## **APPENDIX B**

## Exploration and Well Construction Logs by AESI

APPENDIX B
<b>Exploration and Well Construction Logs by AESI</b>

			Depth I	Below Ground	Surface	Тор	o of Unit Elevat	ion
	Ground	<b>T</b>	Till	Pre-Vashon	Bedrock	Till	Pre-Vashon	Bedrock
Location	Surface Elevation	Total Depth	(Qvt)	(Qpv)	(Тр)	(Qvt)	(Qpv)	(Тр)
EB-1W	830.02	175	NE	147	>175	NE	683	<655
EB-2W	825.05	75	NE	NE	68	NE	NE	757
EB-3W	780.52	105	64	NE	92	717	NE	689
EB-4W	790.80	157	NE	125	153	NE	666	638
EB-5W	771.00	85	72.5	NE	76	699	NE	695
EB-6W	825.95	130	83	NE	124	743	NE	702
EB-7W	844.90	245	151	154	>245	694	691	<600
EB-8W	845.61	150	100	110	142	746	736	704
EB-9W	807.77	197	138	142	191	670	666	617
EB-10W	850.22	60	NE	NE	51	NE	NE	799
EB-11W	849.92	40	NE	NE	NE	NE	NE	NE
EB-12W	842.83	95	83	85	92	760	758	751
EB-13	844.8	90	NE	NE	74	NE	NE	771
B-1	867	60	NE	NE	>60	NE	NE	<807
B-2	848.62	70	NE	NE	50.5	NE	NE	798
B-3	843.68	105	78.5	81	93.5	765	763	750
B-4	790.24	75	NE	NE	>75	NE	NE	<715
B-5	806.87	45	NE	NE	33.5	NE	NE	773
B-6	901	120	NE	NE	114	NE	NE	787
B-7	801	70	NE	NE	64.5	NE	NE	737

## TABLE B-1: GEOLOGIC CONTACTS

All units reported in feet. N/A = not applicable, no well completed. NE = not encountered.

Ground surface elevations presented as surveyed data to the nearest tenth or hundredth. Non-surveyed ground surface elevations reported to the nearest foot as reported on the log.

ction	(2)		30	GW	Well-graded gravel		erms Desc			
Era	ies <sup>(</sup>	00		311	and gravel with sand, little to no fines		ensity an		-	
20% <sup>(1)</sup> or More of Coarse Fraction Gravels - More than 50% <sup>(1)</sup> of Coarse Fraction Passes No. 4 Sieve Retained on No. 4 Sieve	-		×000000	GP	Poorly-graded gravel and gravel with sand, little to no fines	Coarse- Grained Soils	Density /ery Loose .oose Medium Dense Dense	30 to 50		<b>Test Symbols</b> G = Grain Size M = Moisture Content
- More than 50 Retained on	é Fines <sup>(2)</sup>			GM	Silty gravel and silty gravel with sand	Fine-	/ery Dense I <b>nsistency</b> /ery Soft Soft	>50 <u>SPT<sup>(3)</sup>blow</u> 0 to 2 2 to 4	s/foot	A = Atterberg Limits C = Chemical DD = Dry Density K = Permeability
Gravels - M	≥12%			GC	Clayey gravel and clayey gravel with sand	S	Medium Stiff Stiff /ery Stiff Hard	4 to 8 8 to 15 15 to 30 >30		
ion	)		000		Well-graded sand		Compone	nt Defini	tions	
e Fract	Fines <sup>(2</sup>		00000	SW	and sand with gravel, little to no fines	Descriptive Boulders	Term	Larger tha		ve Number
re of Coars o. 4 Sieve	≦5%			SP	Poorly-graded sand and sand with gravel, little to no fines	Cobbles Gravel Coarse Gr Fine Grave		3" to 12" 3" to No. 4 3" to 3/4" 3/4" to No.	(4.75 mm) 4 (4.75 mr	
- 50% <sup>(1)</sup> or More of Coarse Fraction Passes No. 4 Sieve	Fines <sup>(2)</sup>			SM	Silty sand and silty sand with gravel	Sand Coarse Sa Medium S Fine Sand	and	No. 4 (4.75 No. 10 (2.0	5 mm) to No 00 mm) to N	o. 200 (0.075 mm) o. 10 (2.00 mm) No. 40 (0.425 mm) No. 200 (0.075 mm)
ds - 5	SC 2%		sc	Clayey sand and	Silt and Clay	1		,	(0.075 mm)	
Sands . ≥12°					clayey sand with gravel	<sup>(4)</sup> Estimate				ure Content
s S	an 50			ML	Silt, sandy silt, gravelly silt, silt with sand or gravel	Component F Trace Some	Percentage b <5 5 to <		dus Slightly N	sence of moisture, ty, dry to the touch Aoist - Perceptible moisture Pamp but no visible
Silts and Clays	-iquid Limit Less than 50			CL	Clay of low to medium plasticity; silty, sandy, or gravelly clay, lean clay	Modifier (silty, sandy, grav Very <i>modifier</i>	12 to < velly) 30 to <		w Very Moi	and bat no visible vater st - Water visible but not free draining ible free water, usually
Ω.	pinbi			~	Organic clay or silt	(silty, sandy, grav				m below water table
-				OL	of low plasticity		Sym	bols		Cement grout
			T		Elastic silt, clayey silt, silt with micaceous	Sampler Type and D	<b>i</b>	Groundwa <u>depth</u>	ater 🖉 义	surface seal
s,	More			мн	or diatomaceous fine sand or silt	☐ 15/25 Blows/6" or po Split-Spoon Sa		AT At tim	D <b>⊻</b>	Bentonite seal Filter pack with
Silts and Clays	Limit 50 or			СН	Clay of high plasticity, sandy or gravelly clay, fat clay with sand or gravel	California Samp Ring Sampler Continuous Sar		of drillin Static wate level (date	er ⊻ ∃	blank casing section Screened casing or Hydrotip with
	Liquic	                   		он	Organic clay or silt of medium to high plasticity	Grab Sample Portion not reco		ased on visual	field and/or	filter pack End cap
Highly Organic Soils				РТ	Peat, muck and other highly organic soils	which include density/co and should not be const Visual-manual and/or lal used as an identification	nsistency, moist rued to imply fiel poratory classific	ture condition, g d or laboratory ation methods	grain size, ar testing unle of ASTM D-	nd plasticity estimates ss presented herein. 2487 and D-2488 were

(3) (SPT) Standard Penetration Test (ASTM D-1586)
 (4) In General Accordance with Standard Practice for Description and Identification of Soils (ASTM D-2488)



A1

Blocks\ dwg \ log\_key 2022.dwg LAYOUT: Layout 5 - 2022 Logdraft

	1	2	> a s	sociatec		Geo	logi	c & N	lonit	oring Well Con	structio	on Log	
	$\swarrow$	1		rth sciences		oject Nun 2003671	nber			Well Number EB-1W		Sheet 1 of 8	
Pro	oject	Nan		Cumberland Pro		2003071	1001			Location	King Cou		
Ele	vatio	n (T	op of W	ell Casing) ~832.	1					Surface Elevation (ft)	<u>~829.6 (L</u>	<u>idar, NAVD8</u>	8)
			l Elevatio ipment		de Drilling	/ TQi 1/	5000	Sonic		Date Start/Finish Hole Diameter (in)	<u>11/23/20</u> ,	,11/25/20 / 4" core bar	
			eight/Dr			/ 15/ 13	50000	SUNIC		Well Tag #	BLZ 356	/4 Core ban	
		Water Level		/ELL CONSTRU	CTION	S T	Blows/ 6"	Graphic Symbol			RIPTION		
		_		Stick up -2.5 to 0 fe	et					For	est Duff		
-				Cement 0 to 3 feet		-			Moist, abunda (SM).	dark yellowish brown (10YR ant roots and rootlets; scatte			SAND; ding
-				Cement 0 to 3 reet		- -			Moist t gravell (SM).	Weathered Vashon o very moist, yellowish brow y, fine to coarse SAND; occa	n to strong br asional to sca	own (7.5YR), silt ttered rootlets; m	y, assive
-						-			occasi	Vashon Rece grayish brown, sandy, fine to onal cobbles; sand is predon lenses <1/2 foot thick) (GP	o coarse GRA ninantly mediu	VEL. trace to sor	ne silt; atified
- !	5			Bentonite chips 3 to	o 120 feet	_			Cobble	stuck in drill bit.			
-						-			Becom	es sandy to very sandy.			
- - - 1(	D			2-inch I.D. Sch 40 F 0 to 123 feet	PVC casing				Becom	es very sandy.			
- - - 1!	5								Moist ( trace to (GP).	slightly baked), fine to coars	e GRAVEL, s ht normal grad	some sand to san ding with upper c	dy, ontact
-									Many p	oulverized cobbles.			
NWWELL-B 200367H001.GPJ BORING.GPT 5/15/23	D								scatter (GP-G No rec runs ca Adjace sandy,	o very moist, gray, sandy, fir ed cobbles; abundance of vo M). overy 20 to 25 feet. Recover asing after previous drive. nt boring: recovery from 20 fine to coarse GRAVEL, so overy 22 to 25 feet.	olcanic rock, b ry all slough, c to 22 feet is n	proken gravels (re cobble stuck in bit noist to very mois	ed/gray) t, driller t,
00367	Sar	- ·	er Type (	, ,	_								
-B 2(			2" OD S	Split Spoon Sampler (S	SPT)	No Rec	overy			Moisture		Logged by:	MJP
/ELL-	Π		3" OD S	Split Spoon Sampler ([	D & M)	Ring Sa	ample		∑ _	Water Level (2/11/22)		Approved by:	JHS
MWN	Ċ	3	Grab Sa	ample	·····	Shelby	Tube S	ample	Ţ	Water Level at time of drilli	ng (ATD)		

	1	$\gtrsim$		sociatec		Geo	logi	gic & Monitoring Well Construction Log					
	$\triangleleft$	I	10000	th sciences orporatec		oject Nun 003671				Well Number EB-1W	Sheet 2 of 8		
	oject			Cumberland Pro ell Casing) ~832.2	perty					Location Surface Elevation (ft)	King County, WA ~829.6 (Lidar, NAVD88)	_	
			I Elevatio	on ~713						Date Start/Finish	11/23/20 11/25/20	_	
			ipment eight/Dro		de Drilling /	/ TSi 15	50CC	Sonic		Hole Diameter (in) Well Tag #	6" casing / 4" core barrel BLZ 356	_	
											<u>DLZ 330</u>		
epth	(£	Water Level					Blows/ 6"	Graphic Symbol					
ď	5	/ater	M.	ELL CONSTRU	CTION	s	Blo 6	Syr		DESCE	RIPTION		
		5	••			T				DECO			
								° • • •	No rec	overy 25 to 30 feet. Cobble s on next run.	stuck in bit, driller redrills and recovers	;	
-						-		៰៓៰៓៓៓	Adjace	nt boring: recovery from 25	to 27 feet is as above (GP-GM). No		
Ļ						-		ಁೣಁಁ	recove	ry 27 to 30 feet.			
Ē						-							
-						-							
- 30	0												
									Moist t	o verv moist, gravish brown	Contact Deposits (2.5Y), silty, sandy, fine GRAVEL;		
F						-		[   T   ]	unsort	ed, diamict (GM).	matrix; appears matrix supported;		
F						5002			SAND	, some gravel and sandy, SIL	and gray (2.5Y), silty, fine to medium LT, trace to some clay; interbedded;		
										ve; plastic; distorted bedding	) (SM/MH).		
									No rec	overy 33 to 35 feet.			
F						-							
- 3	5			Bentonite chips 3 to	120 foot	_			Vorum	point gravish brown to light y	ellowish brown, silty, sandy, fine to		
				Bentonite chips 5 to	120 1001				coarse	GRAVEL, trace clay; cohes	sive plastic matrix; clast supported;		
Ē						1		5.5.	poony	sorted to massive (GM).			
F													
								5.5.					
										s to very pale brown, volcani ering rinds.	c gravels occasionally have >3mm		
F						<b>E</b> b		Ŏ					
- 40	0			2-inch I.D. Sch 40 F	VC casing				Verv n	noist grav silty sandy fine t	to coarse GRAVEL, some clay;		
				0 to 123 feet						ed cobbles; cohesive plastic			
-						-			Contai	ns pulverized cobbles.			
F						-			Moiet	(baked) gravish brown (2.5)	() with lesser pale brown and light and		
								• • • • •	dark re		o very gravelly, fine to coarse SAND;		
Γ						S		<b></b>	unson				
- 4	5								Very m	noist, grayish brown (10YR)	with brownish yellow, silty, sandy, fine	;	
5/23						-			to coai matrix		attered charcoal; cohesive plastic		
T 5/1								Ĩ.					
G.GD						1							
ORIN						-							
B Ldg													
1001.6													
NWWELL-B 200367H001.GPJ BORING.GDT 5/15/23	Sa	mple	er Type (	ST):				<u>-</u> .					
B 20		n '		plit Spoon Sampler (S	SPT)	No Rec	overy			- Moisture	Logged by: MJP		
VELL-			3" OD S	plit Spoon Sampler (E	0 & M)	Ring Sa	ample		∑ ■	Water Level (2/11/22)	Approved by: JHS		
MN	۲	3	Grab Sa	ample	""""	Shelby	Tube Sa	ample	Ţ	Water Level at time of drilli	ing (ATD)		

Project Number     Project Number     Well Number     Street       1     20200367H001     EB-HW     Street     3 of 3       Project Number     Cumberland Projectry     Street Street     Street Street     Street Street       Well Leed Environ     2713     Street Street     Street Street     Street Street       Hammor WeightDoo     MA     Street Street     Street Street     Street Street       Image: Street Street     Street Street     Street Street     Street Street       Image: Street Street Street     Street Street     Street Street Street     Street Street Street       Image: Street S		1	$\sim$	as	sociat	e c		Geo	logi	c & M	Monitoring Well Construction Log					
Project Xime     Cumberland Property       Ervation (Too of Viel Casing)     -532.1.       Wate Luee Bevolon (Too of Viel Casing)     -532.1.       DiffingExupment     Cascade Drilling / TSI 150CC Sonic     Date Starting in 11/25/20.       Hermer Weightorp     N/A       Mark     Use Starting in 11/25/20.       Bevolution (Too of Viel Casing / 4" core barrel       Mark     DiffingExupment       Mark     Mark       Mark     Starting in 11/25/20.       Bevolution (Too of Viel Casing / 4" core barrel       Bevolution (Too of Viel Casing / 4" core barrel       Bevolution (Too of Viel Casing / 4" core barrel       Bevolution (Too of Viel Casing / 4" core barrel       Bevolution (Too of Viel Casing / 4" core barrel       Bevolution (Too of Viel Casing / 4" core barrel       Bevolution (Too of Viel Casing / 4" core barrel       Bevolution (Too of Viel Casing / 4" core barrel       Bevolution (Too of Viel Casing / 4" core barrel       Bevolution (Too of Viel Casing / 4" core barrel       Bevolution (Too of Viel Casing / 4" core barrel       Bevolution (Too of Viel Casing / 4" core barrel       Bevolution (Too of Viel Casing / 4" core barrel       Bevolution (Too of Viel Casing / 4" core barrel       Bevolution (Too of Viel Casing / 4" core barrel       Bevolution (Too of Viel Casing / 4" core barrel       Bevolution (Too of Viel Casing / 4" core barrel </td <td></td> <td></td> <td>1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Well Number</td> <td></td> <td></td> <td>Sheet 2</td> <td></td>			1									Well Number			Sheet 2	
Elevation (Top of Well carrier)		Project	Nan	1997 - N. M.	6 3 and 16 along			2003071	1001					King Col		
Disting/Equipment Hammer (in) Bit 2 356       Cascade Drilling / TSI 150CC Sonic Ma       Hele Diameter (in) Bit 2 356       Cascade Drilling / 4" core barrel BLZ 356         Image: State of the transmission of the transmission of the transmission of transmissis (transmission of transmission of transmission of tr		Elevati	on (T	op of W	/ell Casing)	~832.1	perty						n (ft)	~829.6 (1	Lidar, NAVD8	38)
Hammer Weight/Drop     NA     Well Tag #     BLZ 356					ion		do Drilling		000	Sonio				11/23/20	, <u>11/25/20</u>	rrol
Biggs       Biggs <th< td=""><td></td><td></td><td></td><td></td><td>гор</td><td></td><td></td><td>1/15/15</td><td>0000</td><td>Sonic</td><td></td><td>```</td><td>n)</td><td></td><td></td><td></td></th<>					гор			1/15/15	0000	Sonic		```	n)			
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		ft)	Lev						" "	nbol						
		ă	ater	10				s	Blo 6	Syr						
			$\geq$	v		SIRU	JION	Т					ESCR	IPTION		
-55         -55         -60         -60         -61         Bentonite chips 3 to 120 feet         -70         2-inch LD, Sch 40 PVC casing         -70         2-inch LD, Sch 40 PVC casing         -70											Very m	noist, grayish brown (*	10YR),	silty, fine to	coarse SAND, so	ome clay;
-55       Grades to very gravelly (SM).         -55       Moist to very moist, grayish brown (10YR), gravelly, fine to medium SAND, some silt to silty, scattered charcoal (SP-SM).         -60       Moist to very moist, grayish brown and black (10YR), very sandy, silty, fine to coarse GRAVEL; abundant charcoat; no apparent bedding; a grayish trown expansion (10YR), very gravelly, fine to coarse GRAVEL (coal Puget Group provenance and volcanics (GM).         -60       Moist to very moist (baked), grayish brown (10YR), very gravelly, fine to coarse SAND, some silt to silty scattered cobbles and charcoat; abundant Puget Group sandstone gravels (SP-SM).         -61       Moist to very moist to wet, grayish brown (10YR), fine to coarse SAND, some gravel to gravelly, trace to some silt; faintly stratified; local provenance (coal clasts) (SP).         -70       2-inch I.D. Sch 40 PVC casing       Very moist to wet, light brownish gray (10YR), very sandy, fine GRAVEL, some silt; barddel (GP-GM).         -70       2-inch I.D. Sch 40 PVC casing       Very moist to wet, light brownish gray (10YR), very sandy, fine GRAVEL, some silt; barddel (GP-GM).         -70       2-inch I.D. Sch 40 PVC casing       Very moist to wet, light brown (2-5Y) weathering to brown (7.5YR), silty, some silt; barddel (GP-GM).		_									scatter	ed charcoal; cohesive	e plastic	binder; fain	tly stratified (SM)	).
-55       Grades to very gravelly (SM).         -55       Moist to very moist, grayish brown (10YR), gravelly, fine to medium SAND, some silt to silty, scattered charcoal (SP-SM).         -60       Moist to very moist, grayish brown and black (10YR), very sandy, silty, fine to coarse GRAVEL; abundant charcoat; no apparent bedding; a grayish trown expansion (10YR), very gravelly, fine to coarse GRAVEL (coal Puget Group provenance and volcanics (GM).         -60       Moist to very moist (baked), grayish brown (10YR), very gravelly, fine to coarse SAND, some silt to silty scattered cobbles and charcoat; abundant Puget Group sandstone gravels (SP-SM).         -61       Moist to very moist to wet, grayish brown (10YR), fine to coarse SAND, some gravel to gravelly, trace to some silt; faintly stratified; local provenance (coal clasts) (SP).         -70       2-inch I.D. Sch 40 PVC casing       Very moist to wet, light brownish gray (10YR), very sandy, fine GRAVEL, some silt; barddel (GP-GM).         -70       2-inch I.D. Sch 40 PVC casing       Very moist to wet, light brownish gray (10YR), very sandy, fine GRAVEL, some silt; barddel (GP-GM).         -70       2-inch I.D. Sch 40 PVC casing       Very moist to wet, light brown (2-5Y) weathering to brown (7.5YR), silty, some silt; barddel (GP-GM).																
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60       Moist to very moist, gravish brown (10YR), gravelly, fine to medium SAND, some silt to silty, scattered charcoal (SP-SM).         60       Moist to very moist, gravish brown and black (10YR), very sandy, silty, fine to coarse GRAVEL; abundant charcoal; no apparent bedding; appears lightly cemented; local Puget Group provenance and volcanics (GM).         60       Moist to very moist (baked), gravish brown (10YR), very gravelly, fine to coarse SAND, some silt to silty, scattered cobbles and charcoal; abundant Puget Group sandstone gravels (SP-SM).         65       Bentonite chips 3 to 120 feet       Moist to wet, gravish brown (10YR), fine to coarse SAND, some gravel to gravelly, trace to some silt; faintly stratified, local provenance (coal clasts) (SP).         70       2-inch I.D. Sch 40 PVC casing 0 to 123 feet       Very moist to wet, gravish brown (2-SY) weathering to brown (7.SYR), silty, sinty, Silty Stratified to 2000 for the direct or cocasion advection to 223/20. Hole dry start of 12/24/20.         70       2-inch I.D. Sch 40 PVC casing 0 to 123 feet       Very moist to wet, gravish brown (2-SY) weathering to brown (7.SYR), silty, sinty Stratified to 2000 file filt brown for the direct or cocasion advection to 2000 filt filt brown for cocasion advection fold fold fold fold fold fold fold fold		_						<b>5</b> 12						<i>.</i>		
60       Moist to very moist, gravish brown (10YR), gravelly, fine to medium SAND, some silt to silty, scattered charcoal (SP-SM).         60       Moist to very moist, gravish brown and black (10YR), very sandy, silty, fine to coarse GRAVEL; abundant charcoal; no apparent bedding; appears lightly cemented; local Puget Group provenance and volcanics (GM).         60       Moist to very moist (baked), gravish brown (10YR), very gravelly, fine to coarse SAND, some silt to silty, scattered cobbles and charcoal; abundant Puget Group sandstone gravels (SP-SM).         65       Bentonite chips 3 to 120 feet       Moist to very moist to wet, gravish brown (10YR), very gravelly, fine to coarse SAND, some gravel to gravelly, trace to some silt; faintly stratified, local provenance (coal clasts) (SP).         66       Very moist to wet, gravish brown (10YR), very sandy, fine GRAVEL, some silt; bedded (GP-GM).         70       2-inch I.D. Sch 40 PVC casing       Very moist to wet, ight brownish gray (10YR), very sandy, fine GRAVEL, some silt; bedded (GP-GM).         70       2-inch I.D. Sch 40 PVC casing       Very moist to wet, gravish brown (2-SY) weathering to brown (7.SYR), silty, some GRAVEL, cocasion advector cocasion advecocasion advector cocasion advector cocasion a		- 55														
60       Moist to very moist, gravish brown and black (10YR), very sandy, silly, fine to coarse GRAVEL; abundant charcoal; no apparent bedding; appears lightly cemented; local Puget Group provenance and volcanics (GM).         60       Moist to very moist (baked), gravish brown (10YR), very gravelly, fine to coarse SAND, some silt to silly; scattered cobbles and charcoal; abundant Puget Group sandstone gravels (SP-SM).         65       Bentonite chips 3 to 120 feet       Very moist to wet, gravish brown (10YR), fine to coarse SAND, some gravel to gravelly, trace to some silt; faintly stratified; local provenance (coal clasts) (SP).         66       Very moist to wet, gravish brown (10YR), very sandy, fine GRAVEL, some silt; bedded (CP-GM).         70       2-inch I.D. Sch 40 PVC casing 0 + 123 feet											Moist t	o very moist, grayish some silt to silty: sca	brown attered	(10YR), grav charcoal (SP	velly, fine to medi P-SM)	um
60       60         60       60         60       60         61       60         62       60         65       Bentonite chips 3 to 120 feet         65       Bentonite chips 3 to 120 feet         66       65         67       Bentonite chips 3 to 120 feet         66       65         66       65         66       65         66       65         67       66         68       65         69       65         60       65         66       65         67       0         68       0         69       0         60       0         61       0         62       0         63       0         64       0         65       0         66       0         67       0         68       0         69       0         60       0         61       0         62       0         63       0         64       0		-									0, 110				om).	
60       60         60       60         60       60         61       60         62       60         65       Bentonite chips 3 to 120 feet         65       Bentonite chips 3 to 120 feet         66       65         67       Bentonite chips 3 to 120 feet         66       65         66       65         66       65         66       65         67       66         68       65         69       65         60       65         66       65         67       0         68       0         69       0         60       0         61       0         62       0         63       0         64       0         65       0         66       0         67       0         68       0         69       0         60       0         61       0         62       0         63       0         64       0		_														
60       60         60       60         60       60         61       60         62       60         65       Bentonite chips 3 to 120 feet         65       Bentonite chips 3 to 120 feet         66       65         67       Bentonite chips 3 to 120 feet         66       65         66       65         66       65         66       65         67       66         68       65         69       65         60       65         66       65         67       0         68       0         69       0         60       0         61       0         62       0         63       0         64       0         65       0         66       0         67       0         68       0         69       0         60       0         61       0         62       0         63       0         64       0																
60       60         60       60         60       60         61       60         62       60         65       Bentonite chips 3 to 120 feet         65       Bentonite chips 3 to 120 feet         66       65         67       Bentonite chips 3 to 120 feet         66       65         66       65         66       65         66       65         67       66         68       65         69       65         60       65         66       65         67       0         68       0         69       0         60       0         61       0         62       0         63       0         64       0         65       0         66       0         67       0         68       0         69       0         60       0         61       0         62       0         63       0         64       0		-						-			Moist t	o very moist, grayish	brown	and black (10	0YR), very sandy	/, silty,
60       (GM).         61       Moist to very moist (baked), grayish brown (10YR), very gravelly, fine to coarse SAND, some silt to silty, scattered cobbles and charcoal; abundant Puget Group sandstone gravels (SP-SM).         65       Bentonite chips 3 to 120 feet         65       Very moist to wet, grayish brown (10YR), fine to coarse SAND, some gravel to gravely, trace to some silt, faintly stratified, local provenance (coal clasts) (SP).         70       2-inch I.D. Sch 40 PVC casing Ut to 12/23/20.         70       2-inch I.D. Sch 40 PVC casing Ut to 12/23/et         70       2-inch I.D. Sch 40 PVC casing Ut to 12/23/et		_									fine to	coarse GRAVEL; abu	undant (	charcoal; no	apparent beddin	g;
65       Bentonite chips 3 to 120 feet         70       2-inch I.D. Sch 40 PVC casing to 10.1 Sch 40 PVC casing to 10.1 Sch 40 PVC casing								<u> </u>		<b>-</b>						
65       Bentonite chips 3 to 120 feet         9       9		- 60														
65       Bentonite chips 3 to 120 feet         9       9																
65       Bentonite chips 3 to 120 feet         9       9											Moist t	o very moist (baked), SAND_some silt to s	grayish	brown (10Y	R), very gravelly	, fine to
<ul> <li>Bentonite chips 3 to 120 feet</li> <li>Very moist to wet, grayish brown (10YR), tine to coarse SAND, some gravel to gravelly, trace to some silt; faintly stratified; local provenance (coal clasts) (SP).</li> <li>Very moist to wet, light brownish gray (10YR), very sandy, fine GRAVEL, some silt; bedded (GP-GM).</li> <li>End drilling at 70 feet on 12/23/20. Hole dry start of 12/24/20.</li> <li>Very moist, grayish brown (2.5Y) weathering to brown (7.5YR), silty, sandy. GRAVEL, trace to some clay: occasional cobble; faint bedding to</li> </ul>		-						-			abunda	ant Puget Group sand	dstone (	gravels (SP-S	SM).	
<ul> <li>Bentonite chips 3 to 120 feet</li> <li>Very moist to wet, grayish brown (10YR), tine to coarse SAND, some gravel to gravelly, trace to some silt; faintly stratified; local provenance (coal clasts) (SP).</li> <li>Very moist to wet, light brownish gray (10YR), very sandy, fine GRAVEL, some silt; bedded (GP-GM).</li> <li>End drilling at 70 feet on 12/23/20. Hole dry start of 12/24/20.</li> <li>Very moist, grayish brown (2.5Y) weathering to brown (7.5YR), silty, sandy. GRAVEL, trace to some clay: occasional cobble; faint bedding to</li> </ul>																
<ul> <li>Bentonite chips 3 to 120 feet</li> <li>Very moist to wet, grayish brown (10YR), tine to coarse SAND, some gravel to gravelly, trace to some silt; faintly stratified; local provenance (coal clasts) (SP).</li> <li>Very moist to wet, light brownish gray (10YR), very sandy, fine GRAVEL, some silt; bedded (GP-GM).</li> <li>End drilling at 70 feet on 12/23/20. Hole dry start of 12/24/20.</li> <li>Very moist, grayish brown (2.5Y) weathering to brown (7.5YR), silty, sandy. GRAVEL, trace to some clay: occasional cobble; faint bedding to</li> </ul>																
<ul> <li>Bentonite chips 3 to 120 feet</li> <li>Very moist to wet, grayish brown (10YR), tine to coarse SAND, some gravel to gravelly, trace to some silt; faintly stratified; local provenance (coal clasts) (SP).</li> <li>Very moist to wet, light brownish gray (10YR), very sandy, fine GRAVEL, some silt; bedded (GP-GM).</li> <li>End drilling at 70 feet on 12/23/20. Hole dry start of 12/24/20.</li> <li>Very moist, grayish brown (2.5Y) weathering to brown (7.5YR), silty, sandy. GRAVEL, trace to some clay: occasional cobble; faint bedding to</li> </ul>		-						-								
<ul> <li>Bentonite chips 3 to 120 feet</li> <li>Very moist to wet, grayish brown (10YR), tine to coarse SAND, some gravel to gravelly, trace to some silt; faintly stratified; local provenance (coal clasts) (SP).</li> <li>Very moist to wet, light brownish gray (10YR), very sandy, fine GRAVEL, some silt; bedded (GP-GM).</li> <li>End drilling at 70 feet on 12/23/20. Hole dry start of 12/24/20.</li> <li>Very moist, grayish brown (2.5Y) weathering to brown (7.5YR), silty, sandy. GRAVEL, trace to some clay: occasional cobble; faint bedding to</li> </ul>		- 65														
<ul> <li>Coal clasts) (SP).</li> <li>Coal clasts) (SP).</li> <li>Very moist to wet, light brownish gray (10YR), very sandy, fine GRAVEL, some silt; bedded (GP-GM).</li> <li>End drilling at 70 feet on 12/23/20. Hole dry start of 12/24/20.</li> <li>Very moist, grayish brown (2.5Y) weathering to brown (7.5YR), silty, sandy. GRAVEL, trace to some clay: occasional cobble; faint bedding to</li> </ul>		05			Bentonite c	hips 3 to	120 feet	<b>B</b> B			Very m gravel	noist to wet, grayish be	rown (1 ome silt	0YR), fine to	o coarse SAND, s ified: local prove	some nance
<ul> <li>some silt; bedded (GP-GM).</li> <li>a b b c b c b c b c b c b c b c b c b c</li></ul>		-						-			(coal c	lasts) (SP).		,		
<ul> <li>-70</li> <li>2-inch I.D. Sch 40 PVC casing</li> <li>0 to 123 feet</li> <li>-70</li> <li>2-inch I.D. Sch 40 PVC casing</li> <li>-70</li> <li>-70</li> <li>2-inch I.D. Sch 40 PVC casing</li> <li>-70</li> <li>-70<td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></li></ul>																
<ul> <li>-70</li> <li>2-inch I.D. Sch 40 PVC casing</li> <li>0 to 123 feet</li> <li>-70</li> <li>2-inch I.D. Sch 40 PVC casing</li> <li>-70</li> <li>-70</li> <li>2-inch I.D. Sch 40 PVC casing</li> <li>-70</li> <li>-70<td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>]  </td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></li></ul>								]								
<ul> <li>-70</li> <li>2-inch I.D. Sch 40 PVC casing</li> <li>0 to 123 feet</li> <li>-70</li> <li>2-inch I.D. Sch 40 PVC casing</li> <li>-70</li> <li>-70</li> <li>2-inch I.D. Sch 40 PVC casing</li> <li>-70</li> <li>-70<td></td><td>-</td><td></td><td></td><td></td><td></td><td></td><td>-  </td><td></td><td>∘ ∘¶≬</td><td>Verv m</td><td>noist to wet, liaht brow</td><td>vnish ar</td><td>ay (10YR). v</td><td>very sandy. fine C</td><td>GRAVEL.</td></li></ul>		-						-		∘ ∘¶≬	Verv m	noist to wet, liaht brow	vnish ar	ay (10YR). v	very sandy. fine C	GRAVEL.
-70 2-inch I.D. Sch 40 PVC casing 0 to 123 feet		Ļ								$  \circ \circ   \downarrow$	some	silt; bedded (GP-GM).	•			,
2-incn I.D. Scn 40 PVC casing 0 to 123 feet								<b>E</b> S			End dr	illing at 70 feet on 12	/23/20.	Hole dry sta	rt of 12/24/20.	
0 to 123 feet		- 70			2-inch I.D.	Sch 40 F	VC casing				Verv m	noist, gravish brown (2	2.5Y) w	eatherina to	brown (7.5YR).	silty,
Grab Sampler       1       <	23						- 0				sandy,	GRAVEL, trace to so	ome cla	y; occasiona	l cobble; faint be	dding to
Sampler Type (ST):       Image: Sampler (SPT)       Image: No Recovery       M - Moisture       Logged by:       MJP         Image: Signed and the sample       Image: Sampler (D & M)       Image: Ring Sample       Vater Level (2/11/22)       Approved by:       JHS         Image: Signed and Sample       Image: Shelby Tube Sample       Im	5/15/									<b>.</b>	macon					
Sampler Type (ST):       Image: Sampler (ST):         Image: Sampler Type (ST):       Image: Sampler (SPT)         Image: Sample Type (ST):       Image: Sample Type (ST):         Image: Sample Type (ST):       Image: Sample Type (ST)	GDT	-						-								
No       More Provided       More Provided       Logged by:       MJP         Image: Sampler Type (ST):       Image: Sampler Type (ST):       Image: Sampler Type (ST):       Image: Sample Type (ST):	ING.(	_								<b>3</b> ,  <b>3</b> ,						
Sampler Type (ST):       Image: Construction of the system o	BOR							]								
Sampler Type (ST):       Image: Sampler (SPT)       Image: No Recovery       M - Moisture       Logged by:       MJP         Image: Marcel and Sampler (D & M)       Image: Sample and Sample and Sample       Image: Sample and Sample	GPJ	-						RM2		<b>3</b> ,  <b>3</b> ,						
Sampler Type (ST):       Image: Sampler (SPT)       Image: No Recovery       M - Moisture       Logged by:       MJP         Image: Sampler (SPT)       Image: Sampler (SPT)       Image: Sample (SPT)       <	H001.															
No       Recovery       M - Moisture       Logged by:       MJP         1       3" OD Split Spoon Sampler (D & M)       I       Ring Sample       V       Water Level (2/11/22)       Approved by:       JHS         1       Grab Sample       I       Shelby Tube Sample       V       Water Level at time of drilling (ATD)       JHS	0367	Sa			· · /											
Image: Second	B 20			2" OD \$	Split Spoon Sa	ampler (S	iPT)	No Rec	overy			- Moisture			Logged by:	MJP
💈 📴 Grab Sample 📝 Shelby Tube Sample 🐺 Water Level at time of drilling (ATD)	'ELL-		$\mathbb{I}$	3" OD \$	Split Spoon Sa	ampler (D	0 & M)	Ring Sa	ample		$\overline{\Delta}$	Water Level (2/11/2	2)		Approved by:	JHS
	NMN		6	Grab S	ample		·····	Shelby	Tube S	ample	Ţ	Water Level at time	of drilli	ng (ATD)		

