Job No. 12-095
Client Branson
Project FSC

Location of Boring
Water Level
Time
Date

Boring No. B-43 Date 11/3/12 Sheet 4 of 4
Type of Boring Core Rig D-50
Casing used ____ Size NQ Drilling mud used ____
Boring begun ____ Boring completed ____
Ground Elevation ____ referred to ____ Datum
Field Party CSS/Amdrill

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Time Required per sample	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		74-79	13:20	2	1.5		75	(H	Plastic clay. Orange & green, contains sandstone fragments
		79-84	6:15		2		80	CH	" "
		84-89	7:35		1		85	CH	" "
		89-94	7:35		2		90		
		94-99	9:00		2.5		95	SC	Clayey sand. Brown-orange. Contains sandstone fragments.
							100	Dol	Dolomite EOB @ 99'

Geologist

Job No. 12-095
Client Brawn
Project FSI

Location of Boring	N 35° 57' 24.4"
Water Level	W 94° 36' 56.2"
Time	
Date	

Boring No. B-44 Date 11/3/12 Sheet 1 of 1
Type of Boring Coxe Rig D-50
Casing used ____ Size NQ Drilling mud used Poly-plus
Boring begun 1335 Boring completed 1420
Ground Elevation ____ referred to ____ Datum
Field Party CCS/Amdt

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION: Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		0-4		2	0		0		Soft - No recovery
		4-9	8-6-6	3.5			5	CH	Plastic clay - Orange, Contains dolomite cobbles Contain weathered sandstone pebbles
		9-14	15-20	3			10	CH	" "
		14-19		2			15	CH	" "
		19-24					20		EOB @ 19'
							25		

Geologist

Job No. _____

Client National Silica

Project Bell Property Prospecting

Location of Boring	N 35° 57' 28.1"
Water Level	W 091° 36' 47.0"
Time	
Date	

Boring No B-45 Date 3-24-14 Sheet 1 of 1

Type of Boring Wireline Rig CME-55

Casing used ____ Size na Drilling mud used ____

Boring begun 09:40 Boring completed 12:00

Ground Elevation ____ referred to ____ Datum

Field Party CES / Andvill

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		0-~~8.5~~ 4			0.5		0	CH	No recovery. Clay drill cuttings. Orange.
								SS	Sandstone. Medium grained. Friable. White w/ orange oxidation staining.
		~~8.5-8.5~~			~~0.0~~			CH	~~Sandy clay. Plastic. Green w/ red-orange oxidation staining.~~
		4-9			3		5	SS	Sandstone. White. Medium to fine grained. Soft. Friable. Moderate to well rounded.
		~~8.5-13.5~~							
		9-14			1.5		10	SS	Sandstone. Very soft. White to orange. Fine to medium grained. Moderate to well rounded. Friable.
		~~13.5-18.5~~							
		14-19			1.8		15	CH	Sandy clay. Plastic. Green w/ Orange oxidation staining
		~~18.5-23.5~~						SS	Sandstone. Weathered. White w/ black staining. Soft. Containing small pockets of green clay. Friable. Fine to medium grained.
		19-24			2.6		20	CH	Sandy clay. Plastic. Orange brown.
		~~23.5-28~~							Clay becomes green. Less sand.
							25		

Geologist [signature]

Job No. _____

Client National Silica

Project Bell property Prospecting

Location of Boring	N 35° 57' 29.2"
Water Level	W 091° 36' 53.2"
Time	
Date	

Boring No. B-46 Date 3-24-14 Sheet 1 of 2

Type of Boring Wireline Core Rig CME 55

Casing used _____ Size NQ Drilling mud used _____

Boring begun 12:26 Boring completed 14:00

Ground Elevation _____ referred to _____ Datum

Field Party CB/Amdrill

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		0-4			0.1		0	SS	Sandstone. White w/ orange oxidation staining. Medium soft. Fine grained. Moderate to well rounded.
		4-9			2.1		5	SS	Sandstone. White w/ orange oxidation staining. Medium to medium hard. Moderately rounded. Fine to medium grained.
		9-14			1.5		10	SS	" "
								CH	Sandy clay. Orange-brown.
		14-19			2.1		15	SS	Sandstone. Soft to medium soft. Green color. Well rounded. Fine to medium grained.
								CH	Sandy clay. Orange
		19-24			1.8		20	SS	White sandstone. Medium hard.
								CH	Orange clay.
								SS	Sandstone
		24-25					25	CH	

Geologist _____

Job No. _____

Client National Silica

Project Bell Property Prospecting

Location of Boring
Water Level
Time
Date

Boring No. B-46 Date 3-24-14 Sheet 1 of 2

Type of Boring Direct Push Rig CME-55

Casing used _____ Size NQ Drilling mud used _____

Boring begun 1226 Boring completed 14:05

Ground Elevation _____ referred to _____ Datum

Field Party CSS/Amdrill

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		25-29			1.1		25	CH	Sandy clay, green w/ orange oxidation staining. Plastic.
							30		EOB @ 29'

Geologist _____

Job No. _____

Client National Silica

Project Bell Property Prospecting

Location of Boring	N 35° 57' 29.3"
Water Level	
Time	W 091° 37' 01.4"
Date	

Boring No. B-47 Date 3-24-14 Sheet 1 of 3

Type of Boring Wireline Core Rig CME-55

Casing used ____ Size NQ Drilling mud used ____

Boring begun 1500 Boring completed 08:45

Ground Elevation ____ referred to ____ Datum

Field Party CCS/Amdrill

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		0-4			1.8		0	SS	Sandstone. White. Moderately rounded. Fine grained.
		4-9			3		5	SS	Sandstone. White w/ mild orange oxidation staining. Medium hardness. Fine to medium grained. Moderate to well rounded.
		9-14			5		10	SS	" "
		14-19			5		15	SS	Sandstone. White. Medium hard to hard. Fine grained. Moderate to well rounded.
		19-24			5		20	SS	" "
		24-25					25		

