Other

Tetra Tech, Inc.		AIK SAMI	LING DAT	<u>A</u>	
Activity-Based Sampling Project (ABS) Date: 5/31/14	ABS Scenario (check one):	☑ Surface Soil	☐ Sub-Surface	□ Rock/Geo	☐ Driving
Cassette Lot No: 32146	Collected By: Lond	Pearson		Log Book No:	1,2

Page / / 3

Air Sample #	Pump I.D.#	Rotometer I.D. #	Sample Type	ABS Scenario ²	Time On Time Off Total Minutes	Flow Rate-Start Flow Rate-Stop Total Volume (Liters)	Description/ Work Zone Size (square feet)	Initials of Personnel Sampled	ABS Activity ³	Receptor ⁴
BC-ABS-00004	5kc 82720)	LV.02	PS	Soil Surfice Sampling	0655 / 1055 / 240 min	4.0 /4.0 / % Lo	le Samplegrids	KV	a	Sampler
BC-ABS-00005	skc 827994			J	0655 / 1055 1 240 Min	960		74	1	1
BC-ABS-00006	-		FB	_						
					1	<i>I I</i>				
					1	1				

NOTES: All ABS samples will be collected on 25 mm diameter mixed cellulose ester (MCE) filter cassettes with a pore size of 0.8 µm

1) Sample typ	рe
---------------	----

FS = Field Sample

EB = Equipment Blank

FB = Field Blank

FP = Field Split

FD = Field Duplicate

LB = Lot Blank

2) ABS Scenario

- 1) Surface Soil Sampling
- 2) Shallow Sub-Surface Sampling
- 3) Sub-Surface Rock/Geologic Sampling
- 4) Driving Work Vehicles

4) Receptor: Backhoe Operator, Sampler, Drill Rig Operator, Driver/Passenger

3) ABS Activity

- a) Collection, Mixing, Sample Storage
- b) Pit Excavation, Pit Filling
- d) Core Drilling

- e) Core Collection, Core Mixing-Homogenizing, Sample Storage,
- f) Excavating RockFace
- g) Geologic Sample Collection
- h) Driving

Tetra Tech, Inc.
Activity-Based Sampling Project (ABS)

Date: 1012 14

Cassette Lot No: 32946

ABS Scenario (check one):

Collected By: Collected By: Log Book No: 2

Flow Rate-Start Time On Initials of ABS Pump Rotometer Sample ABS Flow Rate-Stop Description/ Work Zone Receptor⁴ Air Sample # Time Off Scenario ² Personnel Activity³ Type 1 I.D.# I.D.# **Total Volume** Size (square feet) **Total Minutes** Sampled (Liters) 06501 050 4.0/3.7 RJ BC-ABS-00007 1 sample 827189 W # Z FS SAMpler A Grids 240 mins Wer QF (P) **BC-ABS-00008** FB

NOTES: All ABS samples will be collected on 25 mm diameter mixed cellulose ester (MCE) filter cassettes with a pore size of 0.8µm

1)	Sam	ple	Type
----	-----	-----	------

FS = Field Sample

EB = Equipment Blank

FB = Field Blank

FP = Field Split

FD = Field Duplicate

LB = Lot Blank

2) ABS Scenario

- 1) Surface Soil Sampling
- 2) Shallow Sub-Surface Sampling
- 3) Sub-Surface Rock/Geologic Sampling
- 4) Driving Work Vehicles

4) Receptor: Backhoe Operator, Sampler, Drill Rig Operator, Driver/Passenger

3) ABS Activity

- a) Collection, Mixing, Sample Storage
- b) Pit Excavation, Pit Filling
- d) Core Drilling

e) Core Collection, Core Mixing-Homogenizing, Sample Storage,

Page

- f) Excavating RockFace
- g) Geologic Sample Collection
- h) Driving

Tetra Tech, Inc.							
Activity-Based Sampling Project (ABS)	ABS Scenario	□ 0fo 0!!	#6.0	☐ Rock/Geo	☐ Driving	72	
Date: (4)3 14	(check one):	☐ Surface Soil	Sub-Surface		00.000.00		
Cassette Lot No: 32946	Collected By: $\ \ \bigcirc$		ø	Log Book No:	.1	Page	,
						. age	•