ſ	6	3	as	sociatec		Geo	logi	c & M	lonit	oring Well Con	structio	n Log	
	H	1		rth sciences corporatec		oject Nur	mber			Well Number		Sheet	
-	Draigat	Nor	-yr (8,97)		_	00367	HUUT			EB-1W	King Cour	4 of 8	
	Project Elevation			Cumberland Pro (ell Casing) ~832.	1 1					Location Surface Elevation (ft)	King Cour ~829.6 (Li	<u>idar, NAVD</u>	38)
	Water I	Leve	el Elevati	on ~713		/ <b>TO</b> ' 4		o :		Date Start/Finish	11/23/20. <sup>2</sup>	11/25/20	,
			iipment /eight/Dr		de Drilling	/ 15:1	50CC	Sonic		Hole Diameter (in) Well Tag #	6" casing , BLZ 356	/ 4" core ba	rrel
ŀ			olgi ti Di							Well Tag #	<u>DLZ 330</u>		
	, th	Water Level					/s	Graphic Symbol					
	Depth (ft)	ter L					Blows/ 6"	Sym					
		Wa	V	VELL CONSTRU	CTION	S T				DESCF	RIPTION		
-													
									Moist t to coar	o very moist, grayish brown, se SAND; rare cobbles; grav	(2.5Y), silty to /el is fine: dian	o very silty, grav nicton: cohesive	elly, fine e: plastic:
F						-			unsort	ed (SM).		·	
									to coar	o very moist, black and yello se SAND; gravel is fine to co	wish brown (1 barse; sheared	UYR), silty, gra texture (SM).	velly, fine
ŀ						-			Moist t	o very moist, grayish brown	(2.5Y), silty to	very silty, fine	to coarse
									SAND	some gravel to gravelly, traced; diamicton; cohesive; plas	ce clay; gravel	is fine to coars	e;
						<u></u>				ou, alameteri, concerte, plac			
ŀ	- 80					-			Liaht a	live brown (2.5Y) clayey, silt	rip-up clasts?		
									5				
									Grade	s to silty, some gravel.			
+						-			mottle	baked), grayish brown to bro d, silty, gravelly, fine to coars	e SAND; uns	orted; diamicto	wn n (SM).
						1							
-						502			(7 5YF	baked), dark grayish brown t R), gravelly to very gravelly, fi	ne to coarse S	SAND some sil	t to silty <sup>.</sup>
									scatter (SM).	ed cobbles and charcoal; gra	avel lenses ( <u>&lt;</u> 0	0.5 feet thick); I	bedded
f	- 85					-			Driller notes tight drill action.				
-						-							
ŀ						1							
						_							
ŀ						SUN -							
	- 90												
	90								As abo	we; grades to some silt (SW-	-SM),		
						-							
Ī						1							
╞						4							
ŀ						873							
ļ	- 95			Dente di chi chi	100 5	_							
	-			Bentonite chips 3 to	1∠U feet								
(15/2;						-							
DT 5/	.												
IG.GI													
ORIN	.					-		•.•.•   ·  	Moist t	o very moist, dark grayish br	own (10YR), f	ine to coarse S	AND,
PJ B										o some silt, trace gravel; ma			
01.G						<b>1</b>			· · · /·				
367HC	 	mel	er Type (	(ST)·									
NWWELL-B 200367H001.GPJ BORING.GDT 5/15/23	3a [		•••	ری). Split Spoon Sampler (S	ЯРТ) П	No Re	coverv		M	- Moisture	1	Logged by:	MJP
LL-B	ſ			Split Spoon Sampler (E		Ring S			$\overline{\Delta}$	Water Level (2/11/22)		Approved by:	
WWE	-	5 5	Grab Sa		, ∎	-	Tube S	ample	Ţ	Water Level at time of drilli		ee	
ź		<u>-</u>	2.45 00		1	2110107					3,		

	1	2	> a s	sociatec		Geologic & Monitoring Well Construction Log           Project Number         Well Number					struction Log
		1	ear	th sciences		roject Nur 200367	nber			Well Number EB-1W	Sheet
-	Project	Non	1 2 9 3	12 m 1 1 2 2 2 2 3		200367					5 of 8 King County, WA
				Cumberland Pro ell Casing) ~832.	<u>peny</u> 1					Location Surface Elevation (ft)	~829.6 (Lidar, NAVD88)
	Water I	Leve	l Elevatio	on ~713	·					Date Start/Finish	11/23/20.11/25/20
			ipment eight/Dro	op <u>Casca</u> N/A	de Drilling	/ TSi 1	50CC	Sonic		Hole Diameter (in)	<u>6" casing / 4" core barrel</u>
+			eigini/Di	op <u>IN/A</u>						Well Tag #	BLZ 356
	£	Water Level					70	ji ji			
	Depth (ft)	٦Ľ					Blows/ 6"	Graphic Symbol			
		Vate	W	ELL CONSTRU	CTION	S	Β	00		DESCR	RIPTION
		>				'					-
Ī				2-inch I.D. Sch 40 F	PVC casing	S.				ove; becomes very moist; dril	ler vibed out sample; low recovery
-				0 to 123 feet		_			(SP).		
									No rec	overy 101 to 105 feet.	
F						-					
f						-					
ŀ	105					_		9.9.	Recov	erv is redrilled slough lost pre	evious drive, includes pulverized
								니브니브	cobble	s (rock flour) and drilling alte	red sediment (GM?).
F						-		2.2.			
								$\overline{0}$			
-						-					
F						<b>6</b> 3		ě,ě,			
	<del>1</del> 10					_					
	110								Moist (	(baked), brown (10YR) with s	strong brown weathering, very sandy, attered charcoal; occasional cobbles;
+						-			faint b	edding (GW-GM).	allered charcoal, occasional cobbles,
								Ŏ Ő Ő			
F		$\overline{\Delta}$				-		þÔĊ			
		-						8,8,			
ſ									Cobble	e pulverized (rock flour).	
-						- 010		8.8.			
						S.					
F	115					-			Moist t	to very moist, dark gravish br	own, gravelly, fine to coarse SAND,
									some	silt; faintly stratified (SW-SM	).
ſ		¥				1					
-						-			Moist t	to very moist, gray, silty, fine ly; massive (SM).	to coarse SAND, some gravel to
									9.0.10.	<i>y</i> , <i>massive</i> ( <i>em)</i> .	
F						-					
ſ						8			Moist (	(baked), grayish brown, very ccasional cobble; faintly strat	sandy, fine GRAVEL, some silt to
F	120		-			_		p	•	•	, ,
~		ļ							silt (SF		y, fine to coarse SAND, trace to some
15/23		ŀ		#2/12 Monterey san	id 120 to	-			Wet, d	lark grayish brown, fine to co	arse SAND, trace to some silt, trace
T 5/		į		153 feet					gravel;	Northern Provenance(?); m	assive (SP).
09.6D		-				Ş					
RINC		ŀ				-					
BO		ļ	目								
GPJ-						-					
H001						<b>8</b> 3					
NWWELL-B 200367H001.GPJ BORING.GDT 5/15/23	Sa	mple	er Type (	ST):				<u> </u>			
3 20(		_ `		Split Spoon Sampler (S	SPT) 🗍	No Red	covery		М	- Moisture	Logged by: MJP
ILL-E	-	-	3" OD S	Split Spoon Sampler (E	D&M)	Ring S	ample		$\overline{\Delta}$	Water Level (2/11/22)	Approved by: JHS
WE	-	-	Grab Sa		′∎⊔ ∏	-	Tube S	ample	Ţ	Water Level at time of drilli	,
ź	Ľ	<u>Ч</u>	Jian Ja			Oneiby	i ube O	anpie	-		

6	2	as	sociatec		Geologi	<u>c &amp; N</u>	lonito	oring Well Con	<u>structi</u>	on Log	
	1		rth sciences corporated		oject Number 00367H001			Well Number EB-1W		Sheet 6 of 8	
Project	Nar		Cumberland Pro		00307 1001			Location	King Cou		
			/ell Casing) ~832.2					Surface Elevation (ft)	<u>~829.6 (</u>	<u>Lidar, NAVD</u>	88)
		l Elevati			· = 0: 4 = 0 0 0	<u> </u>		Date Start/Finish	11/23/20	11/25/20	
Drilling		ipment /eight/Dr	op <u>Casca</u>	de Drilling	/ TSi 150CC	Sonic		Hole Diameter (in) Well Tag #	6" casing BLZ 356	g / 4" core ba	arrel
T ICHTIT		olgiti Di							<u>DLZ 330</u>		
, th	Water Level				s.	Graphic Symbol					
Depth (ft)	ter L				S Blows/ 6"	Sym					
	Wat	V	VELL CONSTRU	CTION	S m	00		DESCF	RIPTION		
_			1								
-					-						
-					ES .		Grades	to gravelly.			
		目									
-					-	huuni	Wat lic	ht yellowish brown, sandy,	SII T: cored t	through condition	no
					<b>8</b> 3		boulder	biasing fines content and s	ediment colo	or (ML).	
-130					+						
							Wet, gr	ayish brown, gravelly, medi	um to coarse	SAND, trace to	some
		目					silt; bec	lded (SP).			
-					-110						
		目				$[\cdot] [\cdot] [\cdot]$	Wet, gr	ayish brown, silty, sandy, fi ;; thin sand interbeds; stratil	ne to coarse fied (GM)	GRAVEL; abunc	dant
-					-		0000100				
F											
-135					ES-	ĬŎ,Ŏ,					
100							Grades	Grades to light yellowish brown.			
-					-	3:3:					
						년만민	1				
-		目			ES .	2.2.	Sandst	one gravels present.			
		目				- • - •	Wat gravish brown to brown (10VP) very sendy find to coorse				
			2-inch I.D. Sch 40 F screen 0.020-inch s			17070	Wet, grayish brown to brown (10YR), very sandy, fine to coarse GRAVEL, some silt to silty; stratified/bedded (GM).				
-			123 to 153 feet		-						
					<b>8</b> 2	Ĩ,					
-140							Grades	to some silt with scattered	cobbles (GP-	-GM).	
						ို္	Zones of pulverized cobbles.				
					11	°°° <b>₹</b> •					
		目				0 ° ° • •	1				
					۳۶ ۲	° • •	I				
+						ူဂျို					
		目									
F					1	ۆ م					
-145					<b>1</b>	<u>_</u>					
175							Grades	to silty (GM).			
5/23		目					l				
5/1							1				
		目			Ters			Pre-Vash	on Deposits	S	
5NG							Very m	oist, dark yellowish brown to scattered charcoal; distorte	brown (10Y d bedding: ng	R), gravelly, silty	y, fine eathered
BO		「目う」	]				sandsto	one) (SM).	•		
Rg-							SAND,	oist to wet, brown to dark ye some gravel; scattered very	/ pale brown,	weathered Puge	nne et Group
001.0					rm2		sandsto	one gravels; lenses of black	charcoal (SN	M).	F
987H			(et):			<u>. 9 1 . 1</u>					
ŏ i	ampie 	er Type ( 2" OD S	(ST): Split Spoon Sampler (S	ат) П	No Recovery		N.A	Moisture		Logged by:	MJP
<b>ا</b>   م	_						₩- ∑				
	ļ		Split Spoon Sampler (E	0 & M)	Ring Sample			Water Level (2/11/22)		Approved by:	JHS
≩	Ċ	Grab Sa	ample	·····	Shelby Tube S	ample	Ţ	Water Level at time of drilli	ng (ATD)		

ſ	2		sociatec		Geo	logi	c & N	lonit	oring Well Con	
ł	C		th sciences orporatec		oject Nun 003671				Well Number EB-1W	Sheet 7 of 8
Proje	ct Na	me	Cumberland Pro	perty	000011	1001			Location	King County, WA
		(Top of Wo	ell Casing) <u>~832.1</u>	ĺ					Surface Elevation (ft) Date Start/Finish	<u>~829.6 (Lidar, NAVD88)</u>
		uipment		de Drilling	/ TSi 15	50CC	Sonic		Hole Diameter (in)	11/23/20,11/25/20 6" casing / 4" core barrel
Hamr	mer \	Veight/Dro	op <u>N/A</u>				1		Well Tag #	BLZ 356
ے ا	le la					_	이일			
Depth	er Le					Blows/ 6"	Graphic Symbol			
	Water Level	W	ELL CONSTRU	CTION	S	B	00		DESCF	RIPTION
								End o	f drilling 11/24/20.	
-					-			Verv i		silty, fine to medium SAND, some
_								grave		ng, local clasts (Puget Group
								- Garrae	torio ana ocal) provonanco, c	
-			Threaded end cap							
_					-					
					KIN2					LEY1), silty to very silty, fine SAND,
-155					Ť			some		nated; contains abundant Puget Group
-					-					Y1 to 5Y), fine to medium SAND,
								some	gravel, some silt to silty; fain	tly bedded to massive (SP-SM).
-					<b>B</b>					
-					-			- -		
-								Very i	noist, dark gray (GLEY1), silt v gravelly, silty, fine to mediu	ty, very sandy, fine to coarse GRAVEL m SAND; normally graded; cobbles
-160								near l	ower contact; cohesive non-p	plastic matrix (SM/GM).
					]					
-					8113					
					Ĩ					
								bedde	ed to laminated; low plasticity;	SILT and SILT interbedded; thinly lacustrine deposits; mildly
-					-			efferv	escent (ML).	
-165			Nietius esus in besid	CII 450 to	<b>1</b> 23				ensist deals may fine CAND	
			Native cave-in back 175 feet	111 153 10				coars	e sand; faint cross bedding; a	some silt to silty, trace medium to alluvium (SP-SM).
F					1					
F								1 -		
ſ					11			Very 1	moist, black (GLEY1), silty, fi coal; bedded (SM).	ne to coarse SAND, some gravel;
-										ndy to very sandy, SILT; occasional
-170								thin le	enses of black silty, sand with ank deposits; mildly efferveso	some gravel; bedded to massive;
									,	
115/2:					-					
DT 5.									and the second states of the second	the first to medium OAND to see
NG.G									moist, dark gray, silty to very s e sand; inversely graded; mas	silty, fine to medium SAND, trace ssive (SM).
BORI					1					
GP								\/on/	moist dark drav verv sandv	SILT; massive; overbank to lacustrine;
1001					<b>1</b> 23			weakl	y effervescent (ML).	
NWWELL-B 200367H001.GPJ BORING.GPT 5/15/23	Samp	ler Type (	ST):	_						
-B 2(		2" OD S	plit Spoon Sampler (S	SPT)	No Rec	overy			- Moisture	Logged by: MJP
VELL.		3" OD S	plit Spoon Sampler (E	0 & M)	Ring Sa	ample		∑ ▼	Water Level (2/11/22)	Approved by: JHS
M	Ċ	Grab Sa	Imple	**************************************	Shelby	Tube S	ample	Ţ	Water Level at time of drilli	ng (ATD)

	٢	2	a s	ssociatedGeologic & Monitoring Well Construction Logarth sciencesProject NumberWell NumberSheet											
	$\triangleleft$	2		rth scien				ject Nun 003671				Well Number EB-1W		Sheet 8 of 8	
	Projec	t Na	me	Cumber	land Pro	operty						Location	King Count	y, WA	
			Top of V el Elevat	Vell Casing)	<u>~832.</u> ~713	1						Surface Elevation (ft) Date Start/Finish	~829.6 (Lid	<u>lar, NAVD8</u> 1/25/20	38)
	Drilling	g/Equ	uipment		Casca	de Drill	ing /	TSi 1	50CC	Sonic		Hole Diameter (in)	11/23/20,1 6" casing /	4" core bai	rrel
	Hamm	1	Veight/D	rop	<u>N/A</u>							Well Tag #	BLZ 356		
	Depth (ft)	Water Level							Is/	bol					
	(f	ater I				OTION		s	Blows/ 6"	Graphic Symbol		55005			
		Ň	V	VELL CO	NSTRU	CTION		T				DESCH	RIPTION		
											Boring	terminated at 175 feet ompleted at 153 feet on 11	1/25/20		
											Adjace	ent boring terminated at 30	ft on 11/25/20	. Groundwat	er
	-							-			with h	ntered at 116.5 ft ATD with ble open 130 - 140 ft, 117.	5 feet with hole	e open 140 -	150 ft,
	-							-			160 - 1	ATD with hole open 150 - 175 ft, and at 117 ft after w	ell completion	& before wel	l .
	_											pment. Water level at 112. 2. ~3 ft of sediment in well			
								Sun's			from v	vell during well development stainless steel sample cha	nt.		
	-180											stamless steel sample on	amp vr bamb		D/ 1 1/22.
	-							-							
	_														
	-							-							
	-							-							
	-185														
	-														
	-							-							
	-							-							
	-							_							
	100														
	-190														
	-							-							
	-							-							
	-														
	-195														
15/23	-							-							
DT 5/	-														
ING.G															
BOR								1							
NWWELL-B 200367H001.GPJ BORING.GDT 5/15/23	-							-							
67H00		 		(et):											
2003	S	ampi M	er Type 2" OD	(ST): Split Spoon S	Sampler (S	SPT)	П	No Rec	overv		М	- Moisture	Lo	ogged by:	MJP
ELL-B				Split Spoon S				Ring Sa			$\overline{\Delta}$	Water Level (2/11/22)		pproved by:	
NWWN		6	Grab S	ample				Shelby		ample	Ţ	Water Level at time of drilli	ng (ATD)		

	L	7		s o c i a t e c th sciences	Pr	Geo	logi nber	<u>c &amp; N</u>	<u>Ionitor</u>	ing Well Con Well Number	Sheet	
-		Z	1 N. M. M. M.	orporatec		2003671				EB-2W	1 of 4	
		on (T	op of We	Cumberland Pro ell Casing) 827.38	<u>B (Surveye</u>	d)				Location Surface Elevation (ft)	King County, WA 825.05	_
	Drilling	/Equ		Holt S	ervices / T	SI 150C	C (Sc	onic)		Date Start/Finish Hole Diameter (in)	<u>1/31/22,2/2/22</u> <u>9":0-70', 8":70-75"</u>	_
-	Hamme		eight/Dro	pp <u>N/A</u>						Well Tag #	<u>BNY 894</u>	
	Depth (ft)	Water Level	_w	ELL CONSTRU	CTION	S T	Blows/ 6"	Graphic Symbol		DESCI	RIPTION	
-		_		Above ground monu	iment with				<u>.</u>	Topsoi	il - 2 inches	
	-			bollards Concrete 0 to 2 feet		-			SAND; abu	undant organics (SM). Weathered Vashor , dark yellowish brown, ant cobbles; scattered re		
	-			Bentonite chips 2 to	5 feet	- 892			Boulder fro	s water at 2 feet. om 2 to 5 feet; chews up		
	- 5					_			່ Very moist ເ trace silt; a ເ	: (added water), grayish abundant cobbles; bedde	brown, coarse GRAVEL, some sand, ed; coarsens upward (GP).	
	-					-			GRAVEL,	ery moist (added water), trace to some silt; bedd I clast shapes; coarseni	grayish brown, sandy, fine to coarse ed; subrounded gravel; oblate, prolate, ng upwards (GP).	
-	-			18-inch centralizer a	at 8 feet	-			¢ ¢ ¢			
	- 10			Bentonite grout 5 to	53 feet				No recover	ry 10 to 12 feet.		
	- - - 15			4-inch I.D. Sch 40 F with threaded conne		- - - -			scattered of	vish brown, very sandy, xobbles; bedded (GP).	fine to coarse GRAVEL, trace silt;	
Ī	-			-2.05 to 60.7 feet					Moist to ve	ery moist, pale brown to	Contact Deposits light yellowish brown (10YR), fine to	
	-					-				AND, trace to some coa edded (SP).	rse sand, trace silt; faintly	
NG.GDT 5/15/23	- 20					-			Driller swit drilling.	ches from straight bit to	o auger bit at 20 feet, notes easy	
NWWELL-B 20200367H001.GPJ BORING.GDT	-					-67%			Occasiona (10YR), sil	I thin interbeds (<3 inch ty, fine to medium sand	nes thick) of grayish brown to gray I with minor coal fragments (SP).	
20200;	Sa [	<b>n</b> '	er Type (\$ 2" OD S	ST): plit Spoon Sampler (S	SPT) П	No Rec	overv		M - M	oisture	Logged by: MJP	
ELL-B	L [			plit Spoon Sampler (C		Ring Sa				ater Level (2/2/22)	Approved by: JHS	
NWWN		_	Grab Sa	mple		Shelby	Tube S	ample	⊻ wa	ater Level at time of drill	ling (ATD)	

ſ	R	associatec	Geolog	gic & M	onitoring Well Cons Well Number	struction Log
4	D	earth sciences	Project Number 20200367H00		EB-2W	2 of 4
Elevat		e <u>Cumberland Property</u> op of Well Casing) <u>827.38 (Surve</u> Elevation ~790	eyed)		Location Surface Elevation (ft) Date Start/Finish	King County, WA
Drillin	g/Equi	oment Holt Services	/ TSI 150CC (	Sonic)	Hole Diameter (in)	1/31/22,2/2/22 9":0-70', 8":70-75"
Hamn		eight/Drop <u>N/A</u>			Well Tag #	BNY 894
Depth (ft)	Water Level	WELL CONSTRUCTION	Н С Blows/	6" Graphic Symbol	DESCF	RIPTION
-		Bentonite grout 5 to 53 feet 18-inch centralizer at 28 feet				
- 30 -		4-inch I.D. Sch 40 PVC riser with threaded connections -2.05 to 60.7 feet	-		No recovery 30 to 32 feet.	
- - 35 - - - - - - - -	¥				Interbeds are scattered/more frequ (moist) (SP/SP-SM). Wet, brown (10YR), fine to medium trace to some silt: bedded/stratified	ent, samples are partially baked n SAND, trace to some coarse sand, l (SP-SM).
		Bentonite grout 5 to 53 feet 18-inch centralizer at 48 feet				
	-	r Type (ST): 2" OD Split Spoon Sampler (SPT)	No Recover	77	M - Moisture	Logged by: MJP
	_	3" OD Split Spoon Sampler (D & M)	Ring Sampl	-	$\overline{\Sigma}$ Water Level (2/2/22)	Approved by: JHS
	_	Grab Sample	Shelby Tub		<ul> <li>✓ Water Level (2/2/22)</li> <li>✓ Water Level at time of drilli</li> </ul>	
< L		'	L -,	1 -		

	1	2	> a s	sociatec		Geo	logi	с&М	Ionitori	ng Well Con	structio	on Log	
		1	ear	th sciences		oject Nun 2003671	nber		V	Vell Number EB-2W		Sheet	
-	Project	Non	10 N. M. M.	Cumberland Pro		.003071	1001			Location	King Cou	3 of 4	
				ell Casing) 827.38	8 (Surveyed	d)				Surface Elevation (ft)	<u>825.05</u>	-	
			l Elevatio	on ~790				• 、		Date Start/Finish	1/31/22,2	2/2/22 8":70-75"	
	Drilling/		ipment eight/Dro		ervices / T	SI 150C	<u>;C (Sc</u>	onic)		Hole Diameter (in) Well Tag #			
+			eigini/Di							vveii Tag#	<u>BNY 894</u>		
	£	Water Level					/6	ji j					
	Depth (ft)	er Lo					Blows/ 6"	Graphic Symbol					
		Vate	W	ELL CONSTRU	CTION	S	Ξ	00		DESCF	RIPTION		
		>											
Γ				4-inch I.D. Sch 40 F					Casing at 4	0 feet; water level at 36	.3 feet; hole s	staying open.	
-				with threaded conne -2.05 to 60.7 feet	ections	-mn							
				2.00 10 0011 1001									
ŀ						-			Wet. vellow	ish brown (10YR), fine	to medium S	AND, trace to so	ome
									coarse san	d, trace silt; faintly bedd	ed; <1% fine	gravel (SP).	
Ī						1							
						-							
				Medium bentonite c 58 feet	hips 53 to								
ŀ	- 55			001000									
						-							
f						-104							
ł						-							· ·
				10/20 silica sand 58	3 to 71 1				Wet, very d GRAVEL. t	ark grayish brown to bro race to some silt; occas	own (10YR), ional cobbles	sandy, fine to co : faintly bedded	barse
ŀ				feet				• • •	(GP-GM).	,		, <b>,</b>	
	00	ľ						°°°∎∎					
	- 60								No recovery	60 to 62 feet; slough.	Casing at 50	feet; water level	ay 35.5
		-	: <b> </b>			-			feet.				
		ł											
ł						-							
		ŀ											
f		ľ	:目:1			1		၀ိ ၀ 🖉 •					
		[				KIN		၀ွိ၀ 🖸					
						Ľ							
-	- 65	ŀ		4-inch I.D. Sch 40 F		_		°₀°∎∎					
		l		screen 0.020-inch s				°°°					
F		-		60.7 to 70.7 feet		-			Wet, yellow	ish brown (10YR), fine	to coarse GR	RAVEL, some sa	nd, trace
		ŀ							silt (GP).				
ſ		[	: 8:			] ]		0000					
ŀ						-		ۅۜڔڡڔۜڡ		Dread Or	oup Badassi	,	
		·	: 目:							hes to straight bit, unab		e with auger bit a	at 68
ŀ		ľ	:目:							ized rock at bottom of d			
	70	-	目										
<u>_</u>	- 70	ŀ	目							y 70 to 72 feet; slough is	s mix of uppe	r gravel and rock	ĸ
5/15/23		ŀ		Threaded end cap 7	70.7 to 71.1				fragments.				
<u>19:</u> G						-			Slightly we	athered to fresh, faintly	thinly hedded	to massive dark	k arav
RING									(7.5YŘ), m	oderately strong (R3), fi		to massive, udir	. gray
B				Bentonite chips 71.	1 to 75 feet	1			SANDSTO	NE/SILTSTONĔ.			
GPJ													
1001													
3671			888888										
NWWELL-B 20200367H001.GPJ BORING.GDT	Sa	<b>n</b> '	er Type (	-	<b>~</b>								
-B	L	Ш	2" OD S	Split Spoon Sampler (S	SPT)	No Rec	overy		M - Mo			Logged by:	MJP
/ELL.	[	Ш	3" OD S	Split Spoon Sampler (E	O & M)	Ring Sa	ample		_	ter Level (2/2/22)		Approved by:	JHS
MM/	k	•	Grab Sa	ample		Shelby	Tube S	ample	Wa	ter Level at time of drilli	ng (ATD)		
<u> </u>		-											