Geologist [signature]

Job No. _____

Client National Silica

Project Bell Property Prospecting

Location of Boring	
Water Level	
Time	
Date	

Boring No. B-47 Date 3-24-14 Sheet 2 of 3

Type of Boring Wireline Core Rig CME-55

Casing used _____ Size NQ Drilling mud used _____

Boring begun _____ Boring completed _____

Ground Elevation _____ referred to _____ Datum

Field Party CES/Amdrill

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		25-29			4.8		25	SS	Sandstone. White w/ orange oxidation staining. Medium hard to hard. Fine to medium grained. Moderate to well rounded.
		29-34			4.9		30	SS	" " Contains fractures that have thin coating of orange clay.
		34-39			4.8		35	SS	Sandstone. White - gray w/ orang oxidation staining. Medium Hard to hard. Fine to medium grained. Moderate to well rounded.
		39-44			5		40	SS	Sandstone. Blue-gray w/ orange oxidation Staining. Medium hard to hard. Fine to medium grained.
		44-49			4		45	SS	Sandstone. Green to blue-gray. Has orange mottling. Contains small fractures w/ orange clay lining. Medium to medium hard. Fine to medium grained. Moderate to well rounded.
		49-50			1		50	CH SS	Green clay w/ orange Staining (Illite)

Geologist RSMA

Job No. _____

Client National Silica

Project Bell Property Prospecting

Location of Boring
Water Level
Time
Date

Boring No. B-47 Date 3-19-14 Sheet 3 of 3

Type of Boring Wireline Core Rig CME-55

Casing used _____ Size NQ Drilling mud used _____

Boring begun _____ Boring completed _____

Ground Elevation _____ referred to _____ Datum

Field Party CCS / Ambrill

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		50-54			0		50	?	Drilled very soft. Most likely clays.
		54-59			1.8		55	cl	Sandy clays Brown-orange. Contained lenses of weathered sandstone.
		59-64			2		60		
								ss	Sandstone - White w/ orange oxidation staining Medium hard.
								Dol	Dolomite.
							65		
									EOBQ 64'
							70		
							75		

Geologist J. Bolmer

Job No. _____

Client Natural Silica

Project Bell Property Prospecting

Location of Boring	N 35° 57' 31.4"
Water Level	
Time	W 094° 37' 10.4"
Date	

Boring No B-4P Date 3-25-14 Sheet 1 of 3

Type of Boring Wireline Core Rig Core-55

Casing used _____ Size NQ Drilling mud used _____

Boring begun 0940 Boring completed 1425

Ground Elevation _____ referred to _____ Datum

Field Party CS / Rudisill

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		0-4			1.7		0	SS	Sandstone. White w/ minor orange mottling soft to medium hardness. Fine to medium grained. Moderately rounded. Friable.
		4-9			5		5	SS	Sandstone, White. Medium to medium hard. Friable. Fine to medium grained. Moderate to well rounded.
		9-14			4.9		10	SS	" "
		14-19			5		15	SS	Sandstone, White w/ orange banding. Soft to medium hardness. Fine to medium grained. Moderate to well rounded. Friable.
		19-24			5		20	SS	" "
		24-25			1		25	SS	" "

Geologist _____

Job No. _____

Client National Silica

Project Bell Property Prospecting

Location of Boring
Water Level
Time
Date

Boring No. B-48 Date 3-25-14 Sheet 1 of 3

Type of Boring Wireline Core Rig CME-55

Casing used _____ Size NQ Drilling mud used _____

Boring begun _____ Boring completed _____

Ground Elevation _____ referred to _____ Datum

Field Party CES / Amdrill

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		25-29			4		25	SS	Sandstone. White. Medium to medium hard. Fine to medium grained. Moderate to well rounded. Friable.
		29-34			5		30	SS	" "
		34-39			5		35	SS	" "
		39-44			5		40	SS	Sandstone. White w/ orange staining. Contains fracturing. Medium hard to hard. Fine grained. Moderate to well rounded.
		44-49			4.2		45	SS	Sandstone. White ~~or~~ Contains fractures w/ orange clay. Medium hard to hard. Fine grained. Moderate to well rounded.
								SS	Sandstone. White. Fractured w/ clay lining. Hard
		49-50			1		50		

Geologist DSM

Job No. _____

Client National Silica

Project Bell Property Pulpreting

Location of Boring
Water Level
Time
Date

Boring No. B-48 Date 3-25-14 Sheet 3 of 3

Type of Boring Wireline Core Rig CME-55

Casing used _____ Size NQ Drilling mud used _____

Boring begun _____ Boring completed _____

Ground Elevation _____ referred to _____ Datum

Field Party CCS/Hydrill

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		50-54			4		50	SS	Sandstone. White. Fractured w/ orange clay lining fractures. Med. hard to hard. Fine to medium grained. Moderate to well rounded.
		54-59			5		55	SS	Sandstone. White - pale green. Medium hard. Contains clay seam (~2 cm). Fine to medium grained. Moderate to well sorted.
		59-64			2		60	SS	
								?	Very soft. No recovery
								SS	Sandstone.
		64-69			0.5		65	?	Very soft. Poor recovery. Contained weathered sandstone w/ clay residue.
		69-74			0		70	?	No recovery. Drill hole drained of drill mud during core removal.
									100% LOU
									? Sandstone.
									No recovery.
		74-75			1		75	SS	EOB @ 75'