Air Sample #	Pump I.D.#	Rotometer I.D.#	Sample Type	ABS Scenario ²	Time On Time Off Total Minutes	Flow Rate-Start Flow Rate-Stop Total Volume (Liters)	Description/ Work Zone Size (square feet)	Initials of Personnel Sampled	ABS Activity ³	Receptor ⁴
BC-ABS-00009	827201	W-02	FS	2	0735 / 1035 1200 / 1300 240 mins	4.0 14.0 4.0 14.0 960 Were	8 TEST PITS	AB	В	Backnee
BC-ABS-00010	827994				0744 / 1044 1300 / 1400 240 mins	4.0 / 4.0 4.0 / 4.0 960 liter		ES	A	Sampler
BC-ABS-00011			丰岛			1		00 115		
					I I	1			9038-000	
						<i>I I</i>				

NOTES: All ABS samples will be collected on 25 mm diameter mixed cellulose ester (MCE) filter cassettes with a pore size of 0.8µm

1)	Sample	Ту	pe

FS = Field Sample EB = Equipment Blank
FB = Field Blank FP = Field Split
FD = Field Duplicate LB = Lot Blank

2) ABS Scenario

- 1) Surface Soil Sampling
- 2) Shallow Sub-Surface Sampling
- 3) Sub-Surface Rock/Geologic Sampling
- 4) Driving Work Vehicles

4) Receptor: Backhoe Operator, Sampler, Drill Rig Operator, Driver/Passenger

3) ABS Activity

a) Collection, Mixing, Sample Storage

b) Pit Excavation, Pit Filling

d) Core Drilling

- e) Core Collection, Core Mixing-Hornogenizing, Sample Storage,
- f) Excavating RockFace
- g) Geologic Sample Collection
- h) Driving

Tetra Tech, Inc.		202			
Activity-Based Sampling Project (ABS)	ABS Scenario	☐ Surface Soil	Sub-Surface	☐ Rock/Geo	☐ Driving
Date: 6 4 14	(check one):	- Surface Soil	Sub-Surface		
Cassette Lot No: 32946	Collected By:	UP.		Log Book No:	4,2

Air Sample #	Pump I.D.#	Rotometer I.D.#	Sample Type 1	ABS Scenario ²	Time On Time Off Total Minutes	Flow Rate-Start Flow Rate-Stop Total Volume (Liters)	Description/ Work Zone Size (square feet)	Initials of Personnel Sampled	ABS Activity ³	Receptor ⁴
BC-ABS-00012	827189	WOZ	FS	l	240 mrs	4.0 1 4.0 1 960 Wes	& 55 bids	HÇ	A	SAMPIER
BC-ABS-00013	827833	LV-02	FS	3	0725 1 1015 1125 1 1137 244 MINS	4.013.9 3.8 13.8 945.5 Vilus	2 HSA	ELS	D	Drill Rig Operator
BC-ABS-00014	827126	LV-02	FS	3	0730 11015 1/27/1242 240 MINS	4.0 13.8 3.8 13.8 924 Wes	<u></u>	RF	E	SAMPLER
BC-ABS-00015	/		FB		1	/				
					1	<i>I I</i>				

NOTES: All ABS samples will be collected on 25 mm diameter mixed cellulose ester (MCE) filter cassettes with a pore size of 0,8 µm

11	San	مامه	Type	
	San	ible	IVD	3

FS = Field Sample

EB = Equipment Blank

FB = Field Blank

FP = Field Split

FD = Field Duplicate LB = Lot Blank

2) ABS Scenario

- 1) Surface Soil Sampling
- 2) Shallow Sub-Surface Sampling
- 3) Sub-Surface Rock/Geologic Sampling
- 4) Driving Work Vehicles