		2		sociatec		G	eo	logi	c & N	lonit	oring Well Con Well Number	struction Log
		1		rth sciences	2	Project	t Nur 367	mber H001			Well Number EB-2W	Sheet 4 of 4
	Project	Nar	ne	Cumberland Pro			507	1001			Location	King County, WA
	Elevati	on ("	Top of W	Cumberland Provide Comberland Pr	3 (Surve	yed)					Surface Elevation (ft)	825.05
			el Elevati iipment		ervices /	TSI 1	500	CC (Sc	onic)		Date Start/Finish Hole Diameter (in)	1/31/22,2/2/22 9":0-70', 8":70-75"
			/eight/Di	rop <u>N/A</u>							Well Tag #	BNY 894
	)) )	Water Level						ls/	bol			
	Depth (ft)	ater I					s	Blows/ 6"	Graphic Symbol			
		Wa	V	VELL CONSTRU	CTION		Т				DESCF	RIPTION
										Boring	terminated at 75 feet	10/00
	-									Wells	ompleted at 71.1 feet on 2 ettled ~3 feet during install	I
	-						-			Groun Groun	dwater encountered at 34. dwater measured at 34.9 f	8 feet ATD with casing at 67.5 feet.
	-						_					
	-						-					
	- 80						_					
	-											
	-						-					
	-											
	-						-					
	- 85											
	00											
	-						-					
	_						_					
							-					
	-						-					
	- 90											
	-						-					
	_											
	_						-					
	-											
	- 95						-					
115/2.	-						-					
DT 5												
NG.G	-						1					
BOR	-						-					
GPJ.	_											
7H001												
NWWELL-B 20200367H001.GPJ BORING.GDT 5/15/23	Sa	ampl	er Type	L(ST):				l	I	I		
3 202				Split Spoon Sampler (S	SPT)	0 N	o Rec	covery		М	- Moisture	Logged by: MJP
ELL- E			3" OD \$	Split Spoon Sampler ([	0 & M)	Ri	ng S	ample		$\overline{\Delta}$	Water Level (2/2/22)	Approved by: JHS
NWW		<b>6</b>	Grab S	ample				Tube Sa	ample	Ţ	Water Level at time of drilli	ng (ATD)

	1	2	> a		sociatec			Geol	logi	c & N	lonit	oring Well Con	structio	on Log	
	$\triangleleft$	2			th sciences orporatec			ect Num 03671				Well Number EB-3W		Sheet 1 of 5	
	Project				Cumberland Pro	operty						Location	King Cou		
	Elevation Water					<u>2 (Survey</u>	<u>/ed)</u>					Surface Elevation (ft) Date Start/Finish	<u>780.52</u> 12/21/21	12/22/21	
	Drilling Hamme	/Equ	ipmer	nt Dra	Casca	ide Drillin	ng / '	TSI 15	50CC	(Sonic)		Hole Diameter (in)	<u>8.5":0-95</u>	<u>', 8":95-105'</u>	
-	namme		eigni/	DIC	pp <u>IN/A</u>							Well Tag #	<u>BNW 200</u>	)	
	Depth (ft)	Water Level							/s/	Graphic Symbol					
	(f (f	ater		1.0.1				s	Blows/ 6"	Syn					
		Ň		vv	ELL CONSTRU	CHON		Т				DESCR	RIPTION		
	-			S	Above ground monu	ument with					Moist	o very moist, brown (7.5YR)	psoil	v fine to coarse	SAND
-				Ø	bollards Concrete 0 to 2 feet	t		-			abund	ant organics; massive (SM). Weathered Vashon		-	
				X							Moist,	light yellowish brown to light andy, SILT; low plasticity; nor	brownish yel	low (10YR), grav	velly,
											very Sa	andy, SILT, low plasticity, nor	many graded		
								1							
-								Sur Sur		$[\underline{\cdot}\underline{\cdot}]$	Moist,	Vashon Ice C light yellowish brown (10YR EL; low plasticity matrix; clas	to 2.5Y), silty	<b>)sits</b> y, sandy, fine to (	coarse
	- 5														
	5				Bentonite chips 1.5	to 51 feet					Very n GRAV	noist, light yellowish brown (2 EL; faintly bedded (GM).	2.5Y), silty, sa	andy, fine to coai	rse
								-		5.5.					
-								-							
										i i i					
											Very n sandy,	noist to wet, light yellowish br fine to coarse GRAVEL, sor	own to light one silt to silty	blive brown (2.5) ; bedded (GM).	(),
F								-1973				ded water			
-	- 10				1 inch ID. Sob 40 [										
					4-inch I.D. Sch 40 F -1.9 to 54.2 feet	VC fiser									
								-							
-								-			Very n	noist to wet, light olive brown	, sandy to ver	ry sandy, fine to	coarse
										၀ို္	GRÁV	EL, some silt; scattered cobb	oles; bedded	(GP-GM).	
								en z							
ŀ								H							
-	- 15														
								1		၀ ို ၀ 🖣 🖡					
-								-							
										° °					
								-65							
-	- 20									. ° . 🖈 •	No rec	overy; driller encountered gra	avellv cobble	zone from 20 to	34 feet
15/23											that st	uffed up/blocked core barrel.	Driller pushe	ed through loose	material.
DT 5/															
NG.GL															
BORI	.														
GPJ	.														
7H001.															
NWWELL-B 20200367H001.GPJ BORING.GDT 5/15/23	Sa	mple	s Typ	±81 e (\$	ST):					<u>ı                                     </u>					
B 202	[				ر plit Spoon Sampler (S	SPT) [		No Rec	overy			- Moisture		Logged by:	MJP
/ELL-	[	I	3" OI	) S	plit Spoon Sampler ([	0 & M)		Ring Sa	ample		∑_	Water Level (2/11/22)		Approved by:	JHS
MMN		6	Grab	Sa	mple			Shelby	Tube S	ample	Ţ	Water Level at time of drilling	ng (ATD)		

[	7	> a s ear	sociatec rth sciences	Pre	Geole	ogic	& M	lonitor	Ting Well Con Well Number	structio	on Log	
$\leq$	2	Ind	corporatec	202	00367H				EB-3W		2 of 5	
Project Elevati			Cumberland Pro ell Casing) 782.52	perty 2 (Surveyed	3)				Location Surface Elevation (ft)	<u>King Cou</u> 780.52	nty, WA	
Water Drilling	Level	Elevati	on ~743	de Drilling			Sonic)	<u> </u>	Date Start/Finish Hole Diameter (in)	12/21/21.	12/22/21 , 8":95-105'	
Hamm			op <u>N/A</u>		/ 131130		<u>50mc)</u>		Well Tag #	<u>BNW 200</u>		
Depth (ft)	Water Level		/ELL CONSTRU		S T	Blows/ 6"	Graphic Symbol		DESCF	RIPTION		
- - - 30 -			Bentonite chips 1.5 4-inch I.D. Sch 40 F -1.9 to 54.2 feet		-							
- - 35 - - -	Ţ				-			Very mois GRAVEL, may be slo	t, light olive brown, sand some silt; scattered cobi ough.	y to very sandy bles; bedded (	y, fine to coarse GP-GM). 34 to 3	36 feet
- 40 -						0		normally g	t, light yellowish brown, s graded (SM).			
-								Very mois silt; massi	t, brown (10YR), clayey, ve (GC).	sandy, fine to	coarse GRAVE	L, some
NWWELL-B 20200367H001.GPJ BORING.GDT 5/15/23	<b>⊥</b>		Bentonite chips 1.5	to 51 feet	-			i silt, abunc pulverizati Very mois	t to wet, grayish brown, s lant cobbles; inversely gr on; trace boulder (GP-GI t to wet, light olive brown bedded (GP-GM).	aded; increase M).	ed silt content d	ue to
502003 Sa		Type (										
L-B 2	-		Split Spoon Sampler (S						loisture		Logged by:	MJP
WMEI	_	3" OD S Grab Sa	Split Spoon Sampler ([ ample	v&™) ∏	Ring San Shelby T		nle	-	'ater Level (2/11/22) 'ater Level at time of drilli		Approved by:	JHS
ź	Ľ 1	JI AU JA	ampie	···	Sheiby I	une ogli	ihie	- VV				

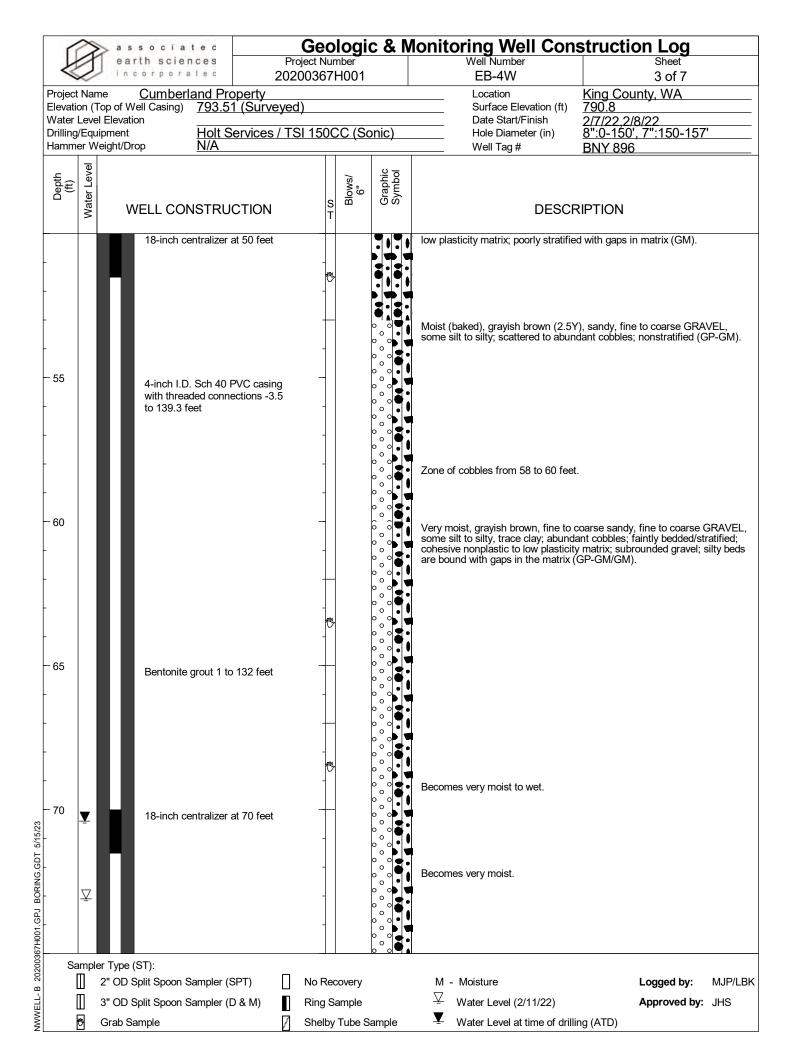
	6	2	> a s	sociatec		Geologi	ic & N	Ionitoring Well Cons	struction Log
	4	1		rth sciences		oject Number 00367H001		Well Number EB-3W	Sheet 3 of 5
	Project		e	Cumberland Pro	perty			Location	King County, WA
			op of W Elevatio	'ell Casing) <u>782.52</u> on ~743	2 (Surveyed	1)		Surface Elevation (ft) Date Start/Finish	<u>780.52</u> 12/21/21.12/22/21
	Drilling	/Equi	pment	Casca	de Drilling	/ TSI 150CC	C (Sonic)	Hole Diameter (in)	<u>8.5":0-95', 8":95-105'</u>
-	Hamm		eight/Dr	op <u>N/A</u>				Well Tag #	BNW 200
	) th	Water Level				s/	bol		
	Depth (ft)	ter L				Blows/ 6"	Graphic Symbol		
		Wa	N	ELL CONSTRU	CTION			DESCR	RIPTION
			8 88	4-inch I.D. Sch 40 F	PVC riser		• • •		
				-1.9 to 54.2 feet			$\circ$		
ŀ				#2/12 silica sand 51	to 65 feet	-		Wet, light olive brown to grayish bro coarse GRAVEL, trace to some silt	own, sandy to very sandy, fine to
						_		polymictic; gradational bedding/con	; scattered cobbles; bedded; tact with underlying sandy unit
								(GP/GW).	
ľ	-		E						
-	- 55			4-inch I.D. Sch 40 F	PVC well	-			
			目	screen 0.010-inch s					
				54.2 to 64.2 feet			$\left[\begin{smallmatrix} \circ \\ \circ \\ \circ \end{smallmatrix}\right]$		
ŀ	-					-			
			目					Wet, grayish brown to dark grayish gravel, trace silt, beds (<0.5 inches	brown, fine to medium SAND, some thick) of gravel; occasional cobbles
ŀ	-					-		(SP).	
	- 60					_			
ŀ						-			
-	-					-		Becomes fine to medium SAND, so	ome gravel to gravelly, trace silt (SP).
			目						
				Thus a deal and a surf	4 0 4- 04 0	-		Vashon Lo	odgement Till
	- 65			Threaded end cap 6	4.2 to 64.6			Moist, gray (GLEY1), silty to very si unsorted: diamict: matrix supported	ilty, sandy, fine to coarse GRAVEL; ; low plasticity to non-plastic;
	00							occasional cobbles; subrounded to few prolate clasts; sharp contact; si	rounded bladed and equate clasts;
ŀ						-			
						_	Ĭ	1	
ŀ						11		Change in provenance to dark and	green, trace red and white rocks.
+	-					-			
	70								
3	- 70			Bentonite chips 65 t	o 105 feet				
						-			
ş	_								
צוואפיפח									
5									
29.									
DOLL /									
20030	Sa	ء ا ample	r Type (	ST):		1			
202		m i		Split Spoon Sampler (S	SPT)	No Recovery		M - Moisture	Logged by: MJP
	[	Π	3" OD S	Split Spoon Sampler (I	D & M)	Ring Sample		∑ Water Level (2/11/22)	Approved by: JHS
		•	Grab Sa	ample	·····	Shelby Tube	Sample	Water Level at time of drilling	ng (ATD)
- L	-								

6			sociatec	_	Geo	logi	c & M	onite	oring Well Con	structi	on Log	
<	K		th sciences orporatec		oject Nun 003671				Well Number EB-3W		Sheet 4 of 5	
	ect Na		Cumberland Pro	perty			I		Location	King Cou		
		(Top of Wo el Elevatio	on ~743	<u>2 (Surveyed</u>	,				Surface Elevation (ft) Date Start/Finish	<u>780.52</u> 12/21/21	.12/22/21	
		uipment	Casca	de Drilling	/ TSI 1	50CC	(Sonic)		Hole Diameter (in)	8.5":0-95	5', 8":95-105'	
Ham		Veight/Dro	op <u>N/A</u>						Well Tag #	<u>BNW 20</u>	0	
Depth	(III) Water Level					/s/	Graphic Symbol					
De	ater	14			s	Blows/ 6"	Syn					
	Š	VV	ELL CONSTRU	STION	Т				DESCR	RIPTION		
		8888881						Boulde	r (calcite-cemented Puget G	Group sandsto	one) at 75 feet.	
-					-							
_												
-					-			Very m	oist, gray (GLEY1), sandy, f	fine to coarse	e GRAVEL, some	silt to
-					-				avel bed (GM). o very moist, gray, silty, san	dy fina ta ca	area CPA\/EL · di	amict:
								non-pla	astic matrix (GM).	ay, mie to co		arnot,
- 80												
F					-			Moist,	gray (5Y) to dark gray, silty, int cobbles; unsorted diamic	sandy, fine t	o coarse GRAVEI	L;
-								abunda	int cobbles; unsorted diamic	et (GM).		
-					-		<b>Č</b>					
-					-							
- 85												
00			Bentonite chips 65 t	o 105 feet								
-					-			 Verv m	oist. grav (5Y). verv gravellv		 lium SAND. some	
-									oist, gray (5Y), very gravelly ap graded; faintly bedded (Sl			
								very m sand, t	oist, gray (5Y), fine to medi race silt; faintly bedded (SP)	ium SAND, s ).	some gravel, some	e coarse
-					-							
-					-			Grades	to silty (SM).			
- 90								Moist,	gray (5Y) to dark gray, silty,	sandy, fine t	o coarse GRAVE	— — — — - L;
								abunda	int cobbles; unsorted; diamie	ct (GM).		
F					-							
F					-				Ohananor	cosh Bedroc	:k	
								Fresh,	thinly bedded, pale olive (10 ately weak (R2) fine to media	Y6/2) to light	t olive gray (5Y5/2	2), pselv to
								very clo	n non-contiguous seams of	0=0% (fractu	res induced by dri	illing);
-					-			extrem	ely weak mineralization alon	g recovered	joint surfaces.	UK
- 95												
T 5/1:					1			Freeh I	Puget Gr aminated to thinly bedded, g	oup Bedroc		weak
G.GD								(R2), c by drilli	arbonaceous (with thin coal	seams), SH	ÀLE; RQD=0% (fi	ractured
ORIN								~y unin				
SPJ E												
1001.6												
03671			ст).									
2020	Samp ∏	ler Type ( 2" OD S	ST): plit Spoon Sampler (S	эрт) П	No Rec	overv		М -	Moisture		Logged by:	MJP
ELL-B	Ш		plit Spoon Sampler (E	, D	Ring Sa			$\overline{\nabla}$	Water Level (2/11/22)		Approved by:	
NWWELL-B 20200367H001.GPJ BORING.GDT 5/15/23	ß	Grab Sa			Shelby		ample	Ţ	Water Level at time of drilli	ng (ATD)	· ·	

	1	2	> a s	socia	5. S. C.		G	<u> eo</u>	logi	c & M	lonit	oring Well Con Well Number	<u>structio</u>	n Log	
	$\triangleleft$	2		rth scier corpora			Proje 20200					Well Number EB-3W		Sheet 5	
	Project			Cumberl	and Pro	perty						Location	King Cour		
			Fop of W el Elevati	/ell Casing) ion	<u>782.52</u> ~743	2 (Surve	eyed)					Surface Elevation (ft) Date Start/Finish	<u>780.52</u> 12/21/21,	12/22/21	
			ıipment /eight/Dr		Casca N/A	de Drilli	ing / T	SI 1	50CC	(Sonic)		Hole Diameter (in) Well Tag #	<u>8.5":0-95'</u>	<u>, 8":95-105'</u>	
				ор	<u>IN//7</u>								<u>BNW 200</u>		
	Depth (ft)	Water Level							Blows/ 6"	Graphic Symbol					
	ă)	/ater	v		ISTRU	CTION		s	Blo 6	Syr		DESCE	RIPTION		
		5	v					Т							
											Fresh, weak (	thinly bedded, medium gray R2); fine to medium grained	to light olive g	ray (5Y 6/1), m E; RQD=0% (fra	oderately actured
	-							-			bv drill	ing); with very thin non-conti ed throughout; non-calcared	iquous coal/or	ganic (leaf prints	s?)
	-							-							
	_														
										· · · · · · · · ·					
	-							-							
	-105							_							
	-										Boring	terminated at 105 feet ompleted at 64.5 feet on 1	2/22/21		
											Groun	dwater encountered at 49.	5 feet ATD (e		
	-							-			feet on	es). Groundwater measu 1/12/22, and at 37.6 feet	red at 44.2 te on 2/11/22.	et on 12/22/21	, at 37.4
	-							-							
	-														
	-110														
	-							-							
	_							_							
	-														
	-							-							
	-115							_							
	-														
	-							-							
	-							-							
	_														
ę	-120							-							
5/15/2	-							-							
GDT.	_														
RING.															
J BO	-							1							
01.GF	-							-							
NWWELL-B 20200367H001.GPJ BORING.GDT 5/15/23															
20200;	Sa	ample M	er Type		omelas (C	ידחי	п.					Majatura			
.г-в		Ш П		Split Spoon S			_	lo Rec			м. <u></u>	- Moisture		Logged by:	MJP
WEL		₽	3" OD S	Split Spoon S ample	ampier (L	να IVI)			ample Tube Sa	ample	Ţ	Water Level (2/11/22) Water Level at time of drilli		Approved by:	JUQ
ź		Ľ	Grap S	ampie				neiby	i ube S	anpie			ing (A i D)		

ſ	A	associate		Geologi Project Number	c & N	lonit	oring Well Cor Well Number	structio	on Log	
$\triangleleft$	2	earth sciences		200367H001			EB-4W		1 of 7	
Project			Property 3.51 (Surveye	od)			Location Surface Elevation (ft)	King Cou 790.8	nty, WA	
Water	Level	Elevation		,	ania)		Date Start/Finish	2/7/22 2/8	8/22 , 7":150-157	
Drilling Hamm		eight/Drop <u>N//</u>	<u>It Services / T</u> A	51 15000 (50	JNIC)		Hole Diameter (in) Well Tag #	<u>8 .0-150</u> BNY 896		
Depth (ft)	Water Level		RUCTION	L S Blows/ 6"	Graphic Symbol		DESC	RIPTION		
5		Above ground r bollards Concrete 0 to 1 Bentonite grout	foot	-		Coarse (GP-G ~6 to 9 Moist 1 GRAV Moist, sandy,	noist, very dark brown (10Yl GRAVEL, trace to some si M). ) inches stripped prior to bo	lt; abundant w ring. essional Outv vn (10YR), sar tlets: faintly be	coarse sandy, fi ood debris and r wash ndy, fine to coars added (GP-GM).	se
- - - 10 -		18-inch centrali	zer at 10 feet			No rec	overy 9 to 10 feet.			
- - 15 -		4-inch I.D. Sch with threaded c to 139.3 feet				trace t	grayish brown, medium to o o some silt; abundant cobbl zed/fractured cobbles (GP)	es; faintly strat	fine to coarse G tified;	RAVEL,
-						No rec	overy 19 to 20 feet.			
- 20						(2.5Y to very sat	Vashon Ice / moist (baked) to moist, gra o 10YR), silty, fine to coars andy, fine to coarse GRAVE ve nonplastic matrix; clast s	e very gravelly L; scattered c	dark grayish bro , fine to coarse obbles; nonstrat	SAND to ified;
VELL- B 20		r Type (ST): 2" OD Split Spoon Sampl 3" OD Split Spoon Sampl Grab Sample		No Recovery Ring Sample Shelby Tube S	Sample	M ⊻ ⊻	- Moisture Water Level (2/11/22) Water Level at time of dril	ling (ATD)	Logged by: Approved by:	MJP/LBK JHS

1	C		sociatec		Geo	logi	c & N	lonito	ring Well Con	structio	on Log	
4	Q		rth sciences corporatec		oject Nun 200367				Well Number EB-4W		Sheet 2 of 7	
	ect Na		Cumberland Pro	perty I (Surveyed	۲ <i>)</i>				Location	King Cou 790.8	nty, WA	
Wate	er Lev	el Elevati	ion	、 <b>,</b>	,				Surface Elevation (ft) Date Start/Finish		3/22 7":150-157	
		uipment Veight/Dr		ervices / T	<u>SI 150C</u>	<u>;C (Sc</u>	onic)		Hole Diameter (in) Well Tag #	<u>8":0-150',</u> BNY 896		•
	le le						0 -		Ŭ			
Depth	(III) Water Level					Blows/ 6"	Graphic Symbol					
	Wate	V	VELL CONSTRU	CTION	S T	Ξ	ິດທີ		DESCF	RIPTION		
	_		Bentonite grout 1 to	132 feet			्राज्याः					
-			5									
								•				
Ē								Moist, gi SAND, s	ayish brown (10YR), fine ome silt to silty; cohesive;	to coarse grav nonplastic ma	ely, medium to atrix; poorly strat	coarse tified with
-					-			gaps in i	natrix (SP-SM).	·		
-					-							
- 30												
			18-inch centralizer a	at 30 feet				Slightly i (2.5Y to	noist (baked) to moist, gra 10YR), silty, sandy, fine to	yish brown to coarse GRA	dark grayish bro VEL, to very sar	own ndy;
F								nonstrat	t cobbles; cohesive non pl fied; mostly bladed, some pulverized/baked from dril	prolate and of	last supported; plate, few equate	e gravel
-					-			snapes,	puivenzed/baked from dhi	ling (GM).		
-					-		ë, ë,	1				
								Ì				
								1				
- 35	4-inch I.D. Sch 40 PVC cas with threaded connections -				-63							
-			to 139.3 feet	ections -3.5	+			l				
_							5.5.	i.				
								l				
Ē								1				
F					-							
- 40					_			l				
							<b>.</b>					
								I				
-					+			1				
-					-672			l				
								1				
								1				
– 45 ទ			Bentonite grout 1 to	132 feet				l				
5/15/:								Boulder	from 46 to 48 feet.			
S.GDT								I				
DRING								1				
PJ B					1			l				
1001.G					KTUL.			Moist to	very moist, grayish brown	(2.5Y), silty, f	ine to coarse sa	ndy, fine
NWWELL-B 20200367H001.GPJ BORING.GDT 5/15/23					ľ			to coars	e GRAVEL, trace clay; sca		s, conesive non	piastic (O
2020	Samp ∏	ler Type 2" OD \$	(ST): Split Spoon Sampler (S	ярт) П	No Rec	overv		М-	Moisture		Logged by:	MJP/LBK
ELL-B	3" OD Split Spoon Sampler (D & M)				Ring Sa	-			Nater Level (2/11/22)		Approved by:	
	6	Grab S		"" " "	Shelby		ample	_	Nater Level at time of drill	ing (ATD)		



1	2	associ	atec		Geo	logi	c & M	onit	oring Well Con	structio	on Log	
	1	earth sci			oject Nur 00367	nber			Well Number EB-4W		Sheet	
Project	t Nar	A 1693 m 41	erland Prope		.003071	1001			Location	King Cou	4 of 7	
Elevati	on (1	op of Well Casing		Surveyed	d) (k				Surface Elevation (ft)	<u>790.8</u>		
		l Elevation ipment	Holt Serv	icos / TS	21 1 500		nic)		Date Start/Finish Hole Diameter (in)	2/7/22,2/8	8/22 , 7":150-157'	
		eight/Drop	N/A		51 1500		JIIC)		Well Tag #	<u>8 .0-150</u> BNY 896		
Depth (ft)	Water Level		ONSTRUCT	ION	S T	Blows/ 6"	Graphic Symbol			RIPTION		
- - 80 - - 85		with thro to 139.3	.D. Sch 40 PVC eaded connection 3 feet te grout 1 to 13	ons -3.5				Wet, g to coar Wet, g mediur Wet, g some g	at 80 feet; water level at 70 rayish brown to light olive br se GRAVEL, some silt; bed rayish brown to light olive br n SAND, trace to some silt; rayish brown to light olive br gravel, trace silt; bedded; wa noist to wet, light olive brown some silt; scattered cobble	own (2.5Y), fi ded; water bea own (2.5Y), v bedded; wate own (2.5Y), fi ter bearing (S (2.5Y), grave	aring (GP-GM). rery gravelly, fine r bearing (SP-SI ine to medium S SP). elly, fine to mediu	to vi). AND,
- - - - 90		18-inch	centralizer at 9	0 feet	-			Moist t gravell Wet, y Wet, g	o very moist, dark gray (10YR), silty ed; diamicton; cohesive non inded gravel; non-effervesce o very moist, dark yellowish y, fine to medium SAND; un ellowish brown, silty, fine to EL; massive (GM). Water be rayish brown (10YR), fine to	plastic matrix; nt; no cobble: brown to brow sorted diamic coarse sandy earing below 8	sharp contact; s; till rip-up (?) (\$ wn (10YR), silty, ton; mottled (SN ; fine to coarse 39 feet.	SM).  very I)
					-			Wet, g	dded (SP). rayish brown, fine to coarse trace to some silt; occasion	GRAVEL, so al cobbles; be	me sand to coars edded (GP).	se
95		1 inch		Casting	-			Wet, g silt; oc	rayish brown (10YR), gravel casional cobbles; bedded (S	ly, fine to coa P).	rse SAND, trace	to some
NWWELL-B 20200367H001.GPJ BORING.GDT 5/15/23			.D. Sch 40 PVC eaded connections of the set		-				rayish brown, fine to coarse silt; faintly bedded to massiv		to some gravel,	trace to
Soozo Sa	ample	er Type (ST):										
B 20		2" OD Split Spoor	n Sampler (SPT	)	No Rec	covery		M	- Moisture		Logged by:	MJP/LBK
		3" OD Split Spoor	n Sampler (D &	M)	Ring Sa	ample		$\overline{\Delta}$	Water Level (2/11/22)		Approved by:	JHS
IMM	6	Grab Sample		■	Shelby		ample	Ţ	Water Level at time of drilli	na (ATD)	-	
ź	Ľ	Si as Sample			Choby	1 000 0	anpio	-				

ſ	2	as	sociatec		Geo	logi	c & M	lonitor	ing Well Con	struction Log
$\triangleleft$	5	ear in c	th sciences orporatec		oject Nur 200367				Well Number EB-4W	Sheet 5 of 7
	ion (To	p of We		operty 1 (Surveyed	d)				Location Surface Elevation (ft)	King County, WA 790.8
Drilling	g/Equip		Holt S	ervices / T	SI 1500	CC (Sc	onic)		Date Start/Finish Hole Diameter (in)	2/7/22,2/8/22 8":0-150', 7":150-157'
Hamm		ight/Dro	op <u>N/A</u>						Well Tag #	BNY 896
Depth (ft)	Water Level	W	ELL CONSTRU	CTION	S	Blows/ 6"	Graphic Symbol		DESCF	RIPTION
- - -105 - - -110 -			Bentonite grout 1 to 18-inch centralizer a					gray, šilty, Very mois GRAVEL, Very mois silt; occasi at 110 fee Moist to ve	fine to coarse sand; stra t, grayish brown to brown some silt to silty; faintly l t to wet, brown (10YR), <u>c</u> onal to scattered cobbles t; water level at 72.7 feet	n (10YR), sandy, fine to coarse bedded/stratified (GP-GM). gravelly, fine to coarse SAND, some s; bedded/stratified (SP-SM). Casing
- -115 - -			4-inch I.D. Sch 40 F with threaded conne to 139.3 feet		-			SAND; thi	cklý bedded (SM).	2.5YR), silty, gravelly, fine to coarse 2.5YR), very silty, fine to coarse ed (GM).
NWWELL-B 20200367H001.GPJ BORING.GDT 5/15/23			Bentonite grout 1 to	132 feet	-			Trace cobl	grayish brown.	
NWWELL-B 2020036	[] 2 [] 3		plit Spoon Sampler (S plit Spoon Sampler (E		No Red Ring S Shelby		ample	-	oisture ater Level (2/11/22) ater Level at time of drilli	Logged by: MJP/LBK Approved by: JHS ng (ATD)