Geologist _____

Job No. _____

Client National Silica

Project Bell Property Prospecting

Location of Boring	N 35° 57' 33.4"
Water Level	W 091° 37' 03.4"
Time	
Date	

Boring No. B-49 Date 3-25-14 Sheet 1 of 3

Type of Boring Wireline Core Rig CME-55

Casing used _____ Size NQ Drilling mud used _____

Boring begun 1515 Boring completed 0955

Ground Elevation _____ referred to _____ Datum

Field Party CES / Amdrill

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION
		0-5			0		0	?	Very soft. No recovery.
		5-10			1.5		5	SS	Sandstone. Orange. Medium soft. Fine to medium grained. Moderate to well sorted. Friable.
		10-15			4.2		10	SS	No recovery, very soft. Drill cuttings indicate loose sand.
									Core slid out of barrel and was retrieved on next run.
		15-20			4		15	SS	Sandstone. White w/ orange banding. Hard. Fine grained. Moderate to well rounded.
									" "
		20-25			5		20	SS	
							25		

Geologist _____

Job No. _____

Client National Silica

Project Bell Property Prospecting

Location of Boring
Water Level
Time
Date

Boring No B-44 Date 3-25-14 Sheet 2 of 3

Type of Boring Wireline Core Rig CME-55

Casing used _____ Size NQ Drilling mud used _____

Boring begun _____ Boring completed _____

Ground Elevation _____ referred to _____ Datum

Field Party CCS / Ambrill

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH.	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		25-30			5		25	SS	Sandstone, White w/ minor orange oxidation staining. Hard to very hard. Fine grained. Moderate to well rounded.
		30-35			5		30	SS	" "
		35-40			4.2		35	SS	Sandstone - White - orange. Medium soft to medium hardness. Fine to medium grained. Moderate to well rounded. Friable.
		40-45			4.8		40	SS	" "
		45-50			4		45	SS	Sandstone - Pale green w/ orange banding. Medium to medium hard. Fine to medium grained. Moderate to well rounded.
							50		

Geologist _____

Job No. _____

Client National Silica

Project Bell Property Prospecting

Location of Boring
Water Level
Time
Date

Boring No. B-44 Date 3-26-14 Sheet 3 of 3

Type of Boring Wireline Core Rig CME-55

Casing used _____ Size NQ Drilling mud used _____

Boring begun _____ Boring completed _____

Ground Elevation _____ referred to _____ Datum

Field Party CES/Andrill

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		50-55			1		50	SS	Sandstone, white w/ orange oxidation staining, medium hard, fine to medium grained
								?	Very soft. No recovery
		55-60			0.5		55	CL	Drill cuttings appear to be orange clay. Drilled very soft
								DOL	Dolomite
		60-65					60		EOBQ 60'
		65-70					65		
		70-75					70		
							75		

Geologist [signature]

Job No. _____

Client National Silica

Project Bell Property Prospecting

Location of Boring	N 35° 57' 35.2"
Water Level	W 094° 36' 57.6"
Time	
Date	

Boring No. B-50 Date 3-26-14 Sheet 1 of 2

Type of Boring Wireline core Rig CME-55

Casing used _____ Size NQ Drilling mud used _____

Boring begun 11:00 Boring completed 17:15

Ground Elevation _____ referred to _____ Datum

Field Party CTS/Amarillo

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		0-4			0.1		0	CL	Red clay.
								SS	Sandstone. Very hard.
		4-9			4		5	CH	Green clay w/ orange oxidation staining. Very plastic. Sticky.
		9-14			1.7		10	CH	" "
		14-19			1		15	SS	Silicified sandstone-Crystalline. Very hard. Pale brown.
		19-24			2		20	CH	Plastic clay. Brown-orange.
								SS	silicified sandstone.
		24-25					25		

Geologist [signature] DSMA

Job No. _____

Client National Silica

Project Bell Property Prospecting

Location of Boring
Water Level
Time
Date

Boring No. B-55 Date 3-26-14 Sheet 2 of 2

Type of Boring Wireline Core Rig CME-55

Casing used _____ Size NQ Drilling mud used _____

Boring begun _____ Boring completed _____

Ground Elevation _____ referred to _____ Datum

Field Party CES / Amdrill

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		25-29			1.8		25	CH SS	Mix of plastic clay & silicified sandstone boulders.
		29-34			4		30	CH SS	" "
		34-39			2		35	CH SS	" "
		39-44			1		40	CH SS	" "
		44-49			0.6		45		
							50	DOL	Dolomite EOB @ 49'

Geologist _____

Job No. _____

Client National Silica

Project Ball Property Prospecting

Location of Boring	N 35° 57' 37.7"
Water Level	
Time	W 091° 36' 56.7"
Date	

Boring No. B-5 Date 3-27-14 Sheet 1 of 5

Type of Boring Wireline Core Rig CME-55

Casing used _____ Size NQ Drilling mud used _____

Boring begun 0900 Boring completed 1455

Ground Elevation _____ referred to _____ Datum

Field Party CCS/Amdrill

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		0-4			1		0	SP/SS	Mix of sand & weathered sandstone fragments.
		4-9			4.1		5	SS	Sandstone. Orange transitions to white. Soft to medium hardness. Friable. Fine to medium grained. Moderate to well rounded.
		9-14			5		10	SS	Sandstone. White w/ orange banding. Soft to medium hardness. Friable. Fine to medium grained. Moderate to well rounded.
		14-19			5		15	SS	Sandstone. White w/ orange oxidation staining. Contains fractures lined w/ clay seams. Soft to medium hard. Fine to med. grained. Moderate to well rounded.
		19-24			5		20	SS	" "
		24-25			1		25	SS	" "

Geologist _____

Job No. _____

Client National Silica

Project Bell Property Prospecting.