4) Receptor: Backhoe Operator, Sampler, Drill Rig Operator, Driver/Passenger

3) ABS Activity

- a) Collection, Mixing, Sample Storage
- b) Pit Excavation, Pit Filling
- d) Core Drilling

e) Core Collection, Core Mixing-Homogenizing, Sample Storage,

Page /

- f) Excavating RockFace
- g) Geologic Sample Collection
- h) Driving

Tetra Tech, Inc.	AIR SAMI LING DATA							
Activity-Based Sampling Project (ABS) Date: 65/14	ABS Scenario (check one):	☐ Surface Soil	☐ Sub-Surface	□ Rock/Geo	風 Driving			
Cassette Lot No: 32946	Collected By: 500"	H Holle		Log Book No:	-			

Page /

Air Sample #	Pump I.D.#	Rotometer I.D. #	Sample Type ¹	ABS Scenario ²	Time On Time Off Total Minutes	Flow Rate-Start Flow Rate-Stop Total Volume (Liters)	Description/ Work Zone Size (square feet)	Initials of Personnel Sampled	ABS Activity ³	Receptor ⁴
BC-ABS-00016	HV-44	Groundbert Ryen Johns T29T	F5	4	7:40 1 8:40 60mm	10,06 1 10.06 1 400 L		SH	h	Deiver
BC-ABS-00017	HV-pu	Broadbeat Ryen Johns T29T	F5	4	9100 1 10100 1 60mm	10,021 10.02 1 (e002		SH	h	Dino
					<i>I</i>	1				
					1	1				
					1	<i>I I</i>				

NOTES: All ABS samples will be collected on 25 mm diameter mixed cellulose ester (MCE) filter cassettes with a pore size of 0.8 µm

1)	Sample	e Type
----	--------	--------

FS = Field Sample EB = Equipment Blank

FB = Field Blank FP = Field Split

FD = Field Duplicate LB = Lot Blank

2) ABS Scenario

1) Surface Soil Sampling

2) Shallow Sub-Surface Sampling

3) Sub-Surface Rock/Geologic Sampling

4) Driving Work Vehicles

4) Receptor: Backhoe Operator, Sampler, Drill Rig Operator, Driver/Passenger

3) ABS Activity

a) Collection, Mixing, Sample Storage

b) Pit Excavation, Pit Filling

d) Core Drilling

e) Core Collection, Core Mixing-Homogenizing, Sample Storage,

f) Excavating RockFace

g) Geologic Sample Collection

h) Driving

Tetra Tech, Inc.					
Activity-Based Sampling Project (ABS) Date: 6/5/14	ABS Scenario (check one):	☐ Surface Soil	Sub-Surface	☐ Rock/Geo	☐ Driving
Cassette Lot No: 32946	Collected By: $\angle P$)	Е	Log Book No:	4

Flow Rate-Start Time On Initials of ABS ABS Description/ Work Zone **Pump** Rotometer Sample Flow Rate-Stop Receptor⁴ Scenario 2 Air Sample # Time Off Personnel Activity³ Type 1 I.D.# I.D.# **Total Volume** Size (square feet) **Total Minutes** Sampled (Liters) 080571205 4.0 / 3.9 55-36 4 Dvill FLS **BC-ABS-00018** 427994 LV-02 FS 3 55-46 HSA D Ris 240 min OPERATOR 080511205 40 140 827201 W-DZ **BC-ABS-00019** LP E FS 3 SAMPLEY 960 Wus 240 min BC-ABS-00021 FB

NOTES: All ABS samples will be collected on 25 mm diameter mixed cellulose ester (MCE) filter cassettes with a pore size of 0.8µm

11	Sa	mn	le 1	Fype

FS = Field Sample EB = Equipment Blank
FB = Field Blank FP = Field Split

FD = Field Duplicate LB = Lot Blank

2) ABS Scenario

- 1) Surface Soil Sampling
- 2) Shallow Sub-Surface Sampling
- 3) Sub-Surface Rock/Geologic Sampling
- 4) Driving Work Vehicles