ſ	2	> a s	sociatec		Geolo	ogic & N	<i>l</i> onito	oring Well Con	structi	on Log	
1	1		rth sciences		oject Numbe 00367HC	er		Well Number EB-4W		Sheet	
Projec		- 1 U U U	Cumberland Pr						King Cou	6 of 7	
Eleva	tion (1	op of W	ell Casing) <u>793.5</u>	51 (Surveyed	d) (k			Surface Elevation (ft)	<u>790.8</u>	-	
		l Elevatio		Convisoo / TO		(Sonio)		Date Start/Finish	$\frac{2}{7}$	8/22	•
		ipment eight/Dr		Services / TS				Hole Diameter (in) Well Tag #	<u>8 :0-150</u> BNY 896	' <u>, 7":150-157</u> S	
		5	· <u>····</u>							/	
(ft)	Water Level					6" 6" Graphic Symbol					
De f	ater				S	6" 6" Graphi Symbo					
	Wa	N	/ELL CONSTRU	JCTION	T			DESCF	RIPTION		
			4-inch I.D. Sch 40	PVC casing			•	Pro-Vash	on Deposits		
			with threaded conn				Wet, gr	av (5Y) with occasional vell	ow staining.	silty, gravelly, fin	e to
Ē			to 139.3 feet		-		coarse	SÁND; thickly bedded (SM)			
-					_						
							GRAVE	ay (5Y) with occasional yell L, some fine to coarse san	d; thickly bed	Ided (GM).	coarse
-					-						
_					_		1	sing sand.			
							Cobble.	ay (5Y), very silty, GRAVEL	trace cobbl	e (GM)	
-130			18-inch centralizer	at 130 feet			wer, gr	$a_{j}$ (or $j$ , vor $j$ sinty, OIV-VEL	., 1400 00001		
L											
							Wet, gra	ay (5Y), very silty, fine GRA ie sand AND wet, grav (5Y)	VEL, some o	coarse gravel, so ne to coarse SAI	ome fine ND
-		88 88			-		some gr	e sand AND wet, gray (5Y) avel to gravelly; interbedde	d (6 to 18 inc	ches thick) (GM/	SM).
Ē			Bentonite chips 13	2 to 137							
-			feet		-		1				
-135						Ŭ,	Ì				
_							}				
						la l	ł				
-		88 88			-		Wet, gra	ay (5Y), very silty, fine GRA	VEL, some f	fine to coarse sa	nd;
_		기신					faintly b	edded (GM).			
			Sand pack 137 to 2	157 feet			Wot an	ay (5Y), very silty, fine to co		some fine grove	l: faintly
-					-		bedded		aise Sand,	some me grave	a, rainuy
-140											
140					6772		Wet, gra	ay (5Y) to greenish gray (G barse gravel; thickly beddeo	GLEY 1), silty L(GM)	, sandy, fine GR	AVEL,
-								saloo gravol, anony bodaoo	(GM).		
		目					) <sup>1</sup>				
F		:目:			1		<b>•</b>				
F		目			-		Intorher	(6 inches thick) of wat	ον (5V) +ο σ=-	onich grou (CLE	
		::目::				♥▲♥▲		l (6 inches thick) of wet, gra i to coarse SAND, some sili			
F					-		4				
-145		÷∃:		D) (Q	- (112	3.3:					
			4-inch I.D. Sch 40 screen 0.020-inch		Ĥ		1				
5/15/23			with threaded conn	nections	-		Occasio	nal cobbles.			
GDT			139.3 to 149.3 feet	ι							
SING		目					Wet, ve	ry dark bluish gray (GLEY 2 SAND, some silt; thickly be	2, 3/5B-10B) dded (SP-SM	, gravelly, mediui 1).	m to
BOR					-			, e, anony bo		1	
GPJ											
1001.			Threaded end cap	149.3 to	( <sup>m</sup> z			ry dark bluish gray (GLEY 2 some fine gravel, trace silt;			se
03671		<u>: .</u>	•		<u> </u>			Some mie graver, trace silt,			
NWWELL-B 20200367H001.GPJ BORING.GDT	Sample M	er Type (				<b>o</b> m (		Maiatura		Longer of the se	
B L	Ш Ш		Split Spoon Sampler (		No Recov			Moisture		Logged by:	MJP/LBK
WEL	Ш Б		Split Spoon Sampler (	U&M) ∎	Ring Sam		-	Water Level (2/11/22)	/ <b>.</b> :	Approved by:	JHS
M	Ċ	Grab Sa	ample	·····	Shelby Tu	be Sample	Ţ	Water Level at time of drilli	ng (ATD)		

	1	2	associ	atec		Ge	ologi	c & N	lonit	oring Well Con	struction	on Log	
	4	1	earth sci	ences	2	Project N 020036				Well Number EB-4W		Sheet 7 of 7	
-	Project	Nar	en la sur recent	erland Pro		020030	/11001			Location	<u>King Coι</u>		
	Elevati	on ( <sup>-</sup>	Fop of Well Casing	a) <u>793.5</u>	1 (Survey	/ed)				Surface Elevation (ft)	<u>790.8</u>	-	
			el Elevation iipment	Holt S	ervices /	TSI 150	$\overline{CC}$	onic)		Date Start/Finish Hole Diameter (in)	2/7/22,2/	8/22 ', 7":150-157'	
			/eight/Drop	N/A				511107		Well Tag #	BNY 896		
	-	vel						c J					
	Depth (ft)	Water Level					Blows/ 6"	Graphic Symbol					
		Vate	WELL CO	ONSTRU	CTION		S	ତିର		DESCE	RIPTION		
		>	_				1						
			149.7 fe	eet					Wet, v gravel:	ery dark to dark bluish gray, faintly bedded (SM).	silty, fine to o	coarse SAND, so	me fine
ŀ						-			Driller	notes that recovery from 15	0 to 153 is po	ssibly slough.	
									Drill pr	ogress slows and action sm	aatha, drillar	owitabaa	
-						-				Puget Gr	oup Bedroc	k	
						_			to liaht	ately weathered, bedded with gray (N7), strong (R4) SAN	h areas of lar IDSTONE wit	ninae, very light ( th thin beds of light)	gray (N8) ht olive
									gray, v	ery weak, SILTSTONE.			
F	155					-							
						_							
									Becon	nes slightly weathered.			
F						-		:::::::					
-						-			Boring	terminated at 157 feet ompleted at 149.7 feet on	2/8/22		
									Groun	dwater encountered at 70.	4 feet ATD.	Groundwater m	neasured
F						-			at 71.2	? feet after boring on 2/10/ 2.	22 and at 73	3.1 teet in well o	n
-	-160					_							
F						-							
+						-							
Ē						-							
+						-							
	-165					_							
	100												
-						-							
Ļ						-							
F						-							
ļ						-							
	-170					-							
5/15/2						-							
SDT (													
NG.G						-							
BOR						-							
GPJ													
'H001													
00367	Se	ı ampl	er Type (ST):					1					
3 202			2" OD Split Spoor	n Sampler (S	SPT)	No R	ecovery		M	- Moisture		Logged by:	MJP/LBK
ELL-B			3" OD Split Spoor			_	Sample		$\overline{\Delta}$	Water Level (2/11/22)		Approved by:	
NWWELL-B 20200367H001.GPJ BORING.GDT 5/15/23		6	Grab Sample				by Tube S	Sample	Ţ				

	1	2	> a s		ociatec		Ge	ologi	c & M	lonit	oring Well Con Well Number	struction Log	
	$\langle$	2			sciences rporatec		Project N )20036				EB-5W	1 of 4	
Ele		n (T	op of V	Vell	umberland Pro Casing) <u>774.3</u> 1	perty (Survey	ed)				Location Surface Elevation (ft)	King County, WA 771.00	
Dri	lling/	Equi	Elevat pment			de Drillin	g / TSI	150CC	(Sonic)		Date Start/Finish Hole Diameter (in)	<u>12/20/21,12/21/21</u> 8":0-73', 7":73-85'	
Ha	mme		eight/D	rop	<u>N/A</u>						Well Tag #	BNW 198	
Denth	(tt)	Water Level	□,	νei		CTION		L G Blows/ 6"	Graphic Symbol		DESCF	RIPTION	
-		2 / / / X2 / / / Xannan		Ъ	bove ground monu ollards Cement 0 to 2 feet	ment with	-			gravel topsoi	to very moist, brown (7.5YR) ; massive; scattered roots ar l stripped at boring prior to st	nd rootlets oxidized; ~9 to	ND, some 12 inches of
		<u>uuuu</u>								Becor	nes gravelly.		
-	5				Bentonite chips 2 to		-			Moist GRA∖	Vashon Ice ( (baked), grayish brown, silty EL; pulverized; massive (GN	Contact Deposits , sandy, cobbly, fine to coa /).	arse
-				(	Hydrated 56 to 59 f	eet)	-			N4-i-4			
-							-	m		Moist silt; so	to very moist, grayish brown attered cobbles; faintly strati	, gravelly, fine to coarse S. fied (SP).	AND, trace
- 1 - - -	0				-inch I.D. Sch 40 F 3.1 to 62 feet	WC riser				No rea	covery; driller noted soft sedi	ment pushed out from cor	e barrel.
- 1	5						_			Moist silt; so	to very moist, grayish brown attered cobbles; faintly strati	, gravelly, fine to coarse S. fied (SP).	AND, trace
-							-			Very r some	noist, light olive brown (2.5Y silt; bedded (GP-GM).	), sandy, fine to coarse GF	₹AVEL,
-							-			Moist fine to	to very moist (baked), light o coarse GRAVEL, some silt	live brown to grayish brow to silty; bedded (GM).	n, sandy,
- 2/15/23	0									Charc	oal at 19.5 feet; scattered ab	oundant cobbles.	
NWWELL-B 20200367H001.GPJ BORING.GDT							-			As ab	ove; grades to some silt; occ	asional cobbles (GP-GM).	
3 2020	Sai	<b>n</b> '	r Type 2" OD		): : Spoon Sampler (S	iрт) Г	] No R	ecovery		М	- Moisture	Logged by	: MJP
<u>/ELL-E</u>	Ū	_		•	Spoon Sampler (E	· L	- Ring	Sample		$\overline{\Delta}$	Water Level (1/12/22)	Approved	
MMN	۴	3	Grab S	Samp	ble	····	Shell	y Tube S	Sample	Ţ	Water Level at time of drill	ing (ATD)	

1	2	2		sociatec		Ge	ologi	ic & N	lonito	ring Well Con	structio	on Log	
4	Ľ	Ŋ		rth sciences porporatec	2	Project N 2020036				Well Number EB-5W		Sheet 2 of 4	
Proje				Cumberland Pro	perty					Location	King Cou		
Eleva Wate				ell Casing) <u>774.31</u> on ~704	<u>(Surve</u>	yed)				Surface Elevation (ft) Date Start/Finish	<u>771.00</u> 12/20/21	12/21/21	
Drilli	ng/Eq	luipn	nent	Casca	de Drillir	ng / TSI	150CC	(Sonic)	)	Hole Diameter (in)	<u>8":0-73',</u>	7":73-85'	
Ham		т <b>-</b>	nt/Dr	op <u>IN/A</u>						Well Tag #	<u>BNW 198</u>	3	
Depth	(III) Water Level		W	/ELL CONSTRU(	CTION		Blows/ 6"	Graphic Symbol		DESCF	RIPTION		
	_	881	881	Bentonite chips 2 to	59 feet			• • •					
-		000000	000000	(Hydrated 56 to 59 f	eet)	-		$\circ$					
		000000	200000										
F		000000	000000			-			Become	s sandy to very sandy, con	tains local Pu	iget Group clasts	S.
-		200000	200000			-							
_		000000	00000			_							
			00000					000					
- 30		200000	200000	4-inch I.D. Sch 40 F	VC riser	_			Moist (b	aked), brown (7.5YR to 10	YR), silty, sar	ndy, fine to coars	se
-				-3.1 to 62 feet		-			GRAVE matrix (	L, trace clay; scattered cob GM).	bles; massive	e; cohesive, non-	-plastic
		200000	20000			_			1				
		00000	00000										
-		000000	00000			-							
-						-		2.2.	Moist (h	aked), grayish brown to bro	wn (10VP)	arovolly, find to d	oarea
			2000						SAND, I	race silt; scattered silty inte	erbedding wit	n black and stror	ng brown
- 35	5								mouning	(SP-SM).			
-	D 4-inch I.D. Sch 40 PV0 -3.1 to 62 feet					-							
		00000	00000										
		00000											
F						-	-						
-						-	m						
		200000	20000						i i				
- 40		200000	200000			_			No reco	very 40 to 42 feet.			
-		00000	00000			-							
		00000	00000										
		00000							SAND, I	aked), grayish brown to bro race silt; scattered silty inte	own (10YR), g erbedding witl	gravelly, fine to o n black and stror	coarse ng brown
F						-			Moist (b	(SP-SM). aked), grayish brown to bro	own (10YR) a	nd brown (7.5Yl	R)
-						-			mottled,	silty, sandy to very sandy, y interbeds abundant; non-	fine to coarse	e GRAVEL; strat	tified;
45		00000	20000							ed; driller notes difficult drill			
– 45 ន		00000	00000	Bentonite chips 2 to (Hydrated 56 to 59 f					•				
5/15/2		00000	00000	(Trydrated 50 to 59 t	eel)	-	_		'				
GDT		00000	00000			1	<u>m</u>						
SING.		0000						1010					
BOI		000000	000000			-							
11.GP			000000			-							
67H00		000000	2000000										
NWWELL-B 20200367H001.GPJ BORING.GDT 5/15/23	Samp		⁻ype (				_						
-B 20		2"	OD S	Split Spoon Sampler (S	PT)	No R	ecovery			Moisture		Logged by:	MJP
NELL	Ш			Split Spoon Sampler (D	8 M)		Sample		-	Water Level (1/12/22)		Approved by:	JHS
Ŵ	¢	Gr	ab Sa	ample		Shell	y Tube S	Sample	Ţ	Water Level at time of drilli	ng (ATD)		

1	$\gg$	a s	sociatec	Geologic & Monitoring Well Construction Log           Project Number         Well Number         Sheet						
$\triangleleft$	5		th sciences		oject Number 200367H001		Well Number EB-5W	Sheet 3 of 4		
Proiect	t Name		Cumberland Pro		.0000711001		Location	King County, WA		
Elevati	ion (Top		ell Casing) 774.3	1 (Surveyed	d) (t		Surface Elevation (ft)	771.00		
	Level E g/Equipr			de Drillina	/ TSI 150CC	C (Sonic)	Date Start/Finish Hole Diameter (in)	<u>12/20/21,12/21/21</u> <u>8":0-73', 7":73-85'</u>		
Hamm	ier Wei	ght/Dro					Well Tag #	BNW 198		
÷	evel				/%	pol Lic				
Depth (ft)	Water Level				9 Blows/ 6"	Graphic Symbol				
	Wai	W	ELL CONSTRU	CTION	S m T		DESCR	RIPTION		
	88	881	4-inch I.D. Sch 40 F	PVC riser		9.9.				
	000000	00000	-3.1 to 62 feet							
	00000						Very moist, grayish brown to brown SAND, trace to some silt; frequent	(10YR), gravelly, medium to coarse		
-	00000				- 50e		occasional cobbles (SP-SM).	naru sity interpeus, stratilieu,		
_	000000	0000								
	200000									
-	00000				-					
- 55	200000	20000			_					
	00000									
	00000	00000			1					
-	00000				-					
	00000						Very moist to wet, grayish brown, s GRAVEL, some silt; scattered to at	andy to very sandy, fine to coarse		
	000000	00000					GRAVEL, some sill; scallered to at	bundant copples; bedded (GP-GM).		
-	88	88			-6783					
- 60					_					
-			#2/12 Silica sand 59	9 to 73 feet	-					
-						၀ို၀ 🖣 🖡				
-										
-					-	၀ိ၀ 🔹 •	Boulder at 64 feet.			
0.5						°ँ° • •				
- 65			4-inch I.D. Sch 40 F screen 0.010-inch s							
-			62 to 72 feet		-	၀ို၀				
	<b>▼</b>					° ° •				
	I I I I I I I I I I I I I I I I I I I				1882 1997					
-					H		Very moist, brown, silty, sandy, fine	e to coarse GRAVEL; massive; slight		
-							normal grading (GM).			
- 70					11					
			Threaded end cap 7	2 to 72.4			Vecherle	adaamant Till		
2-	88	8888					Moist to very moist, gray (2.5Y to 5	Y), silty, gravelly, fine to medium		
						Vashon Lodgement Till Moist to very moist, gray (2.5Y to 5Y), silty, gravelly, fine to medium SAND; unsorted diamict; matrix supported; subrounded to rounded clasts; cohesive; non-plastic matrix; mildly effervescent (SM).				
Sa Sa	ampler <sup>.</sup>	<u>¤ ¤ 8 8 8</u> Гуре (	ST):			<u> </u>				
3	m		Split Spoon Sampler (S	SPT)	No Recovery		M - Moisture	Logged by: MJP		
	3'	OD S	Split Spoon Sampler (E	0 & M)	Ring Sample		∑_ Water Level (1/12/22)	Approved by: JHS		
	🖲 G	rab Sa	ample	·····	Shelby Tube	be Sample 📕 Water Level at time of drilling (ATD)				
·										

	1	2	ass	sociat	19.C			Geo	logi	c & M	lonit	oring Well Con	structio	on Log	
	$\triangleleft$	2		orpora				ect Nun 03671				Well Number EB-5W		Sheet 4 of 4	
	Project		ne <u>(</u>	Cumberla	and Pro	perty						Location	King Cou		
			op of Wel I Elevatior	ll Casing)	774.31 ~704	(Surve	eyed)					Surface Elevation (ft) Date Start/Finish	<u>771.00</u> 12/20/21		
	Drilling	/Equ	ipment		Casca	de Drilli	ing / <sup>·</sup>	TSI 1	50CC	(Sonic)		Hole Diameter (in)	<u>8":0-73',</u>	<u>7":73-85'</u>	
	Hamm	er W	eight/Drop	р	N/A							Well Tag #	<u>BNW 198</u>	3	
	Depth (ft)	Water Level	WE	ELL CON				S T	Blows/ 6"	Graphic Symbol		DESCF	RIPTION		
				Bentonite c	hips 73 t	o 85 feet									
	- 80 - 80 -										RQD=	massive to bedded, very lig ately strong (R3) to strong (f 69%; calcite cemented; high I joints.	e <b>t Group</b> ht gray (5Y 8/ R4); medium ly effervescer	1) to very light g grained SANDS nt; closely to mo	ray (N8), rONE; derately
ŀ	- 85	1	8888881								<b>.</b> .				
NWWELL-B 20200367H001.GPJ BORING.GDT 5/15/23	- - - - - - - - - 95										Well c Groun 67.1 fe	terminated at 85 feet ompleted at 72.5 feet on 1 dwater measured at 66.7 f eet on 2/11/22. stainless steel sample ch	feet after drill	-	
)01.GF								-							
)367HC															
20200	Sa		er Type (S 2" OD Sn	ST): plit Spoon Sa	mnler (9	:PT\		No Rec	nverv		N/	- Moisture		Logged by:	MJP
-L-B		_		olit Spoon Sa			_	Ring Sa	-		ν. Σ	Water Level (1/12/22)		Approved by:	
WWEI		_	Grab San						Tube S	ample	Ţ	Water Level (1/12/22) Water Level at time of drilli	ing (ATD)	Approved by.	
ź		<u> </u>	J. J.S. Odl				Ĕ.	Shoby		Sinhio	_				

1	N	associatec		Geologi	c & M	onitoring W	ell Con	Sheet
4	5	earth sciences		oject Number		Well Numbe EB-6W	er	
Proioc	xt Name					Location		1 of 6 King County, WA
		op of Well Casing) 827.87	(Surveyed	d)			levation (ft)	<u>825.95</u>
		Elevation ~706		SI 150CC (So		Date Start		2/2/22,2/4/22
	g/Equip ner We	eight/Drop N/A	vices / 13		Shic)	Hole Diam Well Tag #	( )	8":0-120', 7": 120-130' BNY 895
Depth (ft)	<u>e</u>		TION	L <i>S</i> Blows/ 6"	Graphic Symbol			RIPTION
- - - 5		Above ground monum bollards Concrete 0 to 2 feet Medium bentonite chi 33 feet				abundant organics; m <u>3 inches of forest duff</u> Weathe Moist to very moist, bi medium SAND; fining	n (7.5YR), si assive (SM). f stripped price red Vashon rown (7.5YR) upwards; we fashon Rece grayish brown L, some silt;	or to drilling.  Recessional Outwash  silty, gravelly to very gravelly, fine to
-				-		No recovery 7 to 10 fe	eet; pushed th	nrough formation.
- 10 - - -		4-inch I.D. Sch 40 PV with threaded connect to 113.3 feet		-				
- 15						Becomes very moist.	faat: nuchad	through formation
								U
		18-inch centralizer at	23 feet	- - - - - -		Moist, grayish brown, some silt; abundant o baked/pulverized from	obbles: fractu	e sandy, fine to coarse GRAVEL, ired gravel; faintly stratified; GM).
S		Type (ST):						
	-	2" OD Split Spoon Sampler (SP		No Recovery		M - Moisture ▽		Logged by: MJP
		3" OD Split Spoon Sampler (D &	& M)	Ring Sample		$\overline{\underline{\nabla}}$ Water Level (		Approved by: JHS
	<b>B</b>	Grab Sample	""" <sub>"""</sub>	Shelby Tube S	Sample		t time of drilli	ng (ATD)

٢	2		sociatec		Geolog	ic & M	Ionito	ring Well Con	structio	on Log		
$\triangleleft$	2		th sciences		oject Number 200367H001			Well Number EB-6W		Sheet 2 of 6		
Projec	t Nam	e e	Cumberland Pro	operty	-1)			Location	King Cou	inty, WA		
Water	Level	Elevatio	on ~706	7 (Surveyed				Surface Elevation (ft) Date Start/Finish	<u>825.95</u> 2/2/22,2/4	4/ <u>22</u> , 7": 120-13(		
Drilling		pment eight/Dro	op N/A	ervices / T	SI 150CC (S	ionic)		Hole Diameter (in) Well Tag #	<u>8":0-120'</u> BNY 895		)'	
	1 1		-r <u>,, .</u>			0-			<u>DINI 035</u>			
Depth (ft)	Water Level				Blows/ 6"	Graphic Symbol						
	Vate	W	/ELL CONSTRU	CTION	S B	S G		DESCR	RIPTION			
			Medium bentonite c 33 feet	hips 2 to								
-					-		No recov	very 26 to 30 feet; pushed	through form	ation.		
-					-							
-					-							
-												
- 30			4-inch I.D. Sch 40 F					Vashon Ice C	ontact Depo	 sits		
-			with threaded conne to 113.3 feet	ections -1.9	-		Moist (b GRAVE	aked), grayish brown (10YI scattered to abundant co	R), silty, sand	ly, fine to coarse ive: nonplastic n	e natrix;	
							clast sup clasts (C	ported; faintly stratified; su GM).	ibrounded pro	olate, oblate, and	d bladed	
Ē												
-	8				-		1					
-					-673							
0.5												
- 35			Bentonite grout 33 t	to 106 feet			,					
-					+-							
-					-		No room	$r_{\rm cm}$ 27 to 40 foot				
								very 37 to 40 feet.				
-					-							
- 40					_		,					
							,					
-					+							
-			18-inch centralizer a	-1 40 61	_		,					
			18-inch centralizer a	al 43 ieel	.000							
							Highly p	ulverized from drilling. Seve on consistent with large col	eral large frac	tured cobbles in	n core,	
- 45								in conclotent manaage cox	55100.			
67/01/												
					1							
							Slightly i	noist to moist (baked), gray ne to coarse GRAVEL, sor	yish brown (1	0YR), fine to co	arse	
29-							matrix c	last supported: abundant c	obbles highly	v fractured/pulve	erized a	
							lot of dri	ll chatter consistent with lai oblate, and bladed clasts; n	rge cobbles a	nd boulders; su	brounded	
S S	ample	r Type (	ST):									
9 4		2" OD S	Split Spoon Sampler (S	SPT)	No Recovery			Moisture		Logged by:	MJP	
	<u> </u>	3" OD S	Split Spoon Sampler (E	D & M)	Ring Sample		_	Water Level (3/9/22)	,			
	Ċ	Grab Sa	ample	"""" <sub>"""</sub>	Shelby Tube	Sample	Ţ	Nater Level at time of drilling	ng (ATD)			

	1	$\gtrsim$		sociatec		Geo	logi	c & M	lonitor	ng Well Con	structior	n Log	
	K	2		rth sciences corporatec		roject Nun 2003671			V	Vell Number EB-6W		Sheet 3 of 6	
	oject			Cumberland Pro	operty	d)				Location	King Count 825.95	y, WA	
Wa	ater L	eve	Elevation	on ~706	7 (Surveye	-				Surface Elevation (ft) Date Start/Finish	2/2/22 2/4/2	22	
			ipment eight/Dr		ervices / T	<u>SI 150C</u>	:C (Sc	onic)		Hole Diameter (in) Well Tag #	8":0-120', 7 BNY 895	<u>": 120-130</u>	)'
			5	<u> </u>				0-			<u>DIT 000</u>		
enth	(E)	Water Level					Blows/ 6"	Graphic Symbol					
	נ	Vatei	N	VELL CONSTRU	CTION	S	Blo	Syg		DESCF	RIPTION		
		>									-		
				Bentonite grout 33 t	o 106 feet				No recover	y 49 to 50 feet.			
-									1				
-						-			l				
								3.3.	1				
						<b>6</b> 12			I				
-						-		3,3,	1				
- 5	5					_			I				
				4-inch I.D. Sch 40 F with threaded conne				Ŏ	1				
-				to 113.3 feet					I				
-						-			Verv moist	gravish brown (10YR)	medium to coar	se verv sandv	/ fine to
								•	coarse GR	, grayish brown (10YR), AVEL to very gravelly, n intly bedded (GP/SP).	nedium to coarse	e SAND; occa	sional
								••••••••••••••••••••••••••••••••••••••	0000100,10				
-						-			I				
- 6	0					_		<u> </u>					
									Moist (bake coarse GR	ed), grayish brown (10Y AVEL; abundant cobble	R), silty, fine to o s; cohesive non	coarse sandy, plastic matrix;	fine to clast
-						-			supported;	pulverized; drill chatter	consistent with l	arge cobbles (	(GM).
-						-			l				
								3.3.					
-				18-inch centralizer a	at 63 feet				l				
-						-		<b>3</b> .3.	1				
-6	5								<u> </u>				
	5								Very moist	, grayish brown (10YR), t; bedded (SP).	gravelly, fine to	coarse SANE	), trace
-						-				, boulou (er ).			
_						_							
-						enez.							
-						-							
- 7													
7 – ۲	0			Bentonite grout 33 t	o 106 feet				Grades to	very gravelly and some s	silt (SP-SM).		
5/15/						-							
GDT													
RING													
J BO						-		° ° • • •		ry moist, grayish brown			
01.GP						-				GRAVEL, some fracture ratified; pulverized (GP-		Some SIL, SC	allereu
67H00								• • • • •					
NWWELL-B 20200367H001.GPJ BORING.GDT 5/15/23	Sar	- ·	er Type (										
- B 2	l	-		Split Spoon Sampler (S		No Rec			M - Mo			ogged by:	MJP
WELL	l	_		Split Spoon Sampler (E	D & M)	Ring Sa			_	ater Level (3/9/22)		pproved by:	JHS
ŇN	Ċ	3	Grab Sa	ample	·····	Shelby	Tube S	ample	¥ ₩a	ater Level at time of drilli	ng (ATD)		

	1	2	> a s	sociatec		Geo	logi	c & M	onit	oring Well Con Well Number	struction	on Log	
	$\triangleleft$	1		rth sciences corporated		oject Nur 00367	nber H001			Well Number EB-6W		Sheet 4 of 6	
	Project	Nam	ne	Cumberland Pro	perty		1001			Location	King Cou		
			op of W Elevatio	ell Casing) <u>827.87</u>	(Surveyed	l)				Surface Elevation (ft) Date Start/Finish	<u>825.95</u> 2/2/22.2/	-	
	Drilling	/Equi	pment	Holt S	ervices / TS	SI 1500	C (Sc	onic)		Hole Diameter (in)	<u>8":0-120'</u>	' <u>, 7": 120-130</u>	)'
-	Hamme		eight/Dr	op <u>N/A</u>						Well Tag #	<u>BNY 895</u>		
	Depth (ft)	Water Level	W	/ELL CONSTRU	CTION	S T	Blows/ 6"	Graphic Symbol		DESCF	RIPTION		
-	- 80			4-inch I.D. Sch 40 F with threaded conne to 113.3 feet					Brown	(7.5YR) weathering at 82 fe	eet.		
-	- 85 -			18-inch centralizer a	at 83 feet	-			nonpla hard di volcani ~10%	Vashon Lodgen baked), dark grayish brown andy, fine to coarse GRAVE stic matrix; clast supported; illing; glacially consolidated; c/sandstone/volcaniclastic, other subrounded to rounde	thinly beddec provenance ~20% undiffe d (dropstone)	t to bedded; drille is ~70% local rentiated intrusiv clasts (GM).	r notes re rocks,
-	- 90			Bentonite grout 33 t	o 106 feet	-				ns thin beds of brownish yel n sand.	low (10YR) a	nd black (7.5YR	) fine to
NWWELL-B 20200367H001.GPJ BORING.GDT 5/15/23	- 95			4-inch I.D. Sch 40 F with threaded conne to 113.3 feet		-			coarse	o very moist, dark grayish b GRAVEL, some clay, scatt e; cohesive; low to moderat C).	ered cobbles;	faintly bedded to	)
12003	Sa	mple	r Type (	(ST):									
·B 20	[		2" OD S	Split Spoon Sampler (S	SPT)	No Red	covery			- Moisture		Logged by:	MJP
VELL-	[		3" OD S	Split Spoon Sampler (E	D & M)	Ring S	ample		∑ ■	Water Level (3/9/22)		Approved by:	JHS
MMN		Ċ	Grab Sa	ample	""""""""""""""""""""""""""""""""""""""	Shelby	Tube S	ample	Ţ	Water Level at time of drill	ing (ATD)		