Location of Boring	
Water Level	
Time	
Date	

Boring No. B-51 Date 3-27-14 Sheet 1 of 5

Type of Boring Wireline Core Rig CME-55

Casing used _____ Size NQ Drilling mud used _____

Boring begun _____ Boring completed _____

Ground Elevation _____ referred to _____ Datum

Field Party CCS / Andrill

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		25-29			4		25	SS	Sandstone. White w/ minor orange oxidation staining. Medium hardness. Fine to medium grained. Well rounded. Friable.
		29-34			5		30	SS	Sandstone. White. Medium to medium hard. Fine to medium grained. Moderate to well rounded. Friable.
		34-39			5		35	SS	Sandstone. White. Soft. Fine to medium grained. Well rounded. Friable.
		39-44			5		40	SS	Sandstone. White w/ thin orange banding. Medium soft to medium. Fine to medium grained. Moderate to well rounded. Friable
		44-49			5		45	SS	Sandstone. White contains two fractures @ 46.5'. Soft to medium soft. Fine to medium grained. Moderate to well rounded. Friable
		49-50			1		50		

Geologist _____

Job No. _____

Client National Silica

Project Ball Property Prospecting

Location of Boring
Water Level
Time
Date

Boring No. B-51 Date 3-27-14 Sheet 3 of 5

Type of Boring Wireline Core Rig CME-55

Casing used _____ Size NQ Drilling mud used _____

Boring begun _____ Boring completed _____

Ground Elevation _____ referred to _____ Datum

Field Party CSS/Am drill

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		50-54			3.7		50	SS	Sandstone. White - pale green w/ orange banding. Soft to medium soft. Fine to medium grained. Moderate to well sorted. Friable.
		54-59			5		55	SS	Sandstone. White - pale green w/ orange oxidation staining. Medium soft to medium hardness. Fine to medium grained. Moderate to well rounded.
									Minor amount of red-orange clay
		59-64			5		60	SS	Sandstone. White. Medium to medium hard. Fine to medium grained. Moderate to well rounded. Friable
									" "
		64-69			5		65	SS	
		69-74			5		70	SS	Sandstone. White. Medium hard to hard. Fine to medium grained. Moderate to well rounded
									" "
		74-75			1		75		

Geologist _____

Job No. _____

Client National Silica

Project Bell Property Prospecting

Location of Boring	
Water Level	
Time	
Date	

Boring No. B-51 Date 3-27-14 Sheet 4 of 5

Type of Boring Wireline Core Rig UME-55

Casing used _____ Size NQ Drilling mud used _____

Boring begun _____ Boring completed _____

Ground Elevation _____ referred to _____ Datum

Field Party CSS/Anderson

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		75-79			4		75	SS	Sandstone - White - Hard - Fine grained, well rounded.
									Has black alteration spots and minor amount of orange clay coating.
		79-84			5		80	SS	" "
		84-89			5		85	SS	" "
		89-94			2.1		90	CL	Orange clay.
								SS	Sandstone White w/ black alteration spots Hard. Fine grained. Moderate to well rounded
		94-99			2.1		95	CL	Red - orange clay. Soft. No recovery
		99-103			0		100		

Geologist _____

Job No. _____

Client National Silica

Project Bell Property Prospecting

Location of Boring
Water Level
Time
Date

Boring No. B-51 Date 3-27-14 Sheet 5 of 5

Type of Boring Wireline Rig CME-55

Casing used _____ Size NQ Drilling mud used _____

Boring begun _____ Boring completed _____

Ground Elevation _____ referred to _____ Datum

Field Party CSS / Andrill

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		100-104			3		100	CL	Red-orange clay. No recovery.
								SS	Sandstone. White w/ black alteration spots. Medium hardness. Friable. Fine to medium grained. Moderate to well sorted.
		104-109			3.3		105		
								CL	Orange clay. Soft.
								SS	Sandstone. Same as above.
		109-114			3		110		
								CL	Orange clay. Soft. No recovery.
		114-119			0		115	CL	No recovery. Very soft. Drill cuttings consist of orange clay.
		119-124			0		120		
								CL	EOB @ 124'
							125		

Geologist [signature]

Job No. _____

Client National Silica

Project Bell Property Prospecting

Location of Boring	N 35° 57' 38.4"
Water Level	W094° 37' 04.3"
Time	
Date	

Boring No B-52 Date 3-27-14 Sheet 1 of 1

Type of Boring Wireline Core Rig CME-55

Casing used _____ Size NQ Drilling mud used _____

Boring begun 1535 Boring completed 1645

Ground Elevation _____ referred to _____ Datum

Field Party CCS/Andrill

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		0-4			0		0		No recovery
		4-9			2		5	Dol	Dolomite.
		9-14			1		10	cl	Brown-orange clay.
		14-14			0.5		15	cl	" "
		19-24			2		20	Dol	Dolomite
								cl	clay.
							25		EOB @ 24'

Geologist [signature]

Job No. _____

Client Natural Silica

Project Bell Property Prospecting

Location of Boring	N 35° 57' 32.8"
Water Level	W 091° 36' 53.0"
Time	
Date	

Boring No. B-53 Date 3-30-14 Sheet 1 of 4

Type of Boring Wireline Core Rig CME-55

Casing used ____ Size NQ Drilling mud used ____

Boring begun 10:35 Boring completed 08:15

Ground Elevation _____ referred to _____ Datum

Field Party CES/Amdin

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		0-5			1		0	CL-CH	Mix of clay & weathered sandstone fragments
		5-10			1.5		5	CH-SS	Mix of sandstone & gray, plastic clay.
		10-15			1		10	* ?	Possibly soft sand. No recovery
		15-20			4		15	SS	Sandstone. Very soft. White w/ orange oxidation staining. Fine to medium grained. Moderate to well rounded. Friable.
		20-25			4.1		20	SS	Sandstone. White w/ orange staining. Soft. Friable. Fine to medium grained. Moderate to well rounded.
							25		