4) Receptor: Backhoe Operator, Sampler, Drill Rig Operator, Driver/Passenger

3) ABS Activity

- a) Collection, Mixing, Sample Storage
- b) Pit Excavation, Pit Filling
- d) Core Drilling

e) Core Collection, Core Mixing-Homogenizing, Sample Storage,

Page

- f) Excavating RockFace
- g) Geologic Sample Collection
- h) Driving

Tetra Tech, Inc. Activity-Based Sampling Project (ABS)	ABS Scenario	C Surface Sail	☐ Sub-Surface	☐ Rock/Geo	Ճ Driving	
Date: 6-5-14	(check one):	☐ Surface Soil	Li Sub-Surface			
Cassette Lot No: 33498	Collected By:	SAH		Log Book No:		Page /

Air Sample #	Pump I.D.#	Rotometer I.D. #	Sample Type ¹	ABS Scenario ²	Time On Time Off Total Minutes	Flow Rate-Start Flow Rate-Stop Total Volume (Liters)	Description/ Work Zone Size (square feet)	Initials of Personnel Sampled	ABS Activity ³	Receptor ⁴
BC-ABS-00020	547156	Diy Cal 502427	FS	4	2.5 min	2011 2.011 5 L		SH	h	Diny
					<i>I</i>	<i>I</i>				
					<i>I</i>	1				
					1	1				
					1	<i>I I</i>				

NOTES: All ABS samples will be collected on 25 mm diameter mixed cellulose ester (MCE) filter cassettes with a pore size of 0.8µm

1)	Sam	ple	Type

FS = Field Sample

EB = Equipment Blank

FB = Field Blank

FP = Field Split

FD = Field Duplicate LB = Lot Blank

2) ABS Scenario

- 1) Surface Soil Sampling
- 2) Shallow Sub-Surface Sampling
- 3) Sub-Surface Rock/Geologic Sampling
- 4) Driving Work Vehicles

4) Receptor: Backhoe Operator, Sampler, Drill Rig Operator, Driver/Passenger

3) ABS Activity

a) Collection, Mixing, Sample Storage

b) Pit Excavation, Pit Filling

d) Core Drilling

- e) Core Collection, Core Mixing-Homogenizing, Sample Storage,
- f) Excavating RockFace
- g) Geologic Sample Collection
- h) Driving

Date: 6-6-14 (check one):	io ☐ Surface Soil	☐ Sub-Surface	☐ Rock/Geo	区 Driving	
		D Sub-Surface		1	
Cassette Lot No: 32946 Collected By	r SAH		Log Book No:		

Flow Rate-Start Time On initials of Sample ABS Pump Rotometer Flow Rate-Stop Description/ Work Zone ABS Receptor⁴ Air Sample # Time Off Scenario 2 Personnel Activity³ I.D.# Type 1 I.D.# Total Volume Size (square feet) **Total Minutes** Sampled (Liters) Brondbeah 065010.75 10.06/10.06 Driver Ryon Juros BC- ABS - 000 Z3 HV-04 FS SH Passingin T29T 60mm (100L 0755/0855 10.06 / 10.66 Delver HU-04 FS T29T SH 4 BC- ABS- OUDZY h 0625474 60,nn (000L 0900 11000 10.04/ 10.04 DEGUL BC. ABS- 00025 HV-04 FS 4 T297 SH Passing h 60mm 1000L

NOTES: All ABS samples will be collected on 25 mm diameter mixed cellulose ester (MCE) filter cassettes with a pore size of 0.8µm

1) (3am	ple	Type
------	-----	-----	------

FS = Field Sample EB = Equipment Blank

FB = Field Blank

FP = Field Split

FD = Field Duplicate

LB ≈ Lot Blank

2) ABS Scenario

- 1) Surface Soil Sampling
- 2) Shallow Sub-Surface Sampling
- 3) Sub-Surface Rock/Geologic Sampling
- 4) Driving Work Vehicles

4) Receptor: Backhoe Operator, Sampler, Drill Rig Operator, Driver/Passenger

3) ABS Activity

a) Collection, Mixing, Sample Storage

b) Pit Excavation, Pit Filling

d) Core Drilling

- e) Core Collection, Core Mixing-Homogenizing, Sample Storage,
- f) Excavating RockFace
- g) Geologic Sample Collection
- h) Driving