9	R	> a		ociatec		Geo	ologi	c & M	onit	oring Well Con Well Number	structi	on Log		
<	K			rporalec		Project NL 0200367				Well Number EB-6W		Sheet 5 of 6		
		ame	C	umberland Pro	perty					Location	King Cou	unty, WA		
		(Top of vel Eleva	Well	Casing) <u>827.87</u> ~706	' (Survey	/ed)				Surface Elevation (ft) Date Start/Finish	<u>825.95</u> 2/2/22,2/	-		
Drilli	ing/E	quipmer	t	Holt Se	ervices /	TSI 150	CC (Se	onic)		Hole Diameter (in)	<u>8":0-120</u>	<u>', 7": 120-130</u>	)'	
Ham		Weight/	Drop	N/A			1			Well Tag #	<u>BNY 895</u>	5		
Depth	(ff)						Blows/ 6"	Graphic Symbol						
		Vale	WEI	LL CONSTRU	CTION	5		b S		DESCF	RIPTION			
			_											
-		L		8-inch centralizer a	at 103 feet	-								
-105		H				-								
-				/ledium bentonite cl 10 feet	hips 106 to	-			Moist ( GRAV	(baked), dark grayish brown EL; abundant cobbles; cohes	(10YR), silty sive nonplast	r, sandy, fine to c tic matrix (GM).	oarse	
-110 -			• 1	2/20 silica sand 11 eet	0 to 124	-			Very n GRAV plastic	noist, brown to yellowish brov EL, some sand to sandy; ab ity matrix; gaps in matrix; sul	wn (10YR), c undant cobbl brounded gra	clayey, silty, fine : les; cohesive mo avel; faintly bedde	to coarse derate ed (GC).	
- -115 - -	Ţ		: s	inch I.D. Sch 40 F creen 0.030-inch s 13.3 to 123.3 feet		-			Partial	ly pulverized with large cobbl	les.			
120 - 120						- m			coarse	noist to wet, brown (10YR) to sandy, fine to coarse GRAV s; faintly bedded; cohesive/s	/EL, to some	e silt, trace clay; s	n to scattered	
NWWELL-B 20200367H001.GPJ BORING.GDT 5/15/23				hreaded end cap 1 23.7 feet	23.3 to	-			clayey suban	mottled dark gray (GLEY1) a , fine to coarse SAND, trace gular chunks of weathered s	to some silt; andstone; re oup Bedroc	nonstratified wit golith (SC).	ĥ	
03671		<u>  88888</u>	81	\.				:	110011,		orvo, uark yra		Gratery	
2020	Sam	pler Typ 2" OF		): t Spoon Sampler (S	PT)	No Re	ecovery		М	- Moisture		Logged by:	MJP	
LL-B				t Spoon Sampler (C			Sample		Σ.	Water Level (3/9/22)				
MWE	Ш	Grab				-	y Tube S	Sample	Ţ	Water Level at time of drilli	Approved by: JHS			
ź	凹	0.40					,							

	6	3	as	sociatec		Ge	ol	ogi	c & M	lonito	Well Number	struction Log
		1		rth sciences corporatec		roject Ni 20036					Well Number EB-6W	Sheet 6 of 6
	Project			Cumberland Pr	opertv		/ 1	1001			Location	King County, WA
			Fop of W I Elevati	vell Casing) <u>827.8</u>	7 (Surveye	d)					Surface Elevation (ft) Date Start/Finish	825.95
	Drilling/	/Equ	ipment	Holt S	Services / T	SI 150	)C	C (Sc	onic)		Hole Diameter (in)	2/2/22,2/4/22 8":0-120', 7": 120-130'
	Hamme		/eight/Dr	op <u>N/A</u>							Well Tag #	BNY 895
	Depth (ft)	Water Level						Blows/ 6"	Graphic Symbol			
		Wat	N	/ELL CONSTRU	ICTION		S T	Ξ	0.00			RIPTION
	-	Ţ		Medium bentonite 130 feet	chips 124 to	-				strong (f	R3), fine grained SANDST	ONE/SILTSTONE.
	-130 - -		88888			-				Well cor Ground	erminated at 130 feet npleted at 123.3 feet on vater encountered at 126 water measured at 119.4	2/4/22. 5.7 feet after 80 minutes ATD. feet on 2/7/22 and at 117.6 feet on
	- -135					-						
	-					-						
	-					-						
	-140					_						
	-					-						
	-					-						
/23	-145					-						
WWWELL-B 20200367H001.GPJ BORING.GDT 5/15/23	-					-						
G.GD <sup>1</sup>	-					-						
ORIN	_											
3PJ B												
H001.C	-					-						
10367I		mol	er Type (	(ST)·								
3 2020	5a	_		ເຣາງ: Split Spoon Sampler (	SPT)	No R	eco	overy		М-	Moisture	Logged by: MJP
ELL-B		_		Split Spoon Sampler (	-	Ring		-			Water Level (3/9/22)	Approved by: JHS
NWWE		3	Grab Sa					Tube S	ample	_	Water Level at time of drilli	

٢	2	as	sociatec		Geologi	c & M	onit	oring Well Con	struction Log
Ł	5		rth sciences corporated		oject Number 00367H001			Well Number EB-7W	Sheet 1 of 10
Projec	ct Nam	е	Cumberland Pro	opertv				Location	King County, WA
Eleva	tion (To	op of W	/ell Casing) <u>847.2</u>	7 (Surveyed	d)			Surface Elevation (ft)	844.90
	r Level g/Equi	Elevati oment		de Drilling	/ TSI 150CC	(Sonic)		Date Start/Finish Hole Diameter (in)	<u>12/13/21,12/17/21</u> 8":0-235', 7":235-245'
		eight/Dr		j		()		Well Tag #	BNW 199
ح	svel					이 일.			
Depth (ft)	er Le				S Blows/ 6"	Graphic Symbol			
	Water Level	V	VELL CONSTRU	CTION	S m	00		DESCF	RIPTION
			1					<b>.</b>	
		) 🕅	Above ground monu bollards	ument with			Moist	to verv moist, dark brown, sil	soil / Fill ty, gravelly, fine to coarse SAND;
-		3 🕅	Concrete 0 to 1.5 fe	eet	-		to drilli	na.	ets) (SM). ~2 to 3 inches stripped prior
-					-		Layer	of charcoal at 2 feet. Weathered Vashor	n Ice Contact Deposits
							Moist	to verv moist. oxidized liaht v	ellowish brown, silty, fine to medium intly stratified; roots and scattered
							charco	bal in upper foot (SM).	intry stratilied, foots and scattered
-					-				
- 5								Vashon Ice C	Contact Deposits
5			Bentonite chips and cave-in 1.5 to 120 f			0 0	abund	ant cobbles; fining upwards;	n, sandy, fine to coarse GRAVEL; massive bed; increased silt from
-					-67%		pulveri	zation; some silt (GP-GM).	
						$\circ$			
-					-				
_						၀ို ၀ 🖣 🖡			
- 10			4-inch I.D. Sch 40 I	PVC riser					
-			-2.4 to 210.3 feet		-		Drill a	ction consistent with boulders	s at 11 feet
						000	Dillia		
							.,		
-					-		to coal	rse GRAVEL; trace to some	yish brown, sandy to very sandy, fine silt; occasional cobbles; faintly bedded
						8.8.	(GW).		
- 15					+1	8.8.			
_					-67%				
					Ŭ	8.8.			
-									
-						0000			
-					-	0,0,			
- 20					_		Moist	to very moist, gravish brown	to gray, silty, sandy, fine to coarse
27/0							GRAV	EL, scattered cobbles; mass	ive (GM).
					]		Vore	point arouich brown to list.	slive brown elight eilt to eilt a medium
- C					-		to coa	rse sandy, fine to coarse GR	blive brown, slight silt to silty, medium AVEL; scattered cobbles; faintly
						000	bedde	d; broken gravel (GP-GM).	
n C									
					-103				
						$\circ$			
S S		r Type (						Maintum	
n L	-		Split Spoon Sampler (S		No Recovery		M ⊻	- Moisture	Logged by: MJP
			Split Spoon Sampler (I	(אאַר) (אַגע	Ring Sample	Na	Ţ	Water Level (2/11/22)	Approved by: JHS
	<b>6</b> (	Grab Sa	ample		Shelby Tube S	Sample	<u> </u>	Water Level at time of drilli	ng (AID)

٢		associatec	_	Geologi	c & M	Ionito	ring Well Con	struction Log	
$\triangleleft$	2	earth sciences		oject Number			Well Number EB-7W	Sheet 2 of 10	
	t Name	Cumberland Pro	perty				Location	King County, WA	
	ion (Top Level E		(Surveyed	<u>(k</u>			Surface Elevation (ft) Date Start/Finish	<u>844.90</u> 12/13/21 12/17/21	
Drilling	g/Equipr	nent Casca	de Drilling	/ TSI 150CC	(Sonic)	)	Hole Diameter (in)	12/13/21,12/17/21 8":0-235', 7":235-245'	
Hamm		ht/Drop <u>N/A</u>					Well Tag #	<u>BNW 199</u>	
Depth (ft)	Water Level			ls/	Graphic Symbol				
Del Del	ater I			S Blows/ 6"	Syn		55005		
	Ň	WELL CONSTRU	CTION	T			DESCH	RIPTION	
		Bentonite chips and	native		° . ° <b>. 1</b>				
-		cave-in 1.5 to 120 f	eet	-	៰៓៰				
F						Moist to	very moist, grayish brown	to light olive brown, silty, sandy s; faintly bedded (GM).	y, fine to
+				-		coarse c	INAVEL, Scallered Cobbles		
						,			
[									
- 30		4-inch I.D. Sch 40 F	VC riser	+-1					
		-2.4 to 210.3 feet		m					
-				+-1					
-				4					
F									
- 35						some silt	: massive (SP-SM).	grayish brown, fine to medium s	
						Very moi silt: scatt	st, grayish brown, sandy, f ered cobbles: massive bec	fine to coarse GRAVEL, trace t d to faintly bedded (GW-GM/GI	to some P-GM).
T I					8,8,		,,		
-				-					
					8,8,				
						-			
-				-	0°0°				
- 40						-			
						Moist to	verv moist. gravish brown.	silty, sandy, fine to coarse GR	AVEL:
F				-		scattered	l cobbles; massive (GM).	<b>,</b> , <b>,</b> ,	,
-				-	<b>     </b>   <b> </b>				
Ē.									
-				- <b>m</b> z					
- 45					Ĭ				
3		Bentonite chips and cave-in 1.5 to 120 for							
				-					
					0000	Very moi	st, grayish brown, very sar ; occasional cobbles; faint	ndy, fine to coarse GRAVEL, tr	race to
					$\mathcal{D}$			<i>ay source (OVV)</i> .	
				-	0.000	ľ			
				-					
					0.00				
31	- ·	Гуре (ST):							
-	<u> </u>	OD Split Spoon Sampler (S	SPT)	No Recovery			Moisture	Logged by:	MJP
>		OD Split Spoon Sampler (E	0 & M)	Ring Sample		_	Vater Level (2/11/22)	Approved by:	JHS
	🔁 Gi	ab Sample	""""""""""""""""""""""""""""""""""""""	Shelby Tube S	ample	Σ.	Vater Level at time of drilli	ng (ATD)	

	1	N	associa	3. A.C.	Ge	ologi	c & M	onit	oring Well Co	nstru	uction Log	
	$\triangleleft$	1	earth scier Incorpora		Project I 2020036				Well Number EB-7W		Sheet 3 of 10	
		Name	Cumberl	and Property					Location	King	g County, WA	
		on (Top o Level Ele	of Well Casing)	<u>847.27 (Surv</u> ~724	eyed)				Surface Elevation (f Date Start/Finish		.90 13/21,12/17/21	
D	rilling	/Equipme	ent	Cascade Dril	ling / TS	150CC	(Sonic)		Hole Diameter (in)	<u>8":0</u>	<u>-235', 7":235-245</u>	5'
Н	amm	er Weigh	it/Drop	N/A		11			Well Tag #	BNV	N 199	
	t,	evel				/s	je pi					
	Depth (ft)	Water Level				0 Blows/ 6"	Graphic Symbol					
		Wat	WELL CON	ISTRUCTION		S Ш Т			DES	CRIPTI	ON	
-			4-inch I D	. Sch 40 PVC rise				As ahr	ove; grades to silty (GW-0	-M)		
			-2.4 to 210	0.3 feet			000	710 000		2111).		
						]	8,8,					
F						-		Very n	noist, grayish brown, silty ional cobbles; mix of sphe	sandy, fir	ne to coarse GRAVEL	
								occasi matrix	ional cobbles; mix of sphe ; gaps in matrix (GM).	rical prola	ate clasts in cohesive r	non-plastic
						and the second se						
F						+						
-	55				-	4						
							$\mathcal{D}$					
Ī						1	0000					
-						-		Moist	to very moist aravish bro	wn silty s	sandy to very sandy fi	ne to
								coarse (GM/C	to very moist, grayish bro GRAVEL; lenses of clea בא	ner sand	and gravel; highly stra	tified
Ē						1	ంం		<i>)</i> .			
-						-						
	60				_							
	00							Very n silt; sli	noist, grayish brown, fine ght silt coating on gravels	to coarse ; open fra	GRAVEL, some sand mework (GP-GM).	l, some
-						+		,	5 5 5	, ,	()	
						-1992	•°••					
F						+		Very n	noist, grayish brown, silty	sandy, fir	ne to coarse GRAVEL	; massive;
-						-		scatte	red cobbles (GM).			
	65			chips and native 5 to 120 feet	-	1						
-				5 10 120 1661		-						
-						-		Very n	noist, grayish brown to da coarse GRAVEL, trace to	rk grayish	brown, sandy to very	sandy,
								fine to (GW-0	coarse GRAVEL, trace to GM).	o some sil	lt; bedded; scattered c	obbles
							0°0°	,	,			
_	70			Sch 40 PVC rise	r -	1						
7101			-2.4 to 210	0.3 feet		-	ŎĵŎĵ					
							b d d					
2-10						1						
						-	P 0 0					
							P D U gogo					
	6		/pe (ST):									
ZUZI		- · ·	/pe (ST). DD Split Spoon S	Sampler (SPT)	No I	Recovery		М	- Moisture		Logged by:	MJP
			DD Split Spoon S	,		g Sample		$\overline{\Sigma}$	Water Level (2/11/22)		Approved by:	
	-	_	ib Sample	· · · · · · · · · · · · · · · · · · ·	-	lby Tube S	Sample	Ţ	Water Level at time of c	Irillina (AT		
<u> </u>	l	<u> </u>									- /	

ſ	A	associatec earth sciences	Geologic & M Project Number	Onitoring Well Construction Log Well Number Sheet
<		incorporatec	20200367H001	EB-7W 4 of 10
	tion (1	op of Well Casing) 847.27 (Surve	eyed)	Location King County, WA Surface Elevation (ft) 844.90
		I Elevation ~724 ipment Cascade Drill	ing / TSI 150CC (Sonic)	Date Start/Finish         12/13/21,12/17/21           Hole Diameter (in)         8":0-235', 7":235-245'
Hamn		eight/Drop <u>N/A</u>		Well Tag # BNW 199
Depth (ft)	Water Level	WELL CONSTRUCTION	Blows/ 6"Symbol	DESCRIPTION
-				Moist to very moist, dark grayish brown, very gravelly, silty, fine to coarse SAND, non-cohesive; non-plastic matrix (SM). Very moist, dark gray to very dark gray, very sandy, fine GRAVEL, trace silt, some coarse gravel; bedded (GW).
- 80				End of drilling 12/13/21; start drilling 12/14/21. Moist to very moist, grayish brown, silty, sandy, fine to coarse GRAVEL; massive/unsorted; cohesive non-plastic matrix (GM).
-				Very moist, grayish brown, sandy, fine to coarse GRAVEL, trace to some silt; scattered cobbles (GW/GP). Moist to very moist, grayish brown, silty, sandy to very sandy, fine to coarse GRAVEL; cohesive non-plastic matrix; thin lenses (2 to 3 inches
- 85 - -		Bentonite chips and native cave-in 1.5 to 120 feet		thick) of cleaner gravel, some silt to silty; stratified (GP-GM).
90 - -		4-inch I.D. Sch 40 PVC riser -2.4 to 210.3 feet		Moist to very moist (baked), grayish brown, fine to coarse GRAVEL, some sand, trace silt; abundant cobbles; bedded (GP). Very moist, grayish brown, silty, sandy, fine to coarse GRAVEL, trace silt; scattered cobbles; roughly bedded (GM).
	Gamolo	er Type (ST):		Very moist, grayish brown to light olive brown, sandy, fine to coarse GRAVEL, some silt; abundant cobbles; bedded (GP-GM).
		er Type (ST): 2" OD Split Spoon Sampler (SPT)	No Recovery	M - Moisture Logged by: MJP
		3" OD Split Spoon Sampler (D & M)	Ring Sample	✓   Water Level (2/11/22)   Approved by: JHS
	Ċ	Grab Sample	Shelby Tube Sample	Water Level at time of drilling (ATD)

1	2	> a s	sociatec		Geo	logi	c & M	onite	oring Well Con	struction	on Log	
$\triangleleft$	2		th sciences orporatec		oject Nun 003671				Well Number EB-7W		Sheet 5 of 10	
	on (T	e op of We Elevatio							Location Surface Elevation (ft) Date Start/Finish	King Cou 844.90	inty, WA	
Drilling	/Equi	pment	Casca	de Drilling	/ TSI 15	50CC	(Sonic)		Hole Diameter (in)	<u>8":0-235'</u>	, <u>12/17/21</u> , 7":235-245'	
Hamm		eight/Dro	op <u>N/A</u>						Well Tag #	<u>BNW 199</u>		
Depth (ft)	Water Level	W	ELL CONSTRU	CTION	S T	Blows/ 6"	Graphic Symbol		DESCR	RIPTION		
								Becom	es very sandy, GRAVEL, so	me silt.		
_					-			occasio	oist, grayish brown, silty, sa onal cobbles; cohesive non-p	plastic matrix	(GM).	
								Very m GRAVI	oist, grayish brown to light o EL, some silt to silty; scattere	live brown, s ed cobbles; b	andy, fine to coa edded (GP-GM)	irse
-								Moist t cohesi	o very moist, grayish brown, /e non-plastic matrix (GM).	silty, sandy,	fine to coarse G	RAVEL,
- -105 -			Bentonite chips and cave-in 1.5 to 120 f		-63			to sand gravel)	o very moist, grayish brown, ly, trace to some silt; fining u open framework (GP). notes heavy caving.	fine to coars upwards sequ	e GRAVEL, som Jence (fine over	ne sand coarse
-					-			Pulveri	zed cobbles at 107 feet.			
-					-			occasio	baked), brown (10YR), silty, nal cobbles; unsorted; diam stic (GM).	sandy, fine t ict; matrix su	o coarse GRAVE pported; cohesiv	 EL; /e
-110 - -			4-inch I.D. Sch 40 F -2.4 to 210.3 feet	PVC riser				scatter	oist, grayish brown to brown ed abundant cobbles; bedde sticity matrix; clasts support	d fining upwa	, fine to coarse ( ards sequences,	GRAVEL; cohesive
- -115 -								trace b	o very moist (baked), brown, oulders; abundant cobbles; upported; bedded; fabric in n	cohesive low-	fine to coarse G plasticity matrix;	RAVEL, appears
-					-			Driller	notes spinning boulders/cobl	bles during d	rive.	
-								Very m	oist to wet, light olive brown; ; occasional cobbles (GM).	, silty, sandy,	fine to coarse G	RAVEL;
NWWELL-B 20200367H001.GPJ BORING.GDT 5/15/23	Ţ				-				overy, debris from caving.	-14-	fine to open a	
367H00									oist to wet, light olive brown; ; occasional cobbles (GM).	, siity, sandy,	The to coarse G	NAVEL;
50200 Sa	m	r Type (\$ 2" OD S	ST): plit Spoon Sampler (S	SPT) П	No Rec	:OVerv		М.	Moisture		Logged by:	MJP
ELL-B	m		plit Spoon Sampler (		Ring Sa			∑	Water Level (2/11/22)		Approved by:	
NWWE	-	Grab Sa		·	Shelby		ample	Ţ	Water Level at time of drilli	ng (ATD)		

		$\sim$	as	sociat	ec		Geo	logi	c & M	lonit	oring Well Con Well Number	structi	on Log	
	$\triangleleft$	1		rth scien			ject Nur 00367				Well Number EB-7W		Sheet 6 of 10	
	Project	Nan	ne	Cumberla	and Proper		50507	1001			Location	King Col	unty, WA	
	Elevatio	on (T	op of W	/ell Casing)	847.27 (Si	irveyed	)				Surface Elevation (ft)	844.90	•	
	Vvater Drilling		l Elevati ipment	ion	<u>~724</u> Cascade [	Drillina /	TSI 1	50CC	(Sonic)		Date Start/Finish Hole Diameter (in)	<u>12/13/21</u> 8":0-235	l,12/17/21 5, 7":235-245	·
			eight/Dr	rop	N/A	j.			<u> </u>		Well Tag #	BNW 19	9	
	-C	vel						_	o <u>e</u>					
	Depth (ft)	Water Level						Blows/ 6"	Graphic Symbol					
		Wate	V	VELL CON	ISTRUCTIO	ON	S	B	00		DESCF	RIPTION		
		-	881 188			1001	'							
				207 feet	entonite chips	120 to				trace t	ght olive brown, medium to o o some silt; occasional cobb	coarse sandy les; well sorte	ed; bedded; wate	FRAVEL, r bearing
	-						1			(GP).				
	-						-		0 0 0 0 0 0					
									0 0 0 0 0 0					
	-						1							
	-						-		o`o`o o o¶≬	Verv n	noist to wet, light olive brown	. sandv. fine	to coarse GRAV	EL:
	-130								၀ို ၀	abund	ant cobbles, some silt; increated bearing (GP-GM).	ased silt from	n pulverization; be	edded;
	150			4-inch I.D. -2.4 to 210	Sch 40 PVC r .3 feet	iser			°₀°∎∎					
	-						-		°_°●╹ °°°°¢	Wet, g	rayish brown to light olive br	own, mediun	n to coarse sandy	y, fine to
	-	¥									GRAVEL, scattered lenses bearing (GP).	of cobbles, t	race to some silt;	; bedded;
		-					-							
	-						-102		0000					
	-						-							
	-135													
	-						-							
									0 0 0 c					
	-						-							
	-													
									0 0 0 C	Becon	nes some silt to silty (GP-GM	1)		
	-140						-			20000		.).		
	-						-							
										to coa	to very moist, grayish brown rse SAND; unsorted; diamict			
	-						1			wasta	ge deposit (?) (SM).			
	-						-							
											noist to wet, light olive brown GRAVEL, trace to some sil			
	-145			Medium be	entonite chips	120 to	-				bearing (GP-GM).	i, bedded, oc		,
15/23	-			207 feet										
DT 5/										As abo	ove, some silt to silty; faintly	bedded (GW	-GM).	
NG.G	-						1		8.8.					
BORII	-						4							
GPJ									8,8,					
H001.							1							
NWWELL-B 20200367H001.GPJ BORING.GDT 5/15/23			er Type											
2020		-		(ST): Split Spoon Sa	ampler (SPT)	Π	No Red	coverv		М	- Moisture		Logged by:	MJP
:LL-B					ampler (D & M	)	Ring S			$\overline{\nabla}$	Water Level (2/11/22)		Approved by:	
IWWE	_	-	Grab S	• •	, (	′ <b>L</b>	-	Tube S	ample	Ţ	Water Level at time of drilli	ing (ATD)		
~	L	-				Ľ	,							

	6	2	> a s	sociatec		Geo	logi	c & M	lonit	oring Well Con	structio	on Log	
		1	] ea	rth sciences		oject Num	nber			Well Number EB-7W		Sheet 7 of 10	
-	Project	Nar	ne	Cumberland Pro		000071	1001			Location	King Cou		
	Elevatio	on (1	Top of W	Vell Casing) <u>847.2</u>	7 (Surveyed	d)(t				Surface Elevation (ft)	<u>844.90</u>		
			l Elevat		ade Drilling	/ TSI 15	50CC	(Sonic)		Date Start/Finish Hole Diameter (in)	<u>12/13/21</u> , 8":0-235'	, <u>12/17/21</u> , 7":235-245	,
			/eight/D		j			( = = = = )		Well Tag #	BNW 199		
	-c	vel					_	<u>o 9</u> .					
	Depth (ft)	er Le					Blows/ 6"	Graphic Symbol					
		Water Level	V	VELL CONSTRU	CTION	S	B	00		DESCF	RIPTION		
		-	881 188					o o ol l					
				4-inch I.D. Sch 40 I -2.4 to 210.3 feet	PVC riser				wet, g bedde	gray to brown, gravelly, fine to d; water-bearing (SW-SM).	o coarse SAN	D, some silt, fai	ntly
	-					-			<b>N4</b> . 1 . 4	Vashon Lo	odgement Ti		
	-					-			Moist, subroi	gray (GLEY 1 to 5Y), very si unded to rounded spherical g	ity, gravelly, f ravel; low- to	medium-plastici	lict; ty matrix;
									lodger	nent till; sharp contact; strong	gly effervesce	ent (SM).	
	-					1							
-	-					-				Pre-Vash	on Deposits		
	455								Very n	noist, gray (GLEY1), fine SA contact; rip-up gray to dark g	ND. some silt	. trace gravel: be	edded;
	-155								Sharp	contact, np-up gray to dark g	ay diamot of		01 -0101).
-	-					-			Wet	lark gray, fine to coarse SAN	ID some fine	aravel trace silf	
	_								bedde	d, water-bearing (SW).		graver, trace en	•,
	-					-							
-	-					-							
ŀ	-160					-			Very n (SP-S	noist to wet, gray, fine SAND	, some silt, tra	ace gravel; bedo	led
-	-					-			`	noist to wet, dark gray, fine to	o coarse SAN	D some fine ar	avel to
									gravel	ly; bedded (SP).		ib, some nite gr	
	-					Ц			Dadia	aarban aga: 49 202 47 90			
-	-					-673				<b>carbon age: 18,202 - 17,89</b> gray, medium to coarse SANI	•	•	; bedded
	-								(SP).				
	-165			Medium bentonite o	chips 120 to				Very r	noist to wet, gray, silty, fine S	SAND; beddeo	d (SM).	
	-			207 feet		-							
									Very r	noist to wet, gray, medium S،	AND, trace si	lt; bedded (SP).	
	-					1						. ,	
-	-												
	_												
									Very n (SM).	noist to wet, gray, fine to med	dium SAND, s	some silt to silty;	bedded
	-170			4-inch I.D. Sch 40 I	PVC riser				、 ,	noist to wet, gray, fine to med	dium SAND, s	some silt; bedde	d
15/23	-			-2.4 to 210.3 feet					(SP-S	,			
DT 5/									Very n (SM).	noist, gray, silty, fine SAND, t	trace gravel; f	faintly cross-bed	lded
NG.G	-					-							
30RII	-								An at	ovo como aroval: contain- d-	on atoma ? (	SM)	
GPJ									ms a00	ove, some gravel; contains dr	op stones? (3	5101).	
1001.6	-					1			<u> </u>	- <b>1</b>			
03671			881 88	(CT):					Grade	s to some silt to silty; massiv	e; mildly effer	vescent (SM).	
NWWELL-B 20200367H001.GPJ BORING.GDT 5/15/23	Sa [	imple 1	er Type 2" OD :	(ST): Split Spoon Sampler (\$	spt) П	No Rec	overv		М	- Moisture		Logged by:	MJP
LL-B	L [			Split Spoon Sampler (I		Ring Sa			Ţ	Water Level (2/11/22)		Approved by:	
<b>WWE</b>	_	с С	Grab S		-~~··/ <b>I</b>	Shelby		ample	Ţ	Water Level at time of drilli	ng (ATD)		5.10
ź		1	2.400		Ľ.	energy					···ə (· ····)		

	R	a s	sociatec		Geo	logi	c & M	lonitoring	Well Con	structio	on Log	
		ea	rth sciences corporatec		oject Nun 00367				Number -7W		Sheet 8 of 10	
	ject Na		Cumberland Pro					Loca	ation ace Elevation (ft)	King Cou 844.90		
Wa	ater Lev	el Elevati uipment	on ~724	de Drilling		5000	(Sonic)	Date	e Start/Finish Diameter (in)	12/13/21	12/17/21 7":235-245	
		Veight/Dr				50000			Tag #	<u>8 0-235</u> BNW 199		
Depth	(ft) Water Level	v	VELL CONSTRU	CTION	S T	Blows/ 6"	Graphic Symbol		DESCF	RIPTION		
-					-			Moist, gray to da coarse sand; oc bladed clasts; no effervescent (SN	ark gray (5Y), silty, casional cobbles; s on-plastic matrix; d ៧).	gravelly, fine ubrounded, o iamicton; mas	to medium SAN blate to spherica s wastage (?);	D, trace al, and
-180 - -	0				-		· I. I · I. I	Recovered but on notes lots of heat	<b>Pre-Vash</b> drill string water bla ave below 180 feet	<b>non Deposits</b> sted out samp	ble during retriev	/al; driller
-					-				elly, medium to coa			
-18:	5		Medium bentonite c	hips 120 to	_			Wet, gray, sand cobbles; bedded	y, fine to coarse G I (GP-GM).	RAVEL, some	e silt to silty; abu	ndant
- - - -19(	0		207 feet 4-inch I.D. Sch 40 F		-			Wet, gray, grave occasional cobb	ally to very gravelly, les; bedded (SP/S)	, medium to co W).	oarse SAND, tra	ace silt;
-			-2.4 to 210.3 feet		-			Recovered 192 of casing by drill	to 195 feet on clea ler; recovered sanc	n out run but ly material loo	accidentally flus ks like above (S	hed out P/SW?)
91 <mark>1</mark>	5				-				elly to very gravelly, les; bedded (SP/S)		oarse SAND, tra	ace silt;
DT 5/1					1			Wet, gray to oliv some silt; scatte	e gray, fine to coar ered cobbles; bedde	rse GRAVEL, ed (GP).	some sand, trac	ce to
NWWELL-B 20200367H001,GPJ BORING,GDT 5/15/23					-			Wet, gray, very very sandy, fine	gravelly, medium to GRAVEL, trace sil	o coarse SANI it; bedded (SP	D, trace silt, ran to GP).	ging to
202005	Samp m	ler Type										MIR
-L-B	Ш П		Split Spoon Sampler (S Split Spoon Sampler (E		No Rec Ring Sa			M - Moistur ⊻ Water L	e evel (2/11/22)		Logged by: Approved by:	MJP IHS
AWWE	E B	Grab Sa			Shelby		ample		evel (2/11/22) evel at time of drilli			5110