Geologist _____

Job No. _____

Client National Silica

Project Bell Property Prospecting

Location of Boring	
Water Level	
Time	
Date	

Boring No. B-53 Date 3-20-14 Sheet 2 of 4

Type of Boring Wireline Core Rig CME-55

Casing used _____ Size NQ Drilling mud used _____

Boring begun _____ Boring completed _____

Ground Elevation _____ referred to _____ Datum

Field Party CCS/Amarillo

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		25-30			5		25	SS	Sandstone. Soft. Friable. White - pale orange. Fine to medium grained. More medium grains than normal. Moderate to well rounded.
							30	SS	" "
		30-35			5				
							35	SS	" "
		35-40			5				
							40	SS	Sandstone. White. Medium to Med. hard. Friable. Fine to medium grained. Moderate to well rounded.
		40-45			4.8				
								CL	Sandy clay. Orange-red.
								SS	Sandstone. Medium soft. White. Fine to medium grained. Moderate to well rounded
							45		
		45-50			4				
								CL	Red-Orange clay.
								SS	Sandstone. White. Medium to medium hard.
							50		

Geologist _____

Job No. _____

Client National Silica

Project Bell Property Prospecting

Location of Boring	
Water Level	
Time	
Date	

Boring No. B-53 Date 2-20-14 Sheet 3 of 4

Type of Boring Wireline Core Rig CME-55

Casing used _____ Size NQ Drilling mud used _____

Boring begun _____ Boring completed _____

Ground Elevation _____ referred to _____ Datum

Field Party CSS / Amdrill

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		50-55			4.5		50	SS	Sandstone. White w/ minor orange oxidation staining. Medium to medium hard. Fine to medium grained. Moderate to well rounded.
							55		
		55-60			4			CL	~~Orange~~ clay.
								SS	Sandstone. Same as above.
								CL	~~Orange~~ clay
								SS	Sandstone. Same as above.
		60-65			1.2		60		
								CL	Clay. No recovery.
							65	SS	Sandstone
		65-70			1			?	Drill through intermittent layers of soft & hard.
							70		
		70-75			1.8			SS ?	Sandstone w/ intermittent soft layers of unknown material
							75		

Geologist _____

Job No. _____

Client National Silica

Project Bell Property Prospecting

Location of Boring
Water Level
Time
Date

Boring No. B-53 Date 4-1-14 Sheet 4 of 4

Type of Boring Washing Core Rig CME-55

Casing used _____ Size NQ Drilling mud used _____

Boring begun _____ Boring completed _____

Ground Elevation _____ referred to _____ Datum

Field Party CSS / Amdrill

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		75-80			1.2		75	SS	Sandstone. Orange. Hard. Fine grained. Moderate to well cemented.
									No recovery.
		80-85			0		80		No recovery. Very soft.
							85		EOB @ 85'
							90		
							95		
							100		

Geologist _____

Job No. _____

Client National Slim

Project Bell Property Prospecting

Location of Boring	N 35° 57' 37.0"
Water Level	
Time	W 094° 37' 16.4"
Date	

Boring No. B-54 Date 3-28-14 Sheet 1 of 4

Type of Boring Wireline Core Rig CME-55

Casing used _____ Size NQ Drilling mud used _____

Boring begun 15:20 Boring completed 09:25

Ground Elevation _____ referred to _____ Datum

Field Party CES/Amdrill

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		0-5			0.5		0		No Recovery.
								?	
									Sandstone. White w/ orange oxidation staining. Medium hardness. Fine to medium grained. Moderate to well rounded. Friable.
		5-10			5		5	SS	
									" "
		10-15			5		10	SS	
									" "
		15-20			5		15	SS	
									Sandstone. White. Medium hardness. Fine to medium grained. Moderate to well rounded. Friable
		20-25			5		20	SS	
							25		

Geologist _____

Job No. _____

Client Nanimal Silica

Project Bell Property Prospecting

Location of Boring	
Water Level	
Time	
Date	

Boring No B-54 Date 3-28-14 Sheet 2 of 4

Type of Boring Wireline Core Rig Cme-55

Casing used _____ Size NQ Drilling mud used _____

Boring begun _____ Boring completed _____

Ground Elevation _____ referred to _____ Datum

Field Party CG/Amarill

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		25-30			5		25	SS	Sandstone. White w/ orange oxidation staining. Medium soft to medium hardness. Fine to medium grained. Moderate to well rounded. Friable
									" "
		30-35			5		30	SS	
		35-40			5		35	SS	Sandstone. White w/ orange, banding. Medium to medium hard. Fine to medium grained. well rounded.
									" "
		40-45			5		40	SS	
		45-50			5		45	SS	Sandstone. White w/ orange staining & black alteration spots. Medium hardness. Fine to medium grained. Moderate to well rounded.
							50		

Geologist _____

Job No. _____

Client National Silica

Project Bell Property Prospecting

Location of Boring	
Water Level	
Time	
Date	

Boring No. B-54 Date 3-30-14 Sheet 3 of 4

Type of Boring Wireline wc Rig CME-55

Casing used _____ Size NQ Drilling mud used _____

Boring begun _____ Boring completed _____

Ground Elevation _____ referred to _____ Datum

Field Party CCS/Amdrill

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		50-55			5		50	SS	Sandstone - White w/ orange oxidation staining. Medium to medium hard. Fine to medium grained. Moderate to well rounded.
		55-60			5		55	SS	" "
		60-65			5		60	SS	Sandstone - White w/ orange oxidation staining and black banding. Medium to medium hard. Fine to medium grained. Moderate to well rounded.
		65-70			5		65	SS	Sandstone - White w/ minor orange oxidation staining. Medium hard. Fine to medium grained. Moderate to well rounded
		70-75			5		70	SS	" "
							75		