	ABS Scenario (check one):	☐ Surface Soil	□ Sub-Surface	☐ Rock/Geo	A Driving			
	Collected By:	SAH		Log Book No:		P	Page	1

Air Sample #	Pump I.D.#	Rotometer I.D.#	Sample Type ¹	ABS Scenario ²	Time On Time Off Total Minutes	Flow Rate-Start Flow Rate-Stop Total Volume (Liters)	Description/ Work Zone Size (square feet)	Initials of Personnel Sampled	ABS Activity ³	Receptor ⁴
BC-ABS-00022	547156	Divent Seint # 10249	F5	4	1 1 2.5 mm	201 / 201 1 5 U		SH	h	Desco
BC-ABS-00026			FB		<i>I</i>	1				
BC- ABS- 00027			LB		<i>I I</i>	1	_			=
					/	1			2	
					/ /	1				

NOTES: All ABS samples will be collected on 25 mm diameter mixed cellulose ester (MCE) filter cassettes with a pore size of 0.8µm

1) Sample Type	Type	e 1	ıpı	П	a	8	7)	
----------------	------	------------	-----	---	---	---	----	--

EB = Equipment Blank

FS = Field Sample

PD - Edaibureur pigu

FB = Fleid Blank

FP = Field Split

FD = Fleid Dupilcate

LB = Lot Blank

2) ABS Scenario

- 1) Surface Soil Sampling
- 2) Shallow Sub-Surface Sampling
- 3) Sub-Surface Rock/Geologic Sampling
- 4) Driving Work Vehicles

4) Receptor: Backhoe Operator, Sampler, Drill Rig Operator, Driver/Passenger

- 3) ABS Activity
- a) Collection, Mixing, Sample Storage
- b) Pit Excavation, Pit Filling
- d) Core Drilling

- e) Core Collection, Core Mixing-Homogenizing, Sample Storage,
- f) Excavating RockFace
- g) Geologic Sample Collection
- h) Driving

Date: 6/6/14		(check one):		⊔ Surfac	e Soil LYSub-St	rface	192				
Cassette Lot No: 329	46	Collected B	ربن :۷				Log Book	No: 1	Pa	ige /	63
ir Sample #	Pump I.D.#	Rotometer I.D. #	Sample Type ¹	ABS Scenario ²	Time On Time Off Total Minutes			Description/ Work Zone Size (square feet)	initials of Personnel Sampled	ABS Activity ³	Recepto
C-ABS-06928	82712	e W-02	FS	a	240 Mm		1 3.8 1 6 lular	Le Test Pits	ВА	3	Buckh
6C-ABS-00029	81783	35 J			240 min		13.8 1 lilas		LP	A	Sample
3C-ABS-00030			FB		1		1			/	/
					ļ.,		1				

NOTES: All ABS samples will be collected on 25 mm diameter mixed cellulose ester (MCE) filter cassettes with a pore size of 0.8 µm

ABS Scenario

)		

FS = Field Sample EB = Equipment Blank

FB = Field Blank

Tetra Tech, Inc.

Activity-Based Sampling Project (ABS)

ED - Ederburgut Digiti

I D - I lord Didilly

FP = Field Split

FD = Field Duplicate

LB = Lot Blank

2) ABS Scenario

- 1) Surface Soil Sampling
- 2) Shallow Sub-Surface Sampling
- 3) Sub-Surface Rock/Geologic Sampling
- 4) Driving Work Vehicles

- 4) Receptor: Backhoe Operator, Sampler, Drill Rig Operator, Driver/Passenger
- 3) ABS Activity
- a) Collection, Mixing, Sample Storage
- b) Pit Excavation, Pit Filling
- d) Core Drilling

- e) Core Collection, Core Mixing-Homogenizing, Sample Storage,
- f) Excavating RockFace
- g) Geologic Sample Collection
- h) Driving