	1	2	> a s	sociatec		Geo	logi	c & M	lonito	Dring Well Con Well Number	struction Log
	$\triangleleft$	1		th sciences		oject Nun 003671	nber -I001			Well Number EB-7W	Sheet 9 of 10
P	roject	Nan	ne	Cumberland Pro		000071	1001			Location	King County, WA
E	levatio	on (T	op of W	ell Casing) <u>847.27</u>	7 (Surveyed	d) (k				Surface Elevation (ft)	844.90
			l Elevatio	n <u>∼724</u> Casca	de Drilling	/ TSI 1	50CC	(Sonic)	)	Date Start/Finish Hole Diameter (in)	<u>12/13/21,12/17/21</u> 8":0-235', 7":235-245'
Н	amme	er Ŵ	eight/Dro	op <u>N/A</u>				· · · ·		Well Tag #	BNW 199
	_	vel						.9 -0			
	Depth (ft)	Water Level					Blows/ 6"	Graphic Symbol			
		Vate	W	ELL CONSTRU	CTION	S	ā	ତିର୍ତି		DESCF	RIPTION
		_				1					
-						-			Wet, gr	ay (5Y), fine to coarse GRA	AVEL, some sand to sandy, trace silt;
									abunda	nt cobbles; bedded (GP).	
								° ° ° ° ¢	:		
-						-			:		
								0 0 0 C	:		
									:		
-20	05							0000	:		
									:		
								0 0 0 C			
-			88 88			-			1). san	dv to verv sandv. fine to coa	greenish gray (between 5Y and GLEY arse GRAVEL, trace to some silt,
		-						0000	scatter	ed cobbles: bedded: subrou	nded to subangular; prolate and bladed late/spherical clasts; fluvial deposits
Ē		l		#2/12 Silica sand 20 feet	07 to 221				(GP).	<i>2</i> 1	
-		ŀ		Teel		-		0000	:		
		ļ							:		
-2	10							0 0 0 0 0 c	:		
-		ľ				-			:		
			目					0 0 0 0	:		
-						1					
-			目			-		0 0 0 0 0 0 0	:		
						-			:		
-		ŀ									
-2	15	ľ		4-inch I.D. Sch 40 F		_		0000	:		
			目	screen 0.010-inch s					:		
-		ľ		210.3 to 220.3 feet					:		
-			目			-					
		ľ									
Ē			目:			1			:		
F			目:			-6%		0 0 0 C	:		
_						H					
2 ۳	20			Threaded end cap 2	20 3 to					ay, gravelly, medium to coa	arse SAND, trace to some silt; bedded
5/15/23			888888	220.7 feet	20.0 10	-			(SP).		
								0 0 0	Wet, da	ark gray, sandy, coarse GR/	AVEL, trace silt; cobbles; gravel bed
NG.G						1			(GP).		
BORI								0,0,0	\M/ot	any analysis your may all the	modium to coorse SAND trace to
I LAS									some s	ay, gravelly to very gravelly, ilt, bedded (SP).	, medium to coarse SAND, trace to
1001.0											
NWWELL-B 20200367H001.GPJ BORING.GDT						ĊЪ					
2020(	Sa ſ	- ·	er Type (						N 4	Moisturo	Loggod by MID
В	L	Ш П		iplit Spoon Sampler (S			-		м- 	Moisture	Logged by: MJP
WEL	Ĺ	∐ ี่ ี		plit Spoon Sampler ([	J&IM) ∎	Ring Sa			_	Water Level (2/11/22)	Approved by: JHS
N N		3	Grab Sa	Imple	·····	Shelby	rube S	ample	<u>+</u>	Water Level at time of drilli	ing (ATD)

ſ	2		iatec		Geo	logi	c & N	Ionitor	ring Well Con	structio		
$\triangleleft$	2		oralec		oject Nur 00367				Well Number EB-7W		Sheet 10 of 10	
Project		ne <u>Cum</u> Top of Well Cas	berland Pro	perty	1)				Location Surface Elevation (ft)	King Cou 844.90	nty, WA	
Water	Leve	l Elevation	~724	7 (Surveyed			<u> </u>		Date Start/Finish	12/13/21	12/17/21	
Drilling Hamm		ipment eight/Drop	<u>Casca</u> N/A	de Drilling	/ TSI 1	50CC	(Sonic)	)	Hole Diameter (in) Well Tag #	<u>8":0-235'</u> BNW 199	, <u>7":235-245</u>	·
Depth (ft)	Water Level	WELL	CONSTRU	CTION	S T	Blows/ 6"	Graphic Symbol		DESCF	RIPTION		
-								Wet, gray scattered	r, sandy to very sandy, fin cobbles; large cobbles ne	e to coarse G ear lower cont	RAVEL, some s act (GP-GM).	ilt;
-230 - -		Medi 240 t	um bentonite c feet	hips 221 to	-			some silt,	nish gray (GLEY1), coars with large cobbles and s les and boulders; difficult	mall boulders;	; drilling action c	onsistent
- -235 -					-			and abun stratified; Very mois	st, grean, silty, sandy, fine t	on-plastic to lo d silt due to p to coarse GRA	ow-plasticity mat oulverization (GN AVEL; abundant	rix; /). : cobbles;
-								diamict w	ith coarse sand lenses; st	tratified; low-p	olasticity matrix (	<u>G</u> M).
-240 - - -		Nativ	re cave-in 240 f	to 245 feet	-			Wet, gray trace to so	r (GLEY1), gravelly to ven ome silt; scattered cobble	y gravelly, me s (SP-SM).	dium to coarse s	SAND,
					-			coal(?) (G fine to coa <b>Bariogde</b> Well com Groundw at 132.0 f on 12/23/ 240 volt c	(?) - Wet, gray (2.5Y), sa bundant cobbles; layer (fe SP-GM). Very moist, gray arse SAND; thinly beddec arriagted (302)45 feet pleted at 220 feet on 12 ater encountered at 125 feet after drilling on 12/1 21, at 122.5 feet on 1/1 grundfos 30 pump installed on 4/	(2.5Y to 10Y) , low-plasticit 2/17/21. 5 feet ATD. 0 7/21, 125.3 2/22, and at	R) mottled, silty, y; small weather Groundwater m feet after deve	easured
		er Type (ST): 2" OD Split Sp 3" OD Split Sp Grab Sample			No Rec Ring S Shelby		ample	∑ w	loisture /ater Level (2/11/22) /ater Level at time of drilli		Logged by: Approved by:	MJP JHS

L	7	a s ea	sociatec rth sciences	Pi	Geolog roject Number	jic & N	Ionitoring Well Co Well Number	onstruction Log	
$\leq$	1	- 18. M I	corporatec		200367H00	1	EB-8W	1 of 7	
Project Elevatio			Cumberland Pro Vell Casing) <u>848.66</u>	<u>perty</u> 6 (Surveye	d)		Location Surface Elevation (	( )	
Water I Drilling		l Elevati		ervices / T	SI 150CC (\$	Sonic)	Date Start/Finish Hole Diameter (in)	<u>1/26/22,1/31/22</u> <u>9":0-90', 8": 90-140', 7</u>	7"-140-150
Hamme	er W	/eight/Dr	rop <u>N/A</u>				Well Tag #	<u>BNY 893</u>	<u> </u>
Depth (ft)	Water Level	_ v	VELL CONSTRUC	CTION	L S Blows/	o Graphic Symbol	DES	SCRIPTION	
-			Above ground monu bollards Concrete 0 to 2 feet		-		Moist, brown (7.5YR), silty, me GRAVEL; abundant cobbles; s supported (GM).	Recessional Outwash edium to coarse sandy, fine to coar scattered rootlets; fractured gravel	rse ; clast
-					-		Driller notes rocky conditions. Moist, grayish brown to gray (1 GRAVEL, trace to some silt; al faintly stratified (GP-GM).	10YR), fine to coarse sandy, fine to bundant cobbles; subrounded clas	o coarse its;
- 5			Bentonite chips 2 to	29 feet				own to dark grayish brown (10YR) to very sandy, fine to coarse GRA aintly stratified (SW to GW).	
-					- - 1995 -				
- 10 -			4-inch I.D. Sch 40 F with threaded conne -2.95 to 130.8 feet		-	۰°۰° ما ۲ `_	No recovery 10 to 12 feet.		
-					-		Very moist to wet (from added coarse GRAVEL, trace to som (GP).	water), grayish brown, sandy, fine e silt; scattered cobbles; faintly str	e to ratified
- 15					-		medium to coarse sandy, fine	own to dark grayish brown (10YR) to coarse GRAVEL, some fracture obbles; faintly stratified; one weath	ed gravel;
-					- 8%, - - -			own, gravelly, fine to coarse SANE	), trace
- 20			18-inch centralizer a	at 20 feet	-		to some silt (SP-SM).		
			Bentonite chips 2 to	29 feet			Moist (baked), dark grayish bro coarse GRAVEL, some silt; fra pulverization; sharp contact wi Moist to very moist, yellowish b	Ice Contact Deposits own, medium to coarse sandy, fine actured clasts; increased silt from th above (GP-GM). brown to brown (10YR), fine sandy p graded; clast supported; massive	y, fine to
Sa Sa	- ·	er Type							
	_		Split Spoon Sampler (S		No Recovery		M - Moisture $\overline{\Sigma}$ Water Level (2/11/22)	Logged by:	MJP
	_		Split Spoon Sampler (E	0&M) ∎	Ring Sample				JHS
	5	Grab Sa	ample	·····	Shelby Tube	Sample	Water Level at time of	drilling (ATD)	

ſ	N		sociatec		Geo	logi	c & N	Ionitoring Well Co	nstruction Log
$\triangleleft$	2		th sciences orporated		roject Num 2003671			Well Number EB-8W	Sheet 2 of 7
	ion (To	e op of We Elevatio		operty 6 (Surveye	d)		1	Location Surface Elevation (ft) Date Start/Finish	King County, WA 845.61 1/26/22,1/31/22
Drilling	g/Equip ier We		Holt S	ervices / T	SI 150C	C (Sc	onic)	Hole Diameter (in) Well Tag #	<u>9":0-90', 8": 90-140', 7":140-</u> 150 BNY 893
Depth (ft)	Water Level	W	ELL CONSTRU	CTION	S T	Blows/ 6"	Graphic Symbol	DESC	CRIPTION
-			4-inch I.D. Sch 40 F with threaded conne -2.95 to 130.8 feet					Very moist, brown (10YR) to ligh sandy, fine to coarse GRAVEL, t stratified; one weathered sandsto	t olive brown (2.5Y), fine to coarse race silt; scattered cobbles; faintly one clast (GP).
- 30								Very moist, brown to light olive b GRAVEL; clast supported (GM).	rown, silty, sandy, fine to coarse
-					-			Very moist, brown to light olive b coarse GRAVEL to gravelly, fine cobbles; bedded (GP to SP).	rown, fine to coarse sandy, fine to to coarse SAND, trace silt; occasional
- 35 - -			Bentonite grout 29 t	o 124 feet					
- 40			18-inch centralizer a	at 40 feet	-			Moist to very moist, grayish brow silt; abundant cobbles; fractured faintly bedded (GP-GM).	n, sandy, fine to coarse GRAVEL, some gravel; increased silt from pulverization;
-								Very moist, light olive brown (2.5 to some silt; scattered cobbles; b	Y), sandy, fine to coarse GRAVEL, trace bedded (GP).
1 2/12/23			Bentonite grout 29 t	o 124 feet	-			Very moist, light olive brown, fine sandy, trace to some silt; abunda	e to coarse GRAVEL, some sand to ant cobbles; bedded (GP).
NWWELL-B 20200367H001.GPJ BORING.GDT 5/15/23							ۅؚۜڡؚۜڡ	No recovery 47 to 50 feet, bould	er stuck in bit at 47 feet.
NWWELL-B 2020036			plit Spoon Sampler (S plit Spoon Sampler (E		No Rec Ring Sa Shelby	ample	ample	M - Moisture ∑ Water Level (2/11/22) ∑ Water Level at time of dr	Logged by: MJP Approved by: JHS illing (ATD)

1	2	1	sociatec		Geo	ologi	c & N	Monitoring Well Construction Log           Well Number         Sheet			
$\triangleleft$	2		th sciences orporated		roject Nu 200367			Well Number EB-8W		Sheet 3 of 7	
Project		ne Top of W/	Cumberland Pro	operty 6 (Surveye	d)			Location Surface Elevatio		County, WA	
Water	Leve	el Elevatio	on ~719	、 <b>、</b>	,	00.75		Date Start/Finish	<u>1/26/</u>	22.1/31/22	
		ipment /eight/Dro		ervices / T	SI 150	CC (Se	onic)	Hole Diameter (i Well Tag #	n) <u>9":0-9</u> <u>BNY</u>	<u>90', 8": 90-140',</u> 893	<u>7":140-1</u> 5( 
, th	Water Level					ohic					
Depth (ft)	ater L					Blows/ 6"	Graphic Symbol				
	Ma	W	ELL CONSTRU	CTION	2	r		D	ESCRIPTIC	N	
-			4-inch I.D. Sch 40 F with threaded conne -2.95 to 130.8 feet		-			No recovery 50 to 52 feet, b	oulder stuck bu	it then pushed throug	gh.
-					-		0 0 0	Moist (baked), grayish brow	n. sandv. fine t	o coarse GRAVEL. s	ome silt
								(GP). Pulverized boulder at 52 fee		, -	
- 55					-			Very moist to wet, light olive SAND, trace silt; abundant o	brown, very gr cobbles; beddeo	avelly, medium to co d (SP).	 arse
					-6	n			<i>.</i>		
					ľ			Very moist, dark grayish bro occasional cobbles; bedded	wn, fine gravel (SP).	ly, fine to coarse SAN	ND;
-					-						
-					+	_					
					_						
								Moist to very moist, grayish SAND; unsorted; diamictor;	brown, silty, fin noncohesive n	e gravelly, fine to co natrix; matrix support	arse ed (SM).
- 60			18-inch centralizer a	at 60 feet	-			Moist to very moist, gravish	brown, very gra		. ,
-					-			trace to some silt; faintly stra	atified (SP).		
Ē.					]			Very moist, grayish brown to fine to coarse GRAVEL, trac	o light olive brov ce to some silt;	wn, medium to coars faintly bedded; scatt	e sandy, ered
-					+	-		cobbles; subrounded gravel	(GP-GM).	<b>,</b> ,	
-					_		000				
- 65			Bentonite grout 29 t	o 124 feet		"3		Becomes very moist to wet.			
-					-						
								Very moist, light olive brown	sandy fine to		me silt
-					-		000	within beds of medium to co pulverized/some fractured g	oarse SAND; so	attered cobbles; part	ially
-					-			partonzoa/como nactaroa g			
70											
- 70			4-inch I.D. Sch 40 F with threaded conne								
<u>-</u>			-2.95 to 130.8 feet		-						
N N N											
					1	_					
5					M	n		Very moist to wet, light olive to sandy, trace silt; subround	brown, fine to ded to rounded	coarse GRAVEL, so gravel; bedded (GP)	me sand
							0000				
Sa	- ·	er Type (	,		NI. 5					1	
	Ш m		Split Spoon Sampler (S			ecovery		M - Moisture $\overline{\underline{\nabla}}$ Water Level (2/11/2	2)	Logged by:	MJP
			Split Spoon Sampler (E	ע ועו) ∎ ⊡	-	Sample	ample	-		Approved by:	1H2
AN I	Ċ	Grab Sa	ample	····	Shelb	y Tube S	ample	✓ Water Level at time	or arilling (ATD	"	

6	2	associatec		Geol	ogi	<u>c &amp; N</u>	onitoring Well Well Number	Con	struction Log
$\triangleleft$	Z	earth sciences		oject Numl 00367H			Well Number EB-8W		Sheet 4 of 7
Water L Drilling/	on (1 Leve /Equ	Top of Well Casing) <u>848.66 (S</u> el Elevation ~719	urveyed	-	C (Sc	onic)	Location Surface Elevati Date Start/Finis Hole Diameter Well Tag #	sh	King County, WA 845.61 1/26/22,1/31/22 9":0-90', 8": 90-140', 7":14
Depth (ft)	Water Level	WELL CONSTRUCTI	ON	S T	Blows/ 6"	Graphic Symbol	DESCRIPTION		BNY 893
- 80 - 80 85		18-inch centralizer at 80 Bentonite grout 29 to 12					Very moist, grayish brown to coarse GRAVEL, trace s faintly bedded; mix of clast (GP).	to light c silt; abur shapes	blive brown, sandy to very sandy, find ndant cobbles; subrounded gravel; (bladed, prolate, oblate, few equate)
- 90 - - - 95 - - - - - - - - - - - - - - - - - - -		4-inch I.D. Sch 40 PVC with threaded connection -2.95 to 130.8 feet					sand to sandy, trace silf; a from drilling; increased fine Drill action recovery, and p boulders.	and core vish brov bundant es from ulveriza	barrel at 90 feet. vn, fine to coarse GRAVEL, some cobbles; highly pulverized and altere
-	<b>⊻</b>	or Type (ST):		-			coarse GRAVEL, trace to s (GP).	some sil	t; abundant cobbles; faintly bedded d on nearby spring/stratigraphic
		er Type (ST): 2" OD Split Spoon Sampler (SPT) 3" OD Split Spoon Sampler (D & N Grab Sample	_	No Reco Ring Sar Shelby T	nple	ample	M - Moisture ♀ Water Level (2/11/ ♥ Water Level at tim	,	Logged by: MJP Approved by: JHS ng (ATD)

	$\sim$	as	sociatec		Geolo	ogic &	<u>Monit</u>	oring Well Con Well Number	struction Log
$\triangleleft$	2		th sciences orporatec		roject Numbe 200367H0			Well Number EB-8W	Sheet 5 of 7
	ion (T	ne Γop of We	n ~719	<u>S (Surveye</u>				Location Surface Elevation (ft) Date Start/Finish	King County, WA 845.61 1/26/22,1/31/22
		iipment /eight/Dro		ervices / T	SI 150CC	(Sonic)		Hole Diameter (in) Well Tag #	<u>9":0-90', 8": 90-140', 7":140-</u> 150 BNY 893
Depth (ft)	Water Level	W	ELL CONSTRU	CTION	S	6" 6" Graphic Svmbol		DESC	RIPTION
-			18-inch centralizer a	at 100 feet	-		Moist, gravel plastic	Vashon L mottled grayish brown (10Y y, fine to medium SAND; no ity to nonplastic; weathered	odgement Till R) and brown (7.5YR), silty,very nstratified; matrix supported; low (SM).
-					-		SAND suppo bladec	; unsorted; diamicton; low pl rted scattered cobbles; subro	, silty, very gravelly, fine to medium asticity to nonplastic matrix; matrix ounded to rounded gravel; equate to anic) provenance is 50-60%; SM).
-105 - -			Bentonite grout 29 t	o 124 feet	-				
-110 - -			4-inch I.D. Sch 40 F with threaded conne -2.95 to 130.8 feet				Moist	<b>Pre-Vasi</b> to very moist, dark gray (GLI silt; thin silty interbeds (1 to	<b>non Deposits</b> EY1), gravelly, fine to coarse SAND, 2 inches thick); stratified (SP-SM).
-115 - - - - - - - - - - - - - - - - - -			18-inch centralizer a	at 120 feet			Very n gravel	noist, dark gray (GLEY1), fin trace to some silt; faintly be	e to coarse SAND, trace to some edded (SP).
NWWELL-B 20200387H001.GPJ BORING.GDT 5/15/23					-		Conta	ins fragments of weathered	sandstone at 123 feet.
WWELL-B 202003	ample		plit Spoon Sampler (S plit Spoon Sampler (E		No Recov Ring Sam Shelby Tu	2	M ⊻ ⊈	- Moisture Water Level (2/11/22) Water Level at time of drill	Logged by: MJP Approved by: JHS ing (ATD)

1	2	> a s	sociatec		Geol	ogic	: & N	lonitor	ing Well Con	struction Log
$\triangleleft$	T	e ar	th sciences		oject Numb 200367H				Well Number EB-8W	Sheet 6 of 7
Project Elevatic Water L Drilling/ Hamme	on (Te ₋evel ′Equi	op of W Elevatio pment	on <u>~719</u> <u>Holt S</u>	operty 6 (Surveyed ervices / TS		C (So	nic)		Location Surface Elevation (ft) Date Start/Finish Hole Diameter (in) Well Tag #	King County, WA 845.61 1/26/22,1/31/22 9":0-90', 8": 90-140', 7":140 BNY 893
Depth (ft)	Water Level	W	/ELL CONSTRU	CTION	S T	Blows/ 6"	Graphic Symbol		DESCF	RIPTION
-	∑ ▼		Bentonite chips (hydrogen to 127 feet 10/20 filter sand 12 feet		-					AND, trace silt; bedded (SP). ID, trace to some gravel; bedded (SF
- -130 -					-			l	d but sample missing, as sh brown, medium to co scattered cobbles; bedde	below (GP-GM). arse sandy, fine to coarse GRAVEL, ed (GP-GM).
- - <b>1</b> 35 -			4-inch I.D. Sch 40 F screen 0.020-inch s 130.8 to 140.8 feet	slot width	- - 			Wet, dark silt; bedde	gray, medium to coarse d (SP).	SAND, some gravel to gravelly, trace
- - -140 -			Threaded end cap 1 141.2 feet	140.8 to				silt to silty Moist, gra	(SP-SM).  y to dark gray (5Y), silty,	gravelly, fine to coarse SAND, some
- - -145			Bentonite chips 141 feet	to 150			• <b>  • •   •</b>	Slightly we gray (N6), fractured	olcanics and ~10% local Puget Gr eathered, thinly bedded, I	upported; moderate plasticity; ~90% <u>Tp sandstone (GM).</u> oup Bedrock ight olive, gray (5Y6/1) to medium li <u>c</u> weak (R2), SANDSTONE, highly
			Split Spoon Sampler (S Split Spoon Sampler (E		No Reco Ring Sar Shelby T	nple	imple	⊻ w	loisture ater Level (2/11/22) ater Level at time of drilli	Logged by: MJP Approved by: JHS ng (ATD)

ſ	2	associated		Geo	ologi	c & N	Nonitoring Well Con Well Number	struction Log
$\triangleleft$	2	earth sciences		Project Nu 200367	mber H001		Well Number EB-8W	Sheet 7 of 7
Project	t Nai		Property				Location	King County, WA
Water	Leve	el Elevation ~7 <sup>-</sup>					Surface Elevation (ft) Date Start/Finish	<u>845.61</u> 1/26/22,1/31/22
		uipment <u>Ho</u> Veight/Drop N/A	I <u>t Services / T</u> A	<u>SI 1500</u>	<u>CC (So</u>	onic)	Hole Diameter (in) Well Tag #	<u>9":0-90', 8": 90-140', 7":140-1</u> 5 BNY 893
_	vel					20		
Depth (ft)	Water Level				Blows/ 6"	Graphic Symbol		
	Wat	WELL CONST	RUCTION	S		00	DESCF	RIPTION
Ļ				-			Boring terminated at 150 feet Well completed at 140.8 feet on	1/31/22.
							Groundwater encountered at 98	and 127 feet ATD. Groundwater Groundwater present above till at
-							100 feet; water level inferred from drill rods after 110 to 120 foot dri	m moisture content in bags. Water in
-				-				
-				-				
-155				_				
				-				
				-				
				-				
460								
-160								
				1				
				-				
				-				
-165				-				
				-				
				-				
				-				
170				-				
				-				
				-				
				-				
	ampl M	ler Type (ST): 2" OD Split Spoon Sample	er (SPT)	No Re	covery		M - Moisture	Logged by: MJP
		3" OD Split Spoon Sample			Sample		$\overline{\Sigma}$ Water Level (2/11/22)	Approved by: JHS
	6	Grab Sample	**************************************		/ Tube S	ample	Water Level at time of drilli	

٢	2		associatec		Geologic & Mor				Nonitoring Well Construction Log Well Number Sheet			
$\triangleleft$	2		earth sciences ncorporatec		oject Nu 00367				Well Number EB-9W	Sheet 1 of 8		
Projec			Cumberland Pro	operty					Location	King County, WA		
Elevat Water				2 (Surveyed	d)(b				Surface Elevation (ft) Date Start/Finish	807.77		
Drilling	g/Eq	uipme	ent Holt S	ervices / TS	SI 150	CC (So	onic)		Hole Diameter (in)	<u>4/25/22,4/28/22</u> 8": 0-190', 7": 190-197	1	
Hamm	1	<u> </u>	t/Drop <u>N/A</u>						Well Tag #	BPK 505		
Ę.	Water Level					s/	bol bol					
Depth (ft)	ter					Blows/ 6"	Graphic Symbol					
	Wa		WELL CONSTRU	CTION	T				DESCF	RIPTION		
_	-		Stand up steel mon	umont with			· <u>`x' /y</u> ·· <u>x'' /y</u> ··		Topsoi	I - 6 inches		
			lid and 3 bollards						-	ssional Outwash		
		$\mathbb{N}$	Stick up casing -2.6 Plastic compression	6 to 0 feet well cap				Yellow	ish brown (10YR4/2), gravel <sup>-</sup> s stratified (SP).	lly, fine to coarse SAND, trace	silt;	
-		$\mathbb{N}$	Concrete 0 to 3 feet	•	-			аррса				
								Single	fine sand interbed with some	e silt at 3 feet.		
-					-							
- 5					_@	2						
			Bentonite chips 3 to	0 177 feet								
F					1							
-					-							
-					-							
-					-							
10												
- 10			4-inch I.D. PVC cas threaded connection		T		0 0 0 0	Grayis (GP).	h brown (10YR3/2), sandy, (	GRAVEL, trace cobbles, trace	silt	
-			179.2 feet	15 0 10	-			(01).				
					]							
-					-							
								Cobble	e and pulverized rock 14 to 1	5 feet.		
- 15						Ż	0 0 0 0 0 0	Moist,	grayish brown, sandy, GRA	VEL, trace silt, trace cobbles (C	GP).	
_												
-					-							
_					-							
-					1							
- 20					+	_		Clickth	, baland antira run, bat analy	ah ta ayanarata majatura		
57/01/0								Signt	y baked entire run; hot enoug	yn to evaporate moisture.		
_					1		<b>Î</b>	Moist t	to slightly moist, grayish brow	vn, gravelly, SAND to sandy, small areas of increased silt; c	ontont	
					-			near p	ulverized cobbles; appears s	tratified (SP/GP).	ontent	
					19 19	2	•					
					1							
/HU01.GPJ					+							
SUDZ S	amp	ler Ty	rpe (ST):									
		2" C	DD Split Spoon Sampler (S	SPT)	No Re	covery			- Moisture	Logged by:	JG	
		3" C	DD Split Spoon Sampler ([	D & M)	Ring S	Sample		$\overline{\Delta}$	Water Level (5/13/22)	Approved by:	CJK	
	¢	Gra	b Sample	""""""""""""""""""""""""""""""""""""""	Shelby	/ Tube S	ample	Ţ	Water Level at time of drilli	ng (ATD)		

ſ		associatec		Geologi	c & N	Monitoring Well Construction Log Well Number Sheet				
K	5	earth sciences		oject Number 00367H001			Well Number EB-9W		Sheet 2 of 8	
Projec	t Name	Cumberland Pro	perty				Location	King Cou	unty, WA	
Water	Level E	levation	(Surveyed	,			Surface Elevation (ft) Date Start/Finish	<u>807.77</u> 4/25/22.4	4/28/22	
	g/Equipr	nent <u>Holt Se</u> ht/Drop N/A	ervices / TS	SI 150CC (Se	onic)		Hole Diameter (in) Well Tag #	8": 0-190 BPK 505	4/28/22 0', 7": 190-197	71
								DFR JUL	)	
Depth (ft)	Water Level			0 Blows/ 6"	Graphic Symbol					
	Vater	WELL CONSTRUC	CTION	s a	n S G		DESCR			
	>									
		Bentonite chips 3 to	177 feet			I				
F				-						
-				-						
				<u>e</u> re	5					
						l				
F				-	Ĭ	Cobble	with pulverized rock flour 29	9 to 30 feet.		
- 30		4-inch I.D. PVC cas	ing with				Vashon Ice C	ontact Den	neite	
		threaded connection 179.2 feet				Slightly	/ moist, gray, silty, sandy, GF rs; baked and altered due to	RAVEL; abu	ndant cobbles; pos tured (angular) in	ssible silty
		179.2 1001				matrix	(GM).	anning, nao	anda (angalar) in	onty
F				-		l				
-				-	Ň					
						l				
ſ										
- 35				-62		Becom	es sandy, GRAVEL; some s	ilt due to abi	undant cored cobb	les and
-					၀ို၀	boulde	rs (GP-ĠM).			
F						l				
-				-						
					៰៓៰៓	Only ~ cobble	7 feet of recovery from 30 to s.	40 feet. Slo	ow progress due to	)
- 40				-						
-				-						
Ī						l				
-				-	၀ ို ၀ 🍧					
Ļ										
						freque	/ moist (baked), gray, silty (d nt angular gravel fragments (	ue to drilling (GM).	j), sandy, GRAVEL	-,
- 45		Bentonite chips 3 to	177 feet			Moist,	grayish brown, GRAVEL, so	me sand, tra	ace silt (GP).	
				-		:				
				-		:				
				-		subrou	orangish brown, sandy, GRA nded (GP).		silt; gravel is round	ded to
						Becom	les moist to very moist (less	baked).		
S	- ·	Гуре (ST):								
	-	OD Split Spoon Sampler (S		No Recovery			- Moisture		00 ,	JG
		OD Split Spoon Sampler (D	0&M) ∎	Ring Sample		∑ ▼	Water Level (5/13/22)	/ <b>.</b> :	Approved by:	CJK
	🖻 Gi	rab Sample		Shelby Tube S	Sample	Ţ	Water Level at time of drilling	ng (ATD)		

٢	$\gg$	associatec		Geolo	gic & I	Ionitoring Well Construction Log			
$\triangleleft$	5	earth sciences	Pro	ject Number		Well Number EB-9W	Sheet 3 of 8		
Projec Elevati	t Name	<u>Cumberland Pro</u> of Well Casing) 810.42				Location Surface Elevation (	King County, WA		
Water	Level El	evation		,	(0	Date Start/Finish	4/25/22.4/28/22		
	g/Equipm her Weigl	hent <u>HOILS</u> ht/Drop <u>N/A</u>	ervices / TS	115000	(Sonic)	Hole Diameter (in) Well Tag #	8": 0-190', 7": 190-197' BPK 505		
Depth (ft)	Water Level	WELL CONSTRUC	CTION	L S Blows/	6" Graphic Symbol	DESCRIPTION			
-		4-inch I.D. PVC cas threaded connection 179.2 feet	ing with is 0 to	-		Slightly moist, silty, fine SAND cobbles and rock flour); baked Moist, grayish brown, GRAVEI			
- 55				- - - - - -		Moist, brown, medium to coars Slightly moist, gray, sandy, GR cobbles (GP-GM).	se SAND, some gravel (SP). RAVEL, some silt; frequent pulverized		
- 60 - -						Cobbles surrounded by rock flow	sistent with boulder as previous hole. our. own, GRAVEL, some sand, trace silt (GP).		
- 65		Bentonite chips 3 to	177 feet			Becomes brown with frequent	rock chips (dacite boulder) 60 to 65 feet. / progress.		
-						¢ Very moist, grayish brown, sar	ndy, GRAVEL (GP).		
-						$\mathbf{P}_{\mathbf{c}}$ Grades to some silt (GP-GM).			
- 70		4-inch I.D. PVC cas threaded connectior		+		Pulverized cobbles 70 to 71 fe	et.		
- - - -		179.2 feet		- - -		Moist, brownish gray, silty, san supported (GM).	ndy, GRAVEL; occasional cobbles; clast		
	Ţ					Moist, grayish brown, silty, gra matrix supported (GM).	velly, fine SAND, trace cobbles; unsorted;		
	_	Type (ST):	<u>—</u> —				· · · · · ·		
'	_	OD Split Spoon Sampler (S		No Recove	•	M - Moisture $\overline{\underline{\nabla}}$ Water Level (5/13/22)	Logged by: JG		
	-	OD Split Spoon Sampler (E ab Sample	v&™) ∏	Ring Samp Shelby Tub		<ul> <li>✓ Water Level (5/13/22)</li> <li>✓ Water Level at time of</li> </ul>			
	≝ Gr		14.		o Jample				