Geologist _____

Job No. _____

Client National Silica

Project Bell Property Prospecting

Location of Boring
Water Level
Time
Date

Boring No. B-54 Date 3-30-14 Sheet 4 of 4

Type of Boring Wireline Core Rig CME-55

Casing used _____ Size NA Drilling mud used _____

Boring begun _____ Boring completed _____

Ground Elevation _____ referred to _____ Datum

Field Party CES/Andrill

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		75-80			5		75	SS	Sandstone. White to pale green. Medium to medium coarse. Friable. Fine to medium grained. Moderate to well rounded.
		80-85			4.2		80	SS	Sandstone. Green. Medium, silty. Friable. Fine to medium grained. Moderate to well rounded.
		85-90			0		85	CL	Orange clay. Very soft. No recovery
		90-95			2		90	CL CH	" "
		95-100					95	Di	Dolomite. EOB @ 95'
							100		

Geologist _____

Job No. _____

Client National Silica

Project Bell Property Prospecting

Location of Boring	N 35° 57' 24.9"
Water Level	
Time	W 091° 37' 16.6"
Date	

Boring No. B-55 Date 3-27-14 Sheet 1 of 5

Type of Boring Wireline Core Rig CME-55

Casing used _____ Size NQ Drilling mud used _____

Boring begun 13:00 Boring completed 14:10

Ground Elevation _____ referred to _____ Datum

Field Party CES/Amdrill

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION
		0-4			0		0	CL	Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
									clay.
		4-9			1		5		
					4.5			SS	Sandstone. Orange. Medium to medium hard. Fine to medium grained. Moderate to well rounded.
		9-14			1		10	SS CL	
								SS CL	mix of sandstone & clay.
		14-19			2.5		15	SS	Sandstone. White w/ orange oxidation staining. Medium to medium hard. fine grained. Moderate to well rounded.
								CL	clay. Green & orange.
								SS	Sandstone. White. Medium to medium hard. Fine to medium grained. Moderate to well rounded
		19-24			3		20		
								CH	Green clay w/ orange staining. Plastic
		24-25			1		25		

Geologist _____

Job No. _____

Client National Silica

Project Bell Property Prospecting

Location of Boring
Water Level
Time
Date

Boring No. B-55 Date 3-28-14 Sheet 2 of 5

Type of Boring Wireline Core Rig CME-55

Casing used _____ Size NQ Drilling mud used _____

Boring begun _____ Boring completed _____

Ground Elevation _____ referred to _____ Datum

Field Party CCS/Andrill

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		25-29			3		25	CH	Plastic clay. Red.
								SS	Sandstone. White. medium hardness. Fine to medium grained. Moderate to well rounded.
		29-34			5		30	SS	" "
		34-39			5		35	SS	" "
		39-44			5		40	SS	" "
		44-49			5		45	SS	Sandstone. White. Medium hard. Has a few black stringers staining. Fine to medium grained. Moderate to well rounded. Has small clay lined fracture @ 47.5'
		49-50			1		50	SS	

Geologist _____

Job No. _____

Client National Silica

Project Bell Property Prospecting

Location of Boring
Water Level
Time
Date

Boring No. B-55 Date 2-28-14 Sheet 3 of 5

Type of Boring Wireline Core Rig CME-55

Casing used _____ Size NQ Drilling mud used _____

Boring begun _____ Boring completed _____

Ground Elevation _____ referred to _____ Datum

Field Party CSI/Andrill

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		50-54			4		50	SS	Sandstone. White w/ minor orange staining. Medium to medium hard. Fine to medium grained. Moderate to well rounded.
									" "
		54-59			4		55	SS	
		59-64			1		60	U	Orange clay
								SS	Sandstone. Very hard. White.
								U	Orange clay.
		64-69			5		65	SS	Sandstone. White. Very hard. Fine grained well rounded.
		69-74			5		70	SS	Sandstone. White. Medium hard to hard. Fine to medium grained. Moderate to well rounded.
									" "
		74-75			1		75	SS	

Geologist _____

Job No. _____

Client National Silica

Project Bell Property Prospecting

Location of Boring	
Water Level	
Time	
Date	

Boring No. B-55 Date 3-28-14 Sheet 4 of 5

Type of Boring Wireline Core Rig CME-55

Casing used _____ Size NQ Drilling mud used _____

Boring begun _____ Boring completed _____

Ground Elevation _____ referred to _____ Datum

Field Party CES/Amdrill

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		75-79			2.6		75	SS	Sandstone. White w/ moderate orange staining. Medium hard. Fine to medium grained. Moderate to well rounded.
								CH	Green clay. Plastic.
		79-84			4		80	SS	Sandstone. Pale green. Medium hard. Fine to medium grained. Moderate to well rounded.
								CL	Clay.
		84-89			5		85	SS	Sandstone. Pale orange. Medium hard. Fine grained. Moderate to well rounded.
		89-94			5		90	SS	" "
		94-99			0		95	?	No recovery. Drilled soft
		99-100			1		100	CH	Plastic, orange clay

Geologist _____

Job No. _____

Client National Silica

Project Bell Property Prospecting

Location of Boring
Water Level
Time
Date

Boring No. B-55 Date 3-28-14 Sheet 5 of 5

Type of Boring Wireline Core Rig CME-55

Casing used _____ Size NQ Drilling mud used _____

Boring begun _____ Boring completed _____

Ground Elevation _____ referred to _____ Datum

Field Party CSS / Andrill

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		100-104			4		100	CH	Plastic orange clay. Stiff.
		104-109			5		105	CH	Plastic clay. Stiff. Orange.
									Transition to blue @ 107'.
							110		EOB @ 109'

Geologist _____

Job No.

Client National Silica

Project Bell Property Prospecting

Location of Boring	N 35° 57' 20.2"
Water Level	
Time	W 091° 37' 25.0"
Date	

Boring No. B-5L Date 4-1-14 Sheet 1 of 1

Type of Boring Wireline core Rig CME-55

Casing used ____ Size NQ Drilling mud used ____

Boring begun 09:30 Boring completed 09:40

Ground Elevation ____ referred to ____ Datum

Field Party CES/Ambrill

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		0-4			0.1		0	CL	Red clay.
		4-9			1.1		5	SS SP DJ	Dolomite. EOB @ 5.5'
		9-14					10		
		14-19					15		
		19-24					20		
							25		

Geologist J. Rima

Job No. _____

Client National S.T.A.