□ Rock/Geo

☐ Driving

☐ Surface Soil ☐ Sub-Surface

Date: V V 14	Ĺ	(CHECK ONE).		<u> </u>								
Cassette Lot No:		Collected By: Log Book No: 2							Page /			
Air Sample#	Pump I.D.#	Rotometer 1.D. #	Sample Type 1	ABS Scenario ²	Time On Time Off Total Minutes	Flow Rate-Start Flow Rate-Stop Total Volume (Liters)	Description/ Work Zone Size (square feet)	Initials of Personnel Sampled	ABS Activity ³	Receptor ⁴		
BC-ABS-00031	827994	W.02	FS	3	240 mins	4.0 14.0 1 960 Wes	RC-1 core Drilling c-15 depth	TCT	D	Operator Drill Fig		
BC-ABS-00032	827201			3	240 mine	4.0 13.8 936 Wers		RS	F	Sample		
BC-ABS-00033			FB			1						
					l I	<i>I</i>						

NOTES: All ABS samples will be collected on 25 mm diameter mixed cellulose ester (MCE) filter cassettes with a pore size of 0.8 µm

ABS Scenario

(check one)

	1)	8	۹	m	P	e	T	y	P	0
--	----	---	---	---	---	---	---	---	---	---

FS = Field Sample EB = Equipment Blank

Tetra Tech, Inc.Activity-Based Sampling Project (ABS)

101

FB = Fleid Blank

FP = Fleid Split

FD = Field Dupilcate

LB = Lot Blank

2) ABS Scenario

- 1) Surface Soil Sampling
- 2) Shallow Sub-Surface Sampling
- 3) Sub-Surface Rock/Geologic Sampling
- 4) Driving Work Vehicles

4) Receptor: Backhoe Operator, Sampler, Drill Rig Operator, Driver/Passenger

3) ABS Activity

- a) Collection, Mixing, Sample Storage
- b) Pit Excavation, Pit Filling
- d) Core Drilling

- e) Core Collection, Core Mixing-Homogenizing, Sample Storage,
- f) Excavating RockFace
- g) Geologic Sample Collection
- h) Driving

☑/Rock/Geo

□ Driving

Tetra Tech, Inc. Activity-Based Sampling Project (ABS) Driving **ABS Scenario** ☐ Rock/Geo ☐ Surface Soil ☐ Sub-Surface (check one): Date: 8-22-14 Scott Holle Collected By: Log Book No:

Cassette Lot No: 32946

Page 1/1

Air Sample #	Pump I.D.#	Rotometer I.D. #	Sample Type ¹	ABS Scenario ²	Time On Time Off Total Minutes	Flow Rate-Start Flow Rate-Stop Total Volume (Liters)	Description/ Work Zone Size (square feet)	Initials of Personnel Sampled	ABS Activity ³	Receptor ⁴
BC-ABS-DRV-1001	Broad - bent pump	Bius Defender 510-H	FS	4	0808 1 ON 0908 1 OFF 60 minutes	10.0 1 ON 10.0 1 OFF	throughout Phase I	SH	H	Driver /
BC-ABS-DRV-2002	Broad. Bent pump	Bios Defender 510-H	FS	4	0910 1 ON 1010 1 OFF 60 min	10.0 1 ON 10.0 1 OFF	throughout Phase I	SH	Н	Driver /
BC-ABS-DRU-FB			FB		<i>I</i>	<i>l</i>				
					<i>I</i>	l I				
					/	<i>I I</i>				

NOTES: All ABS samples will be collected on 25 mm diameter mixed cellulose ester (MCE) filter cassettes with a pore size of 0.8µm

1) Sample Type

FS = Field Sample EB = Equipment Blank

FB = Field Blank

FP = Field Split

FD = Field Duplicate

LB = Lot Blank

2) ABS Scenario

- 1) Surface Soil Sampling
- 2) Shallow Sub-Surface Sampling
- 3) Sub-Surface Rock/Geologic Sampling
- 4) Driving Work Vehicles

4) Receptor: Backhoe Operator, Sampler, Drill Rig Operator, Driver/Passenger

3) ABS Activity

- a) Collection, Mixing, Sample Storage
- b) Pit Excavation, Pit Filling
- d) Core Drilling

- e) Core Collection, Core Mixing-Homogenizing, Sample Storage,
- f) Excavating RockFace
- g) Geologic Sample Collection
- h) Driving