٢	A	> a s s o c i a t e c earth sciences	Geologic & Project Number	Monitoring Well Construction Log           Well Number         Sheet			
$\triangleleft$		incorporatec	20200367H001	EB-9W	4 of 8		
Projec Elevat	t Nam ion (To	e <u>Cumberland Property</u> op of Well Casing) <u>810.42 (Surve</u>	ved)	Location Surface Elevation (ft)	King County, WA 807.77		
	Level	Elevation	TSI 150CC (Sonic)	Date Start/Finish Hole Diameter (in)	<u>4/25/22,4/28/22</u> <u>8": 0-190', 7": 190-197'</u>		
		eight/Drop <u>N/A</u>		Well Tag #	BPK 505		
Depth (ft)	Water Level	WELL CONSTRUCTION	L C Blows/ 6" Symbolic	DESCR	RIPTION		
- - - 80 -	Ţ			Water in drill rods during removal o Wet, gravish brown, sandy, GRAVE some at 82 feet to trace at 90 feet (	f 80 to 100 foot sample run. EL, trace to some silt; silt grades from GP-GM).		
- - 85 - -		Bentonite chips 3 to 177 feet					
- 90 		4-inch I.D. PVC casing with threaded connections 0 to 179.2 feet			ace silt (GP).		
<u>è</u>		Type (ST):		¢			
5	-	2" OD Split Spoon Sampler (SPT)	No Recovery	M - Moisture	Logged by: JG		
		3" OD Split Spoon Sampler (D & M)	Ring Sample	∑_ Water Level (5/13/22)	Approved by: CJK		
	<u>ଟ</u> ୍ଟ (	Grab Sample	Shelby Tube Sample	Water Level at time of drilling	ng (ATD)		

	6	2	> a s	sociatec		Geologic & M Project Number				Monitoring Well Construction Log           Well Number         Sheet		
	$\triangleleft$	I	eat	rth sciences corporatec			umber 7H001			Well Number EB-9W	Sheet 5 of 8	
		on (T			perty 2 (Surveye	d)				Location Surface Elevation (ft) Date Start/Finish	King County, WA 807.77 4/25/22,4/28/22	
	Drilling	/Equ		Holt S	ervices / T	SI 150	CC (S	onic)		Hole Diameter (in) Well Tag #	8": 0-190', 7": 190-197' BPK 505	
	Depth (ft)	Water Level	V	VELL CONSTRU	CTION		Blows/ 6"	Graphic Symbol		DESCF	RIPTION	
-	- - - - - - - - - - - - - - - - - - -			Bentonite chips 3 to 4-inch I.D. PVC cas threaded connection 179.2 feet	ing with				(GP/GP-	GM). y, GRAVEL, trace sand, tr d (GP). y, GRAVEL, trace silt, trac bbles 114.5 to 115.5 feet, b some silt, some sand (G y, coarse sandy, GRAVEL		
WELL-B 20200367	[		3" OD 8	Split Spoon Sampler (S Split Spoon Sampler (E		Ring	ecovery Sample	0_0_0	⊻ v	Moisture Vater Level (5/13/22)	Logged by: JG Approved by: CJK	
Ň		Ċ,	Grab Sa	ample	1999au	Shelb	y Tube S	sample	Ψ. v	Vater Level at time of drilli	ng (ATD)	

ſ	2	as	sociatec		Geologic & Mon			lonite	Onitoring Well Construction Log           Well Number         Sheet		
4	D		rth sciences corporatec		oject Nur 200367	nber			Well Number EB-9W	Sheet 6 of 8	
Projec	ct Nar	ne	Cumberland Pro	operty					Location	King County, WA	
		Fop of W el Elevati	/ell Casing) <u>810.42</u>	<u>2 (Surveyea</u>	d) (t				Surface Elevation (ft) Date Start/Finish	807.77	
Drillin	g/Equ	ipment	Holt S	ervices / T	SI 1500	C (Sc	onic)		Hole Diameter (in)	<u>4/25/22,4/28/22</u> <u>8": 0-190', 7": 190-197'</u>	
Hamn	ner W	/eight/Dr	rop <u>N/A</u>				, 		Well Tag #	BPK 505	
ے ا	svel					-	.일 및				
(ft)	Water Level					Blows/ 6"	Graphic Symbol				
	Wate	V	VELL CONSTRU	CTION	S	В	00		DESCR	RIPTION	
_	_				'						
			Bentonite chips 3 to	0 1// feet				:			
F					-			:			
-					_						
								:			
-					-			:			
Ļ					_						
-130			4-inch I.D. PVC cas		_			:			
-			threaded connectior 179.2 feet	ns 0 to	_			:			
F					-		0000	:			
-					_			:			
								:			
-					-		၀ိ၀ိ၀				
-135					_			:			
								:			
F					-						
-					_		0 0 0 0 0 0 0	:			
								:			
Ē								Vorum	Vashon Lo	odgement Till silty, sandy, GRAVEL; strongly	
-					-			efferve	scent; unsorted; diamicton (	GM).	
								1			
-140											
-					-			Cored	cobble 141 to 142 feet.		
								Verv m	oist to wet gravish brown s	on Deposits andy GRAVEL to gravelly SAND	
-					-			trace to	some silt; washed (SP).	andy, GRAVEL to gravelly, SAND,	
-145			Bentonite chips 3 to	177 feet	_						
15/23											
DT 5/											
19-19					-			Very m	oist, dark gray, silty, fine SA	ND, trace gravel, trace medium to	
ORIN					_			coarse	sand; massive; mildly efferv	rescent (SM).	
PJ E											
001.G					-						
367H											
NWWELL-B 20200367H001.GPJ BORING.GDT 5/15/23		er Type (			–				••••		
8	Щ		Split Spoon Sampler (S		No Red	,			Moisture	Logged by: JG	
MELL	Щ		Split Spoon Sampler ([	D&M)	Ring S			⊻ ▼	Water Level (5/13/22)	Approved by: CJK	
ÂZ	Ċ	Grab Sa	ample		Shelby	Tube Sa	ample	Ţ	Water Level at time of drilling	ng (ATD)	

4	F	earth scie		Pro	oject Nun	nber	c & M	lonit	oring Well Con Well Number	Sheet
Project Elevatio		e <u>Cumber</u> p of Well Casing)	land Prope 810.42 (S	rty	00367H	H001			EB-9W Location Surface Elevation (ft)	7 of 8 King County, WA 807.77
Drilling	/Equip	Elevation ment ght/Drop	Holt Serv N/A		,	C (So	onic)		Date Start/Finish Hole Diameter (in) Well Tag #	4/25/22,4/28/22 8": 0-190', 7": 190-197' BPK 505
Depth (ft)	Water Level	WELL CO	NSTRUCTI	ON	S T	Blows/ 6"	Graphic Symbol		DESCF	RIPTION
- - - - - - - - - - - - - - - - - - -		threaded 179.2 fee	p. PVC casing to connections 0 t	to				Silty ir Strong Silty ir Silt 15 Very n SAND Very n coarse (SP).	terbeds (4 inches thick) at 1 reaction with hydrochloric a terbeds (8 inches thick) 156 7.5 to 158 feet. hoist to wet, grayish brown, trace silt (SP).	cid (strongly effervescent).
-		Bentonite		Teel	-				rayish brown, sandy, GRAV	EL, trace silt (?) (GP).
NWWELL-B 20200367H001.GPJ BORING.GDT 5/15/23			0. PVC casing t connections 0 t		-				noist to wet, brownish gray, s s (GP).	andy, GRAVEL, trace silt; frequent
NWWELLL-B 202003(	] 2 ] 3	Type (ST): " OD Split Spoon \$ " OD Split Spoon \$ Grab Sample		_	No Rec Ring Sa Shelby	-	ample	M ⊻ ⊈	- Moisture Water Level (5/13/22) Water Level at time of drilli	Logged by: JG Approved by: CJK ng (ATD)

٢	A	-	sociatec th sciences	D	Geo roject Nu		c & N	& Monitoring Well Construction Log     Well Number Sheet				
$\triangleleft$	D	inc	orporalec	202	200367	7H001		EB-9W		8 of 8		
Projec Elevat		e op of W	Cumberland Pro ell Casing) 810.42	operty 2 (Surveve	d)			Location Surface Elevation (	(t) <u>King (</u> t) 807.7	County, WA		
	Level	Elevatio	on	ervices / T		CC (Sc	onic)	Date Start/Finish Hole Diameter (in)	4/25/2	22,4/28/22 190', 7": 190-197'		
		eight/Dro	op <u>N/A</u>					Well Tag #	BPK			
Depth (ft)	Water Level					/s/	Graphic Symbol					
	Vater	W	ELL CONSTRU	CTION	S	Blows/ 6"	Gra Syr	DES	CRIPTIO	N		
	>											
								:				
								Becomes gray at 176 feet.				
					-							
-					-			Becomes some sand at 178 fe	et.			
-			10-20 filter sand 17	7 to 190	-							
-180			feet		_			Missing 180 to 186 feet.				
-					1							
-					-			-				
-					-							
-185			4-inch I.D. PVC wel	ll screen	_							
			0.010-inch slot widt threaded connection	h and								
			189.2 feet	13 17 9.2 10				Very moist to wet, brownish gradient (GP).	ay to gray, G	RAVEL, some sand, trace silt		
Ē					1							
-					-			Sandy 188 to 189 feet.				
-			End cap with thread	led	-			Some sand 189 to 190 feet.				
-190		· • · · ·	connections and O- to 189.6 feet		_			Slough likely 190 to 191 feet.				
-					-				Group Pod	rock		
							××××	Slightly weathered, weak (R1), by drilling.		k, coaly, SHALE; pulverized		
								Pulverized sedimentary rock (s Very high drill action, slow proc	iltstone) 192 ress.	to 195 feet.		
			Bentonite chips 190 feet	) to 197	1							
-					+			4 4				
-195					-		$\begin{vmatrix} \times & \times & \times \\ \times & \times & \times \\ \times & \times & \times \\ \end{vmatrix}$	Fresh, moderately weak (R2),	gray, massiv	e, SILTSTONE.		
1/2/1/2					-		$\begin{vmatrix} \times & \times & \times \\ \times & \times & \times \\ \times & \times & \times \\ \times & \times &$					
2								с с с				
								Boring terminated at 197 feet	an 4/00/00			
					1			Well completed at 189.2 feet Groundwater encountered at				
					1			at 77.5 feet on 5/13/22.				
S	⊥   ampler	• Type (	ST):									
-			Split Spoon Sampler (S	SPT)	No Re	ecovery		M - Moisture		Logged by: JG		
			Split Spoon Sampler (E	D&M)	-	Sample		<ul> <li>✓ Water Level (5/13/22)</li> </ul>		Approved by: CJK		
	r <mark>e</mark> r (	Grab Sa	ample	·····	Shelb	y Tube S	ample	Water Level at time of	drilling (ATD	)		

	1	2	>	a s	sociatec		Geo	logi	c & N	lonitor	ring Well Con	structio		
	$\triangleleft$	2			rth sciences corporated		oject Nun 003671				Well Number EB-10W		Sheet 1 of 3	
-	Project	t Nar	ne		Cumberland Pro		000071	1001			Location	King Cour		
	Elevati Water				ell Casing) <u>852.64</u>						Surface Elevation (ft) Date Start/Finish	<u>850.22</u>	-	
	vvater Drilling					ervices / TS	SI 150C	C (Sc	onic)		Hole Diameter (in)	<u>7/21/22,7/</u> 8"	22/22	
	Hamm	er Ŵ	'eigh	t/Dr					,		Well Tag #	BPK 530		
	Depth (ft)	Water Level						Is/	Graphic Symbol					
	(f (f	ater					s	Blows/ 6"	Syn					
		W			ELL CONSTRU	STION	T				DESCI	RIPTION		
-		¥			Concrete 0 to 1.5 fe	et	-			orgánics/r Moist, yel scattered	t, dark brown to very dar ootlets; nonplastic (OM/ lowish brown and light g rootlets; moderate plasti	ML). ray mottled, cla city; faint lamin	yey, SILT, trace ae (ML).	
										Wet, pale	brown, silty, fine to coar	se SAND; mas	sive (SM).	
ſ				000000000000000000000000000000000000000						Wet, yello SAND to	wish brown grading to liq very sandy, SILT; nonpla	ght gray, very s astic; few roots	ilty, fine to coars and charcoal (S	se iM/ML).
	- 5				Medium bentonite c 47 feet	hips 1.5 to	-102			Wet, light stratified;	gray to gray (2.5Y), med locally derived (SP).	dium SAND, tra	ace to some silt;	faintly
-							-							
-	- 10		*****		4-inch I.D. Sch 40 F with threaded conne to 51 feet		-			moderate Wet, gray inches thi Moist, gra	Older st, gray (2.5Y to 10YR), s to high plasticity; faint la ish brown, medium SAN ck) of clayey silt; stratifie y and dark yellowish bro nigh plasticity (CH).	minae (CH). ID, trace to som ed (SP-SM).	ne silt; interbeds	s ( <u>&lt;</u> 6
-	- 15						- - - -			Very mois trace silt;	st, dark grayish brown, m few rip-up clasts of gray	edium to coars to greenish gra	e SAND, trace a ay clayey silt (SF	gravel, <sup>&gt;</sup> ).
-	- 20		*****				-				st, dark grayish brown to ;; massive (ML).		sandy, SILT;	
NWWELL-B 20200367H001.GPJ BORING.GDT 5/15/23	-		mpler Type (ST):							clayey, SI rhythmite moderate	Lacustr ery moist, gray (GLEY1 LT; scattered wood fragr ; occasional, very thin int to high plasticity; not gla bon age: 14,940 to 14,	ments; inclusion terbeds ( <u>&lt;</u> 1 cm trially consolida	ns of organic se n thick) of fine s ated; drills smoo	diment; and;
32003	Sa	ample	er Ty	/pe (	ST):									
-B 2(		Ш	2" (	DD S	Split Spoon Sampler (S	SPT)	No Rec	overy			loisture		Logged by:	MJP
VELL.			3" (	DD S	Split Spoon Sampler (E	0 & M)	Ring Sa	ample			/ater Level (7/22/22)		Approved by:	JHS
MN		Ċ	Gra	b Sa	ample	""""""""""""""""""""""""""""""""""""""	Shelby	Tube S	ample	Ψ w	ater Level at time of drill	ling (ATD)		

		2	as	sociatec		Geologic & Mor				Monitoring Well Construction Log				
		1	ea in	rth sciences corporatec		Pro	ject Nur )03671	nber			Well Number EB-10W		Sheet 2 of 3	
	Project	Nan	ne	Cumberland Pr		2020	00071	1001			Location	King Cou		
	Elevation	on (T	op of W	/ell Casing) <u>852.6</u>	64 64						Surface Elevation (ft)	<u>850.22</u>	-	
	Water Drilling		l Elevati ipment		Services /	/ TS	11500	C (Sc	nic)		Date Start/Finish Hole Diameter (in)	<u>7/21/22,7</u> 8"	( 22 22	
			eight/Dr					(			Well Tag #	BPK 530		
	Depth (ft)	Water Level	V	VELL CONSTRU	ICTION		S T	Blows/ 6"	Graphic Symbol		DESCF	RIPTION		
	-						- - - -			Sand ir	nterbeds are more frequent.			
	- 30 -						-			Disturb	ed during drilling by underly	ing wet sand	. Water under pre	essure?
	-						-			Wet, g faintly s	rayish brown, medium SANI stratified (SP-SM).	D, trace to so	me silt, trace gra	vel;
	- 35						_				rayish brown, medium to co stratified (SP).	arse SAND, t	race silt, trace gr	avel;
	-						-			Very m high pla	ioist, gray (GLEY1 to 5Y), cl asticity (MH).	ayey, SILT; r	hythmite; modera	ate to
	- 40						-			Moist t clayey,	ve; contains scattered grave o very moist, grayish brown SILT, some sand; gradatior ds (MH).	to gray (5Y to nal contact wi	o 3.5YR), gravell ith underlying uni	y, t; fining
	-						-			scatter overlyir	Vashon baked?), brown (10YR), silt ed to abundant cobbles; fair ng unit (GM). Drill action cor mpeded.	ntly bedded; g	radational contac	t with
NWWELL-B 20200367H001.GPJ BORING.GDT 5/15/23	45 - - -			#12/20 silica sand feet	47 to 60		-			Very m some s	ioist, grayish brown to brown silt; faintly bedded; scattered	n, sandy, fine cobbles (GP	to coarse GRAV -GM).	EL,
20200;		-	er Type			П					Maintura		1.000-01	
н В Ц		2" OD Split Spoon Sampler (SPT)         3" OD Split Spoon Sampler (D & M)				∐ ∎⊓	No Rec			м. 	· Moisture Water Level (7/22/22)		Logged by: Approved by:	MJP
MWEL		_	Grab S				Ring Sa Shelby	Tube Sa	ample	Ţ	Water Level (7/22/22) Water Level at time of drilli	ng (ATD)	יאקרי איט אין אין איזיי.	0110
z	l I	_		•		Ľ			•			J/		

	1	$\sim$	a s	sociatec		Ge	ologi	c & N	Ionitoring Well Cons	struction Log
	$\triangleleft$	2		rth sciences corporatec		roject N	umber 7H001		Well Number EB-10W	Sheet 3 of 3
	Project			Cumberland Pro	operty				Location Surface Elevation (ft)	King County, WA 850.22
	Water	Leve	el Elevati	on			00 (0	• 、	Date Start/Finish	7/21/22.7/22/22
			uipment Veight/Dr	rop <u>N/A</u>	ervices / T	SI 150	ICC (Se	onic)	Hole Diameter (in) Well Tag #	8" BPK 530
	Depth (ft)	Water Level	v	VELL CONSTRU	CTION		L G Blows/ 6"	Graphic Symbol	DESCF	RIPTION
									Very moist to wet, grayish brown, c trace silt; sharp contact with bedroo	oarse sandy, fine to coarse GRAVEL, ck (GP).
	- 55	¥		4-inch I.D. Sch 40 F screen 0.010-inch s 51 to 60 feet			95. 1	Cxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx	Weathered Pug Slightly to highly weathered, gray to very weak (R1) to moderately weak medium grained SANDSTONE; hig within fractures. Drilling progress s	
	-					_		× × × × × × × × × × × × × × × × × × ×		
	- 60			PVC Slip End Cap		-	-	××××		
36/HUUT.GPJ BORING.GDT 3/19/23	- 65 - 65 - 70 - 70					-			Boring terminated at 60 feet Well completed at 60 feet on 7/2: Perched groundwater encountered encountered at 53 feet ATD. Wa 36 feet ATD. Groundwater measured at 53.3 f	ed at 3 feet ATD. Groundwater ter bearing zone encountered 32 to
20201		ampl []]	ler Type ( 2" OD S	(ST): Split Spoon Sampler (६	SPT) 🗍	No R	ecovery		M - Moisture	Logged by: MJP
				Split Spoon Sampler ([			Sample		⊻ Water Level (7/22/22)	Approved by: JHS
NNN		Ċ	Grab Sa	ample	·····	Shelb	y Tube S	ample	Water Level at time of drilling	ng (ATD)

ſ		sociatec		Geolo	gic & N	& Monitoring Well Construction Log Well Number Sheet				
$\triangleleft$		rth sciences corporatec		oject Number		Well Number EB-11W	Sheet 1 of 2			
	t Name	Cumberland Pro	operty			Location	King County, WA			
	ion (Top of W Level Elevati		5			Surface Elevation (f Date Start/Finish	t) <u>849.92</u> 8/25/22,8/26/22			
	g/Equipment her Weight/Di	rop N/A	ervices / T	SI 150CC	(Sonic)	Hole Diameter (in)	8"			
паппп		юр <u>М/А</u>				Well Tag #	BPK 532			
Depth (ft)	Water Level			Slows/	6" Graphic Symbol					
ă	Vater V	VELL CONSTRU	CTION	Blo Blo	S S S	DES	CRIPTION			
				1						
		Above ground steel with locking cover a	monument nd bollards		<u>x 1, x 1,</u> 1/ . <u>x 1/</u>		Topsoil			
-		Plastic compression	n well cap			Rec	cent Alluvium			
F		Concrete 0 to 3 fee	t	-		Moist, light brown with oxidation	n mottling, SILT, some fine sand; highly			
-				-		plastic (ML).				
_										
	Y						ne SAND, trace coal fragments; bedded			
- 5	-	Bentonite chips 3 to	13 feet			(SM). Seepage and mud on barrel 5 to	o 10 feet.			
-				-						
-				-						
_	Σ			_						
-										
- 10		4-inch I.D. PVC cas	ing with				der Alluvium			
-	Ţ	threaded connection feet	is 0 to 15	-		Moist, brownish gray, silty, CLA	Y; massive (CL).			
_										
-		•				Wet grav fine SAND trace to	some silt; massive (SP/SP-SM).			
-		Sand pack 13 to 21	.5 feet	-						
- 15										
_										
[		4-inch I.D. PVC we 0.020-inch slot widt		1						
-		threaded connection								
+										
- 20					111111	l	atrina Danasita			
						Lacus Moist ranging to very moist (info CLAY, trace sand; massive; rhy	strine Deposits erred due to high plasticity), gray, silty, /thmite (CL)			
				]						
				-						
<u> </u>				-						
2	ampler Type									
-	_	Split Spoon Sampler (S		No Recove	•	M - Moisture	Logged by: JG			
-		Split Spoon Sampler ([	D&M) ∐	Ring Samp		<ul> <li>✓ Water Level (1/31/23)</li> <li>✓ Water Level at time of a</li> </ul>	Approved by: JHS			
	🖻 Grab S	ample	·····	Shelby Tub	e Sample	⊥ Water Level at time of o	arilling (ATD)			

	ſ	2	> a s	sociatec		Ge	0	logi	c & N	lonit	oring V	Nell Con	structi	on Log
	$\triangleleft$	2	ea	rth sciences corporatec	2	Project N 020036					Well Nur EB-11			Sheet 2 of 2
	Project			Cumberland Pro	operty						Locatio	n	King Co	unty, WA
· ·	Water	Leve	el Elevati									e Elevation (ft) tart/Finish	<u>849.92</u> 8/25/22,	8/26/22
			iipment /eight/Dr	rop N/A	ervices /	TSI 15	0C	C (So	onic)		Hole Di Well Ta	iameter (in)	8"	
H			olgi li Di								Weille	лу <del>п</del>	<u>BPK 532</u>	<u> </u>
	Depth (ft)	Water Level						Blows/ 6"	Graphic Symbol					
	ŏ	Vater	v	VELL CONSTRU	CTION		s	Blo	Syl Syl			DESCE	RIPTION	
		>	•		011011		I					5200.		
ŀ														
+							$\left  \right $							
Ē						·	1							
ŀ							$\left\{ \right\}$							
	- 30			Dontonito chin hook	£:11							Vaaban	Ice-Contact	
				Bentonite chip back								vashon	ice-contact	L
ſ							1			Moist,	brown, silty,	gravelly, mediur	m to coarse	SAND (SM).
ŀ							$\left\{ \right\}$							
													• •	
										Becon	ies siity, san	idy, GRAVEL (G	M).	
F							1							
+	- 35					-	$\left  \right $			Verv m	noist to wet (	likelv due to wat	er from abov	<i>r</i> e), gray, silty, sandy,
								3.3.	GRÁV	EL (GM).	, <b>,</b>		-,, g,,,,,,	
										l				
F										i.				
-										Becom	nes moist an	d brown.		
										1				
ſ										Cobble	e at 40 feet.			
ŀ	- 40					-								
										Boring Well c	terminated	at 40 feet t 21.5 feet on 8	/26/22	
										Groun	dwater enco	ountered from 4	to 10 feet	and 13 to 20 feet ATD.
F							1			Groun				1/2023.
ŀ							$\left\{ \right\}$							
	- 45						1							
5/15/2							$\left  \right $							
GDT														
RING.														
J BOI							1							
01.GP							$\left  \right $							
67H0(	_													
NWWELL-B 20200367H001.GPJ BORING.GDT 5/15/23		m '	er Type			-								
B 2		Ш		Split Spoon Sampler (S		-		overy			- Moisture			Logged by: JG
WELL				Split Spoon Sampler (I		-		ample		∑ ▼		el (1/31/23)		Approved by: JHS
ŇN		Ö	Grab S	ample		She	lby <sup>·</sup>	Tube S	ample	Ţ	Water Leve	el at time of drilli	ng (ATD)	

٢	2	associatec		Geologi	c & N	Ionitoring Well Con Well Number	nstruction Log
4	9	earth sciences		oject Number		Well Number EB-12W	Sheet 1 of 4
Projec	t Nam		-	.0030711001		Location	King County, WA
		Fop of Well Casing) <u>845.46</u> el Elevation	5			Surface Elevation (ft) Date Start/Finish	842.83
			ervices / TS	SI 150CC (Se	onic)	Hole Diameter (in)	8/15/22,8/22/22 8"
Hamm	er W	/eight/Drop <u>N/A</u>			,	Well Tag #	BPK 533
Depth (ft)	Water Level		CTION	L S Blows/ 6"	Graphic Symbol	DESC	CRIPTION
						Vasho	n Ice Contact
-		Concrete 0 to 2 feet		-		(SM).	YR), silty, gravelly, fine SAND; scattered stripped for drill pad prior to boring o coarse GRAVEL, some silt to silty gh formation.
- 5 -		Coarse grade bento feet	nite 2 to 85				), fine to coarse GRAVEL, some sand to pulverized; abundant cobbles; faintly
- - - 10 -		4-inch I.D. Sch 40 F with threaded conne to 87 feet		-		Moist, grayish brown (10YR), me GRAVEL; trace silt; scattered co	edium to coarse sandy, fine to coarse bbles; subrounded gravel (GP).
- - - 15 -						coarse sandy, fine to coarse GR	sh brown (2.5Y to 10YR), medium to AVEL, trace to some silt; abundant d with very gravelly, silty, fine to medium stratified (GP/SM).
						Moist, grayish brown, medium to some silt to silty, trace clay; strat	coarse sand, fine to coarse GRAVEL, ified; scattered cobbles (GM).
	ample	er Type (ST):			1.11.1		
		2" OD Split Spoon Sampler (S	SPT)	No Recovery		M - Moisture	Logged by: MJP
>	ш	3" OD Split Spoon Sampler (E	0 & M)	Ring Sample		$\overline{\Sigma}$ Water Level (1/4/23)	Approved by: JHS
	Ċ	Grab Sample	**************************************	Shelby Tube S	Sample	Water Level at time of dr	illing (ATD)

٢		associatec		Geologi	c & N	Monitoring Well Construction Log					
Ł	5	earth sciences		oject Number 00367H001		Well Number EB-12W	Sheet 2 of 4				
Elevat		Cumberland Pro	operty 6			Location Surface Elevation (ft)	King County, WA 842.83				
Drillin	g/Equipr		ervices / TS	SI 150CC (So	onic)	Date Start/Finish Hole Diameter (in)	8/15/22,8/22/22 <u>8</u> "				
Hamn		ght/Drop <u>N/A</u>				Well Tag #	BPK 533				
Depth (ft)	Water Level	WELL CONSTRU	CTION	Elows/ 6"	Graphic Symbol	DESC	RIPTION				
-				-		Becomes very moist at 26 feet.					
- - - 30 -				-		Moist to very moist, grayish brown silt; abundant cobbles; pulverized (GP-GM).	n, sandy, fine to coarse GRAVEL, some ; low recovery due to oversize				
-				-		Very moist, grayish brown, fine to some silt; scattered cobbles; bed	o coarse sandy, fine to coarse GRAVEL, ded (GP-GM).				
- 35				-602		Very moist, brown to olive brown, trace to some silt; bedded; subrou	fine to coarse GRAVEL, some sand, unded to subangular gravel (GP).				
-						Very moist, light olive brown, fine coarse sandy, some silt, trace cla	to coarse GRAVEL, some sand to y; faintly bedded (GP-GM).				
- 40 -				-005		Very moist, grayish brown, sandy	, fine to coarse GRAVEL, some silt to				
-				-	∘`₀▶ ▲	siltý; abundant cobbles; pulverizé (GP-GM). No recovery. Cobble plugged up p Redrilled material shows baked, o to above but not representative.	a, low recovery due to oversize bit and pushed through formation. drilling altered sediment. Appears similar				
- 45											
				-							
S S		Туре (ST):			I						
		OD Split Spoon Sampler (		No Recovery		M - Moisture ∑ Water Level (1/4/23)	Logged by: MJP				
	<u> </u>	OD Split Spoon Sampler (I rab Sample	עאַע) [] []	Ring Sample Shelby Tube S	ample	<ul> <li>✓ Water Level (1/4/23)</li> <li>✓ Water Level at time of dri</li> </ul>	Approved by: JHS				
z 📃 📃	с U		··	2							