Project Bell Property Prospecting

Location of Boring	N 35° 57' 19.2"
Water Level	W 091° 37' 24.6"
Time	
Date	

Boring No. B-57 Date 4-1-14 Sheet 1 of 1

Type of Boring Wireline, Mud Rig CME-55

Casing used _____ Size NQ Drilling mud used _____

Boring begun _____ Boring completed _____

Ground Elevation _____ referred to _____ Datum

Field Party CES/Arnold

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		0-4			3		0	CL	clay.
								SS	Sandstone.
								Di	Dolomite.
									EOB @ 4'
							5		
							10		
							15		
							20		
							25		

Geologist _____

Job No. _____

Client National Silica

Project Bell Property Prospecting

Location of Boring
Water Level
Time
Date

Boring No. B-58 Date 4-1-14 Sheet 1 of 1

Type of Boring Wireline Rig CME-55

Casing used _____ Size NQ Drilling mud used _____

Boring begun 1040 Boring completed 1125

Ground Elevation _____ referred to _____ Datum

Field Party CSJ/Arndt

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		0-5			1		0		
								CH	Green clay w/ orange mottling. Plastic
		5-10			2.5		5		
								SS	Sandstone. Green. Hard to very hard. Fine grained. Moderate to well rounded.
		10-15			1		10	CH	Plastic clay. Green-orange
		15-20			2		15	CH	" "
		20-25					20		TOB @ 20
							25		

Geologist _____

Job No. _____

Client National Silica

Project Bell Property Prospecting

Location of Boring	N 35° 57' 20.2"
Water Level	W 011° 37' 18.1"
Time	
Date	

Boring No. B-51 Date 4-1-14 Sheet 1 of 2

Type of Boring Wireline Core Rig CME-55

Casing used ____ Size NQ Drilling mud used ____

Boring begun 12:15 Boring completed 13:00

Ground Elevation ____ referred to ____ Datum

Field Party CCS/Amadri II

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		0-4			1		0		
								SS	Sandstone. Soft. White w/ orange staining. Fine to medium grained. Moderate to well rounded. Friable.
		4-9			2		5		
								CL	Orange. Clay.
								SS	Same as above.
		9-14			3		10	CL	Orange clay
								SS	Sandstone. White. Soft. Fine to medium grained. Moderate to well rounded. Friable
		14-19			1		15	CL	Orange clay
								SS	Sandstone. Pale green.
		19-24			1		20	CL	Clay. Soft. No recovery.
							25		

Geologist _____

Job No. _____

Client National Silica

Project Bell Property Prospecting

Location of Boring
Water Level
Time
Date

Boring No B-59 Date 4-1-14 Sheet 2 of 2

Type of Boring Wireline Rig Core-55

Casing used _____ Size HQ Drilling mud used _____

Boring begun _____ Boring completed _____

Ground Elevation _____ referred to _____ Datum

Field Party CES/Hendrix

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		25-29			0		25	?	No recovery. Possibly clays
		29-34			2		30	CH	Green clay. Plastic.
								SS	White. Sandstone. Med. hard.
								CH	Plastic clay. (green, orange. contains weathered sandstone fragments
									EOB @ 34
							35		
							40		
							45		
							50		

Geologist _____

Job No. National Silica

Client

Project Bell Property Prospecting

Location of Boring	N 35° 57' 35.3"
Water Level	W 091° 37' 08.7"
Time	
Date	

Boring No. B-60 Date 4-1-14 Sheet 1 of 3

Type of Boring Wireline Core Rig CME-55

Casing used ____ Size HQ Drilling mud used ____

Boring begun 1345 Boring completed 1540

Ground Elevation ____ referred to ____ Datum

Field Party CSI/Ardvill

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		0-4			2		0		
								SS	Sandstone. White w/ orange staining. Medium hardness. Fine grained. Moderate to well rounded.
		4-9			5		5	SS	Sandstone. White w/ orange staining. Soft to medium hardness. Fine to medium grained. Moderate to well rounded.
		9-14			5		10	SS	" "
		14-19			5		15	SS	" "
		19-24			5		20	SS	" "
		24-25			1		25	SS	

Geologist

Job No. _____

Client National Silica

Project Bell Property Prospecting

Location of Boring	
Water Level	
Time	
Date	

Boring No. B-60 Date 4-1-14 Sheet 2 of 3

Type of Boring Wireline Coring Rig CME-55

Casing used _____ Size NQ Drilling mud used _____

Boring begun _____ Boring completed _____

Ground Elevation _____ referred to _____ Datum

Field Party Cos / Brad / Ill

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		25-29			4		25	SS	Sandstone. Medium Soft to medium. White. w/ orange staining. Fine to medium grained- Moderate to well rounded- Friable.
		29-34			5		30	SS	" "
		34-39			5		35	SS	Sandstone. White. Medium to medium hard. Fine to medium grained. Moderate to well rounded-
		39-44			5		40	SS	" "
		4449			5		45	SS	Sandstone. White. Hard. Fine grained. Moderate to well rounded.
							50		

Geologist _____

Job No. _____

Client National Silica

Project Bell Property Prospecting

Location of Boring
Water Level
Time
Date

Boring No B-60 Date 4-1-14 Sheet 3 of 3

Type of Boring Wireline Core Rig Cme-55

Casing used _____ Size NQ Drilling mud used _____

Boring begun _____ Boring completed _____

Ground Elevation _____ referred to _____ Datum

Field Party CES/Arndt II

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		50-54			2		50	SS	Sandstone. White. Hard to very hard. Fine grained. Moderate to well rounded.
									EOB @ 52'
		54-59					55		
		59-64					60		
		64-64					65		
		69-74					70		
							75		

Geologist D. R. Smith

Job No. _____

Client National Silica

Project Bell Property Prospecting

Location of Boring	N 35° 57' 32.5"
Water Level	
Time	W 091° 36' 58.6"
Date	

Boring No. B-61 Date 4-2-14 Sheet 1 of 3

Type of Boring Wireline Core Rig CME-55

Casing used ____ Size NA Drilling mud used ____

Boring begun 07:20 Boring completed 08:50

Ground Elevation ____ referred to ____ Datum

Field Party CGS/Amdrill

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		0-4			0.5		0	U	
		4-9			5		5	SS	Sandstone. White, w/ orange staining. Medium soft to soft. Fine to medium grained. Moderate to well rounded. Friable.
		9-14			5		10	SS	" "
		14-19			5		15	SS	" "
		19-24			5		20	SS	Sandstone. White. Medium hard to hard. Fine grained. Moderate to well rounded. Contains minor amounts of clay.
		24-25			1		25	SS	" "

Geologist _____

Job No. _____

Client National Silica

Project Bell Property Prospecting

Location of Boring
Water Level
Time
Date

Boring No B-61 Date 4-2-14 Sheet 2 of 3

Type of Boring Wireline Core Rig CME-55

Casing used _____ Size NQ Drilling mud used _____

Boring begun _____ Boring completed _____

Ground Elevation _____ referred to _____ Datum

Field Party CES / Ambrish

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		25-29			4		25	SS	Sandstone. White w/ minor orange staining. Hard. Fine grained. Moderate to well rounded.
		29-34			5		30	SS	Sandstone. White - pale green. Medium hard. Fine to medium grained. Moderate to well rounded. Friable.
		34-39			4.2		35	SS	Sandstone. White w/ orange staining. Soft to medium hardness. Fine to medium grained. Moderate to well Rounded.
		39-44			3		40	SS	Sandstone. Medium Soft. Green-orange. Fine to medium grained. Moderate to well rounded. Friable.
		44-49			1		45	SS SS	Sandstone & poorly graded sand. Orange. Fine to medium grained. Moderate to well Rounded. Very soft. Friable.
		49-50			0		50		

Geologist _____

Job No. _____

Client National Silica

Project Bell Property Prospecting

Location of Boring
Water Level
Time
Date

Boring No. B-61 Date 4-2-14 Sheet 3 of 3

Type of Boring Wireline Core Rig CME-55

Casing used _____ Size NQ Drilling mud used _____

Boring begun _____ Boring completed _____

Ground Elevation _____ referred to _____ Datum

Field Party CGS / Amdrill

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		50-54			0		50		Very soft. No recovery. Drill mud but sand. No clay.
		54-59					55	Qd	Dolomite
									COB @ 56'
							60		

Geologist _____

Job No. _____

Client National Silica

Project Bell Property Prospecting.

Location of Boring	N 35° 57' 25.3"
Water Level	W 091° 37' 02.5"
Time	
Date	

Boring No. B-12 Date 4-2-14 Sheet 1 of 3

Type of Boring Wireline Rig CME-55

Casing used _____ Size NQ Drilling mud used _____

Boring begun 0920 Boring completed 1030

Ground Elevation _____ referred to _____ Datum

Field Party CCS / Arnold

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		0-4			6		0		
		4-9			4		5	SS	Sandstone. Orange-Soft to medium soft. fine to medium grained - Moderate to well rounded- Friable.
		9-14			3.7		10	SS	" "
		14-19			2		15	SS	" "
									Very soft. No recovery.
		19-24			2		20		
		24-25			0		25	SS	Sandstone. Medium soft to medium. White w/ brown & orange staining. Fine to medium grained. Moderately rounded.

Geologist _____

Job No. _____

Client National Silica

Project Bell Property Prospecting

Location of Boring	
Water Level	
Time	
Date	

Boring No. B-62 Date 4-2-14 Sheet 2 of 3

Type of Boring Wireline Core Rig CME-55

Casing used _____ Size NQ Drilling mud used _____

Boring begun _____ Boring completed _____

Ground Elevation _____ referred to _____ Datum

Field Party CES / Andrill

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		25-29			4		25	SS	Sandstone. Brown & gray banded. Medium hardness. Fine to medium grained. Moderate to well rounded. Friable.
		29-34			3		30	SS	" "
		34-39			4		35	SS	Sandstone. Transitions from orange to white back to orange. Medium hardness. Friable. Fine to medium grained. Moderate to well rounded
		39-44			5		40	SS	Sandstone. White w/ orange staining & black alteration spots. Medium hardness. Friable. Fine to medium grained. Moderate to well rounded.
		44-49			3		45	SS	" " Becomes dark orange. Fractures have clay lining.
		49-50			0		50		Drilled very soft. No recovery

Geologist [signature]

Job No. _____

Client National Silica

Project Bell Property Prospecting

Location of Boring	
Water Level	
Time	
Date	

Boring No. B-62 Date 4-2-14 Sheet 3 of 3

Type of Boring Wireline Core Rig CME-55

Casing used _____ Size NQ Drilling mud used _____

Boring begun _____ Boring completed _____

Ground Elevation _____ referred to _____ Datum

Field Party CSS/Arnold

Depth of Casing, ft.	Sample No.	Sample depth from-to (in feet)	Blows/foot on Sampler	ID of Sampler (inches)	Tot. length of recov. sample	Length of Lab. sample	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths wash water lost, observed fluctuation in water level, notes on drilling ease, etc.
		50-54			0.1		50		Very soft. No recovery
		54-59			0.5		55	SS	Silicified Sandstone. Very hard. Quartz.
							60		EOB @ 59'
							65		
							70		
							75		

Geologist [signature]