ſ	2	associatec		Geolog	ic & N	lonit	oring Well Con	struction Log
Ł	1	earth sciences		oject Number			Well Number EB-12W	Sheet 3 of 4
	ct Nam		operty	.003071100	I		Location Surface Elevation (ft)	King County, WA 842.83
Wate	r Level	Elevation					Date Start/Finish	8/15/22.8/22/22
	ng/Equi mer We	pment <u>Holt S</u> eight/Drop N/A	ervices / TS	<u>SI 150CC (S</u>	Sonic)		Hole Diameter (in) Well Tag #	8" BPK 533
								<u>Di N 000</u>
Depth (ft)	Water Level			/s/	Graphic Symbol			
ے م	ater	WELL CONSTRU		S Blows/ 6"	Syr			RIPTION
	8	WELL CONSTRU	CTION	Т			DESCR	RETION
_					0000	Slightly	/ moist to moist (baked), gra	yish brown to light olive brown, coarse
-				-	0000	cobble	s and oversize; pulverized; n	ndy, trace to some silt; abundant nassive; cobble zone (GP).
						:		
-				- 1912	0000			
-				-		;		
Ē.				1	0000			
- 55				+-		Grades	s to medium to coarse sand	y, fine to coarse GRAVEL, trace to
				-672		some	silt; abundant cobbles; pulve	rized; faintly bedded (GP).
						:		
-				+		:		
					0000			
					0000	Small	ooulder at 58 feet.	
-				-		:		
- 60					<u> </u>			
						coarse	GRAVEL, some sand, som	GLEY 1) to dark bluish gray (GLEY 2), e silt (increased silt from
-				-		pulveri	zation); abundant cobbles; b	ooulder encountered (GP-GM(.
-					۰°۰			
-				-		1		
-					° °			
						pulveri	es slity, sandy, fine to coars zation (GM).	e GRAVEL; increased silt from
- 65						No rec	overy 65 to 67 feet. Driller u	ses hammer bit.
-				-				
-				1	0,000	Contai	ns dry to slightly moist (bake	ed), fine to coarse GRAVEL; open
-				-			vork (GP).	
						:		
						:		
- 70						Moist (	baked) gravish brown to bro	own, sandy, fine to coarse GRAVEL,
52/6					0000	trace to	some silt; pulverized and fi bedded (GP).	ractured gravel; abundant cobbles;
L/G							bedded (GF).	
				-		:		
						:		
ň				]	0000	:		
						:		
Ennzn		r Type (ST):	_					
я -	-	2" OD Split Spoon Sampler (S	SPT)	No Recovery			· Moisture	Logged by: MJP
		3" OD Split Spoon Sampler ([	0 & M)	Ring Sample	•	∑ ■	Water Level (1/4/23)	Approved by: JHS
	Ċ	Grab Sample	1999 A. B.	Shelby Tube	Sample	Ţ	Water Level at time of drilli	ing (ATD)

1	2	as	sociatec		Geo	ologi	c & N	lonito	oring Well Con	
$\triangleleft$	2		th sciences orporatec		Project Nu 200367				Well Number EB-12W	Sheet 4 of 4
Project		e	Cumberland Pro	perty					Location	King County, WA
		op of We Elevatio	ell Casing) <u>845.46</u> n	3					Surface Elevation (ft) Date Start/Finish	<u>842.83</u> 8/15/22,8/22/22
Drilling	g/Equi	pment	Holt S	ervices / 1	SI 150	CC (S	onic)		Hole Diameter (in)	8"
Hamm		eight/Dro	р <u>N/A</u>						Well Tag #	BPK 533
Depth (ft)	Water Level	w	ELL CONSTRU	CTION	5	Blows/ 6"	Graphic Symbol	No reco	DESCF overy 75 to 77 feet due to o	RIPTION versize.
- - - 80 - -	Ţ				-			very m abunda Becom	bist, brown (10YR), silty, cc nt cobbles; faintly bedded ( es wet, light olive brown, so <b>Vashon L</b> o o very moist, dark gray (5Y) on; dark gray/green rounde	me silt at 81 feet (GP-GM). odgement Till , silty, gravelly, fine SAND; unsorted d gravel and fragments of weathered
- 85 - - - - - 90 -			#12/20 silica sand 8 feet 4-inch I.D. Sch 40 F screen 0.010-inch s 87 to 92 feet	²VC well	-			Wet, gr	one, till; weathered upper 6 Pre-Vash av (5Y to GLEY1). coarse s	inches to yellowish brown (SM). non Deposits sandy, fine to coarse GRAVEL, trace ubrounded gravel: abundant
001.GPJ BORING.GDT 5/15/23			Threaded end cap Native cave-in 92 to	95 feet.	-			shaley, Fresh, weak (f gray (N efferves Boring Well co Ground	aminated to thinly bedded, COAL; extremely weak to v thinly bedded to bedded, wh R1), fine to medium grained	hite (N9) to very light gray (N8), very I SANDSTONE with interbeds of light in lenses of organics or leaf prints ; 2/22. feet ATD.
VELL-B 203			olit Spoon Sampler (S olit Spoon Sampler (E		Ring S	ecovery Sample y Tube S	 Sample	∑ ■	Moisture Water Level (1/4/23) Water Level at time of drilli	Logged by: MJP Approved by: JHS ing (ATD)

ſ	6	2			ciatec		Exploration	Bor	in	g							
	$\triangleleft$	2			sciences	Project Number 20200367H001	Exploration Nur EB-13	nber						<sub>eet</sub> of 4			
	Project		me		Cumberland	d Property				Surfa	ace Ele	evation	(ft)		44.8		
	Locatio Driller/E	Equi			King County Holt Service	/, WA es / TSI 150CC (Sonic)		Datun Date S		t/Fir	nish	_N/A _8/2		,8/23	/22		_
	Hamme	er W	/eight	/Drop	N/A			Hole [	Diar	nete	er (in)	8"		,			_
	ft)		s	<u> </u>				ы	vel	5							sts
	Depth (ft)	s	Samples	Graphic Symbol				Well Completion	Water Level	Blows/6"		Blov	vs/Fo	oot			Other Tests
	ď	Т	Sa	იი		DESCRIPTION		Col	Wat	ā	10	20	30	40	1		Oth
╞					Durite elisibility	Vashon Ice Contact Deposits											
ł					very gravelly, fin drills loose (SM)	noist, strong brown to reddish yellow (7.5 ne to coarse SAND; scattered roots/rootl	ets; fining upwards;										
ſ																	
ł					Slightly moist, g bedded (GP).	rayish brown, medium to coarse sandy,	fine GRAVEL, trace silt;										
+	- 5				bedded (GP).												
					trace silt; scatte	moist, grayish brown, coarse GRAVEL red cobbles; bedded (GP).	, some sand to sandy,										
ſ				0 0	No recovery 7 to	o 10 feet due to oversize/loose formation	1.										
ł																	
╞																	
	- 10			D 0	Dry to olightly m	ioist (baked), light brownish gray, coarse	and, fina ta acaraa										
					GRAVEL, trace	to some silf; pulverized; increase silt fro	m pulverization;										
F					No recovery; co	bble stuck in bit.											
ł																	
+				0 0	Moist brownish	gray, medium to coarse sandy, fine GR	AVEL some coarse										
	- 15				gravel, trace silt	; bedded (GP).											
	10																
Ī					Slightly moist (b silt, fractured gr	aked), light brownish gray, coarse GRA avel (GP).	VEL, some sand, trace										
ŀ					Moist, brown, sa	andy, fine to coarse GRAVEL, trace to s	ome silt; scattered										
╞					fractured gravel	bedded; pulverized/altered by drilling fro ; bedded (GP-GM).	m 18 to 20 leet,										
	00																
	- 20																
ł					Becomes moist	to very moist at 21 feet.											
2023																	
ay 15, 2						alaad) liabt burnish want first to some											
ΡJ Μέ						aked), light brownish gray, fine to coars to some silt; abundant cobbles; pulverize											
1001.G																	
AESIBOR 20200367H001.GPJ May 15, 2023	_	- ·	• •	pe (ST)							I	I		I			<b></b>
R 202	L	<b>—</b>		•	poon Sampler (Si		- Moisture							ed by: oved b	MJ <b>y:</b> JH:		
SIBO		2		Split S Sample	poon Sampler (D		Water Level () Water Level at time of	drilling	(AT	D)		F	-0149-0		<b>,</b> JL	0	
₹L	-	-															

ſ	2	>		ociatec		Ex	ploration	Borin	g					
$\triangleleft$	2	)		sciences rporatec	Project Number 20200367H001	1	Exploration Nur EB-13	mber				Sheet 2 of 4		
Project Locatio		me		Cumberland King County	Property			Ground S Datum	Surfac	e Elev		_8	44.8	
Driller/	Equ			Holt Service	s / TSI 150CC (Sonic)			Date Star			_N/A _8/22/2	2,8/23	3/22	
Hamm	er V	Veigł	nt/Drop	N/A				Hole Diar	neter	(in)	.8"			
(H)		s	. <u>9</u> –					ion	o.					sts
Depth (ft)	S	Samples	Graphic Symbol					Well Completion Water Level	Blows/6"		Blows/	Foot		Other Tests
ے ا	Т	s	00		DESCRIPT	ION		Cor	B	10	20	30 40	)	G
				As above; encou	untered boulder (GP).									
-														
				some silt; scatte	vn, medium to coarse sandy, red to abundant cobbles; fain	fine to coarse GF tly bedded; subro	RAVEL, trace to unded clasts							
F				(GP).										
-														
- 30														
				60% recovery fr	om 30 to 40 feet due to loose	e formation.								
Ī														
-														
-														
Ī				Becomes grayis	h brown to light olive brown.									
- 35														
-														
	Ð	S-1												
F														
-				Very moist, light	olive brown, coarse sandy, fi	ine to coarse GRA	AVEL, trace silt;							
- 40				scattered cobble	es; bedded; drills easy (GP).									
				50% recovery in	om 40 to 50 feet due to loose	e, gravelly formatio	on.							
Ī														
-														
-														
- 45														
ł														
- 13														
15, 20	£°}	S-2												
May														
01.GP,			000	Very moist, brow	vn, fine to coarse sandy, fine	to coarse GRAVE	EL, trace silt;							
AESIBOR 20200367H001.GPJ May 15, 2023	amn	er Tv	ype (ST)	scattered cobble	s (GP).									
] [20200	<b>-</b> -			Spoon Sampler (SF	PT) No Recovery	M - Moist	ture				-	ged by:	MJF	5
B <sup>B</sup> B <sup>B</sup>		3" O	D Split S	Spoon Sampler (D		∑ Wate					Арр	roved b	<b>y:</b> JHS	6
AES	🕅 Grab Sample 🖉 Shelby Tube Sample 🗵 Water Level at time of drilling (ATD)													

ſ	Exploration Boring										
$\triangleleft$			Exploration Nun EB-13	nber			eet of 4				
Projec		me		Cumberland	Property			urface E	levation (ft)	844.8	
Location Driller/	Equ			King County Holt Service	s / TSI 150CC (Sonic)		Datum Date Starl		_N/A _8/22/22	2,8/23/22	
Hamm	er V	Veight	/Drop	N/A	· · ·		Hole Dian	neter (in)	_8"		
Depth (ft)	S T	Samples	Graphic Symbol				Well Completion Water Level	Blows/6"	Blows/F	oot	Other Tests
					DESCRIPTION			1	0 20 3	0 40	
-				sand, trace silt; Very moist, gray	Moist to very moist, brown to grayish brown, fine to coarse GRAVEL, some sand, trace silt; scattered cobbles; bedded (GP). Very moist, grayish brown, medium to coarse sandy to very sandy, coarse GRAVEL; abundant cobbles; faintly bedded (GP/GW).						
- 55 - -	63 63			No recovery 58	to 60 feet due to cobble stuck in bit.						
- 60 - -				50% recovery d	ue to loose, gravelly formation.						
- 65				Very moist, brow scattered to abu	vn, medium to coarse sandy, fine to coa ndant cobbles; faintly bedded (GP).	arse GRAVEL, trace silt;					
- 70		ler Tvr		Slightly moist (b GRAVEL; abund Slightly moist to coarse SAND, th Slightly weather	s to some silt (GP-GM). aked), light brownish gray, coarse sand dant cobbles; boulder encountered (GP) moist (baked), light brownish gray, fine race silt; no cobbles (SP). Puget Group Bedrock ed, thinly bedded to bedded, light gray (	gravelly, medium to					
		2" OD 3" OD	Split S	Spoon Sampler (SF Spoon Sampler (D		- Moisture Water Level () Water Level at time of c	drilling (AT	D)		ed by: M oved by: ၂լ	IJP HS

Exploration Boring														
	earth sciences			ciences Project Number Exploration Number							Sheet 4 of 4			
Project	Na	me		Cumberland							levation (ft) <u>844.8</u>			
Locatio Driller/		inmo	at	King County	y, WA es / TSI 150CC (Sonic)		Datum Date S	า			_N/A		2/22	
Hamm	⊑qu er V	veigh	ιι t/Drop	N/A			Hole [				_8/22	22,8/2	3/22	
	Т													
(£f)		es	bic Sol				tion	Water Level	.9/		Blows	/Fact		Other Tests
Depth (ft)	S T	Samples	Graphic Symbol				Well Completion	ter L	Blows/6"		DIOWS	/F00l		ler T
		ű			DESCRIPTION		ပြိ	Wa	В	10	20	30 4	0	ġ
				(5YR 5/6) speck	kled, very weak (R1), fine grained SAN h orange (10YR 6/6) at upper contact; i	DSTONE, and weathered								
				disseminated.										
				Fresh, very light grained SANDS	t gray (N8) to light gray (N7), bedded, v TONE with thin beds of siltstone.	ery weak (R1), fine								
-				0										
-														
Ī														
- 80				As above: conta	ains veins of (manganese?) metal oxide	minerals and calcite								
				grains.										
Ī				Calcite grains di	isseminated.									
-														
-														
- 85														
-				Becomes mode	rately weak (R2).									
-														
Ī														
-				Few veins of me	etal oxides (manganese?).									
- 90														
				Bottom of explore	ation boring at 90 feet									
F				No groundwater	encountered. No well completed.									
-														
F														
-														
05														
- 95														
-														
23														
15, 20														
May														
GPJ														
AESIBOR 20200367H001.GPJ May 15, 2023		_												
50036 50036		-	pe (ST)											
۲ [20] ۱	-			poon Sampler (SF poon Sampler (D		I - Moisture Ź Water Level ()						gged by: proved l		
	~					Water Level () Water Level at time of a	drillina	(A1	FD)		- 14		2 0110	•
۳ L	Image: Brade Sample Image: Shelby Tube Sample Image: Water Level at time of drilling (ATD)													

# **APPENDIX C**

Laboratory Testing

## APPENDIX C Laboratory Testing

### Visual Classification

Soil samples recovered from the explorations were visually classified in the field at the time of drilling/excavation by a representative from Associated Earth Sciences, Inc. (AESI). Soil samples were also brought back to AESI's laboratory for further visual classification and comparison. Soil samples were visually classified using a system based on *ASTM International* (ASTM) Designation ASTM D-2488, "Standard Practice for Description and Identification of Soils" in conjunction with the Unified Soil Classification System. These visual classification methods allow for consistent comparison of soils from widespread geographic areas. Individual soil sample classifications have been incorporated into the boring logs presented in Appendix B.

### Mechanical Grain-Size Distribution

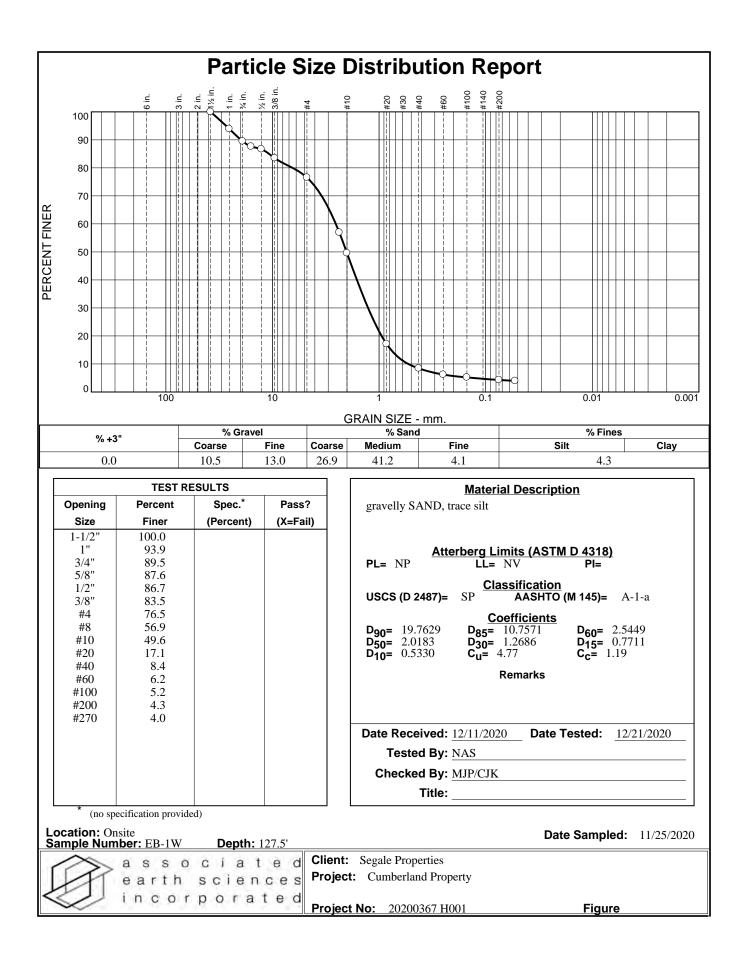
Grain-size analysis was performed on selected soil samples obtained from our explorations. Mechanical grain-size testing was performed in general accordance with ASTM D-422, "Standard Method for Particle-Size Analysis of Soils." Grain-size distribution results were used to assist in classifying soils and to provide correlation with soil hydraulic properties. Laboratory data sheets are attached.

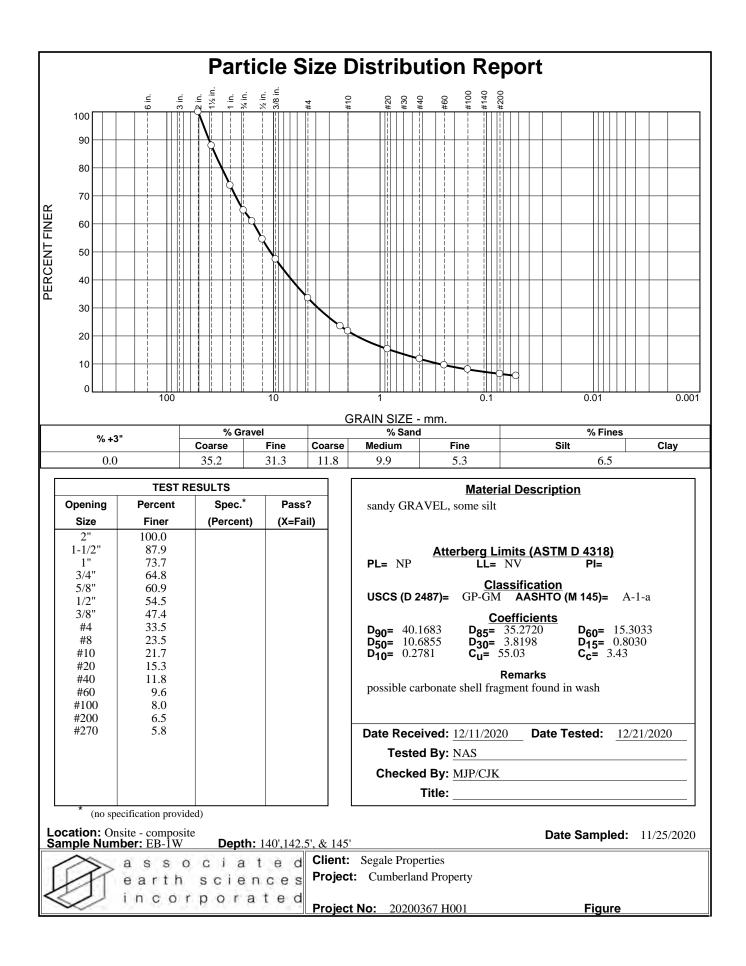
### **Radiocarbon Dating**

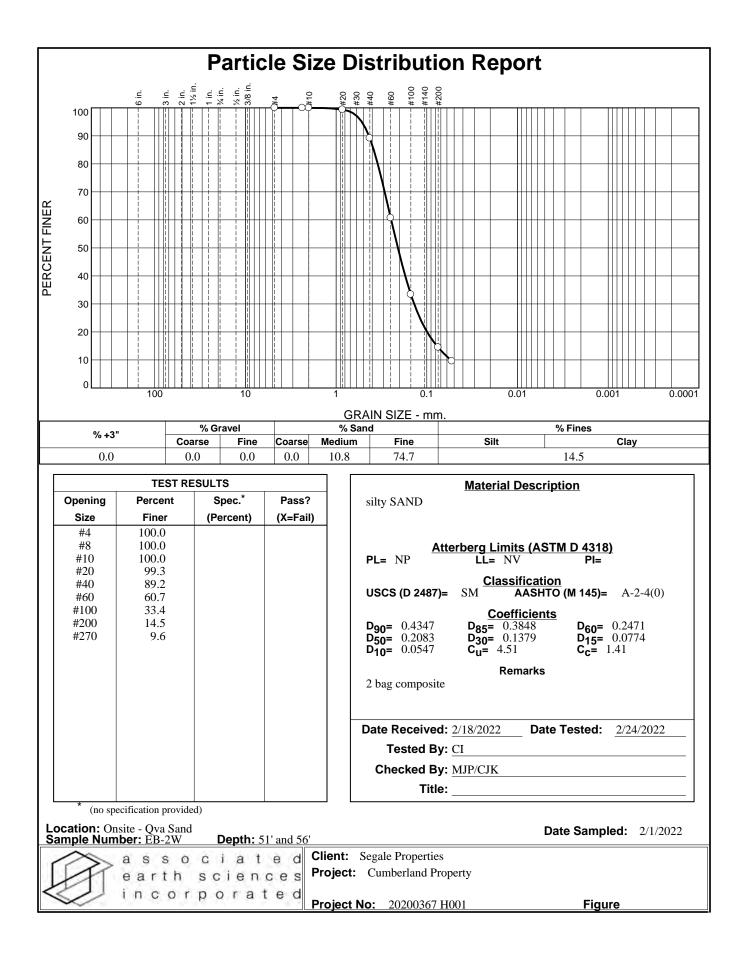
The wood sample was selected in the field and retained in a plastic bag. The sample was sent to Beta Analytic, Inc. (Beta) who performed sample pretreatment and Accelerator Mass Spectrometry (AMS) technique for radiocarbon dating. Calibrated age dates, such as those shown on the exploration log, were calculated by Beta and based on the High-Probability Density (HPD) range method. AMS laboratory detection limits cannot quantitatively or statistically differentiate age beyond about 43,500 years before present.

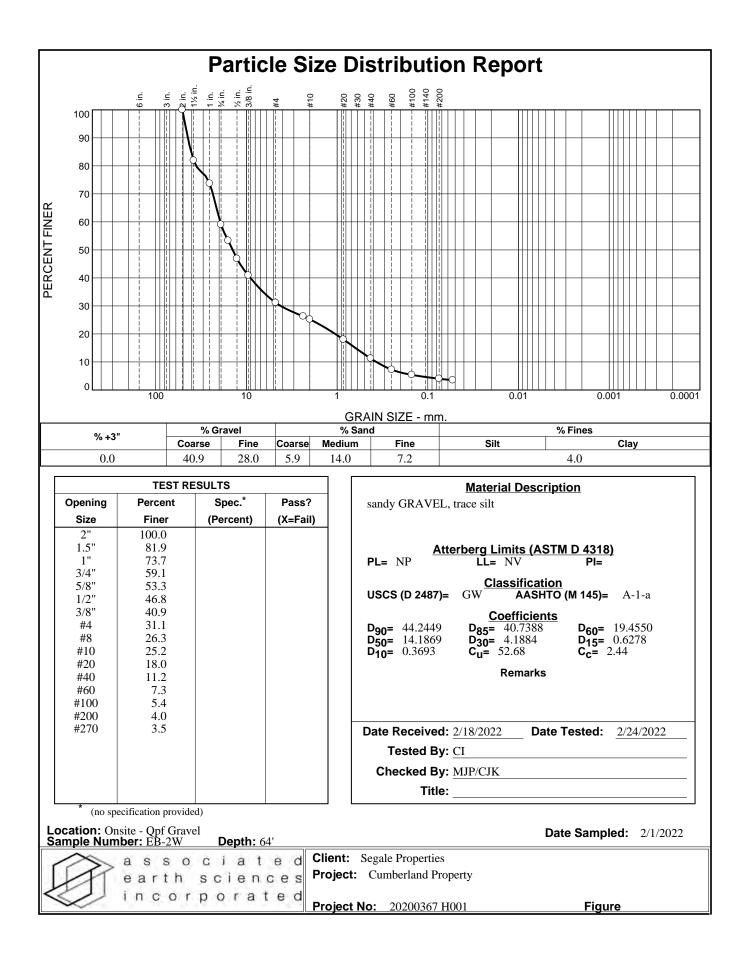
Attachments:

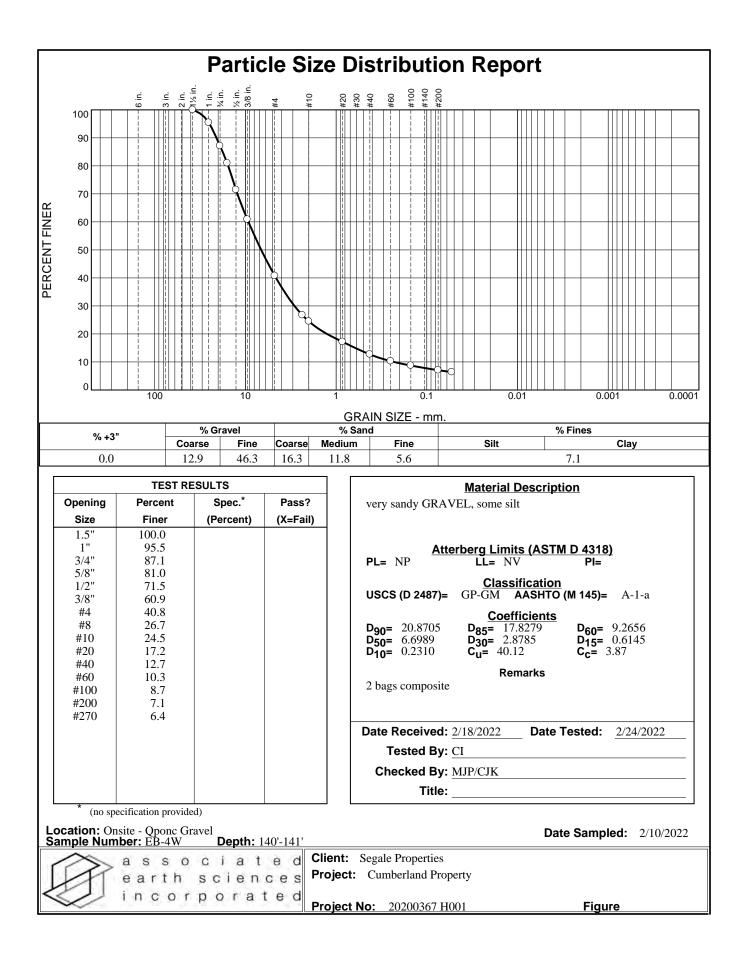
Mechanical Grain-Size Distribution Data Sheets Radiocarbon Dating Reports

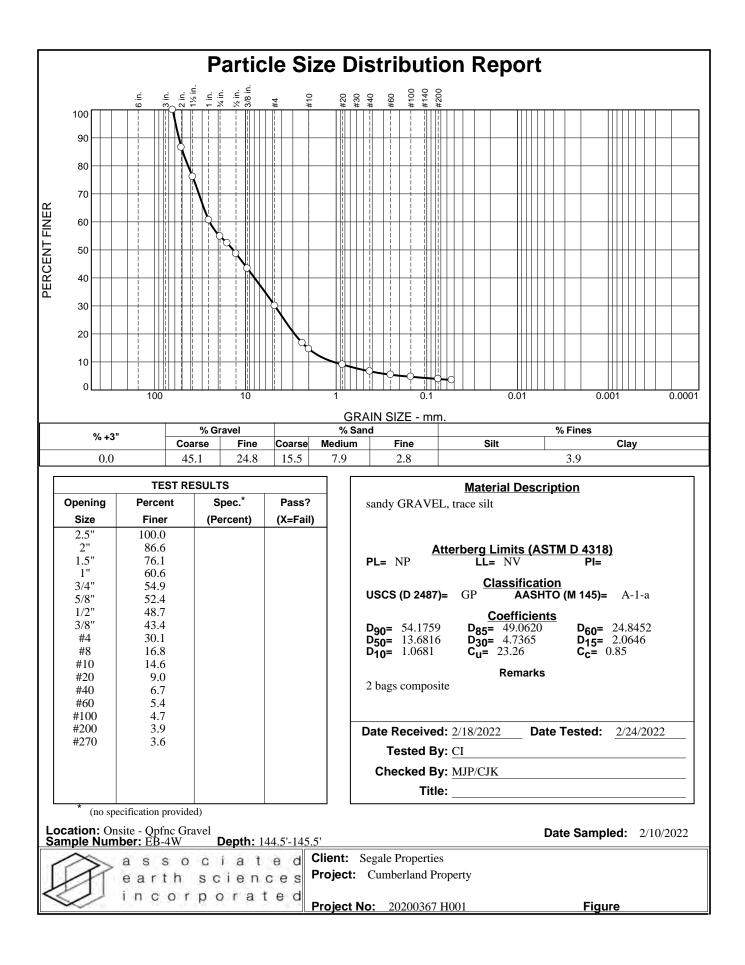


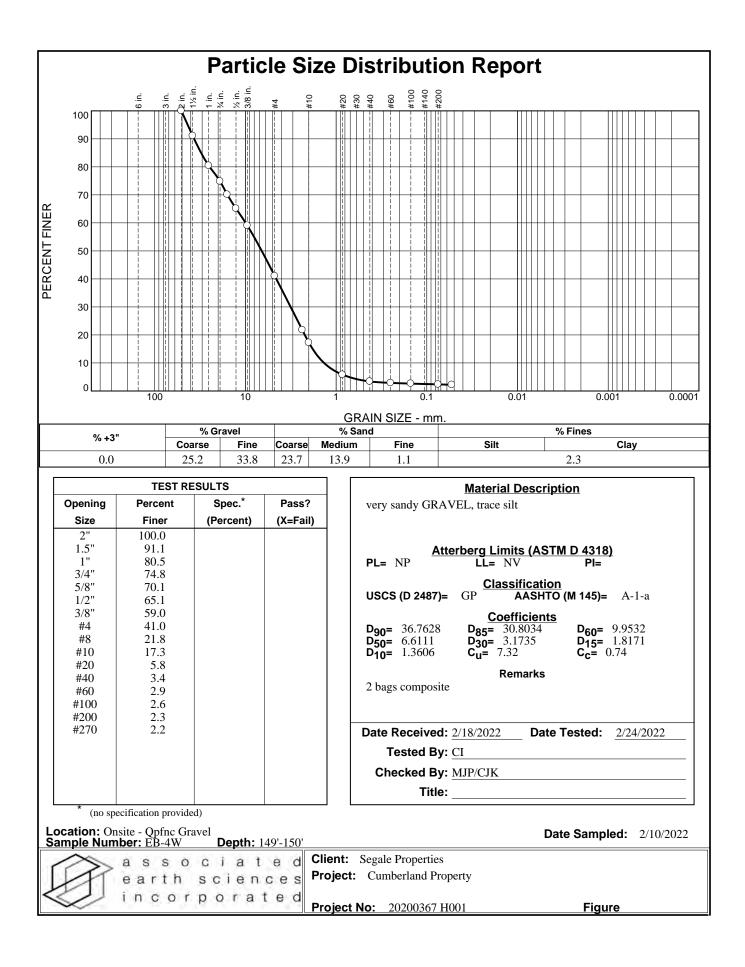


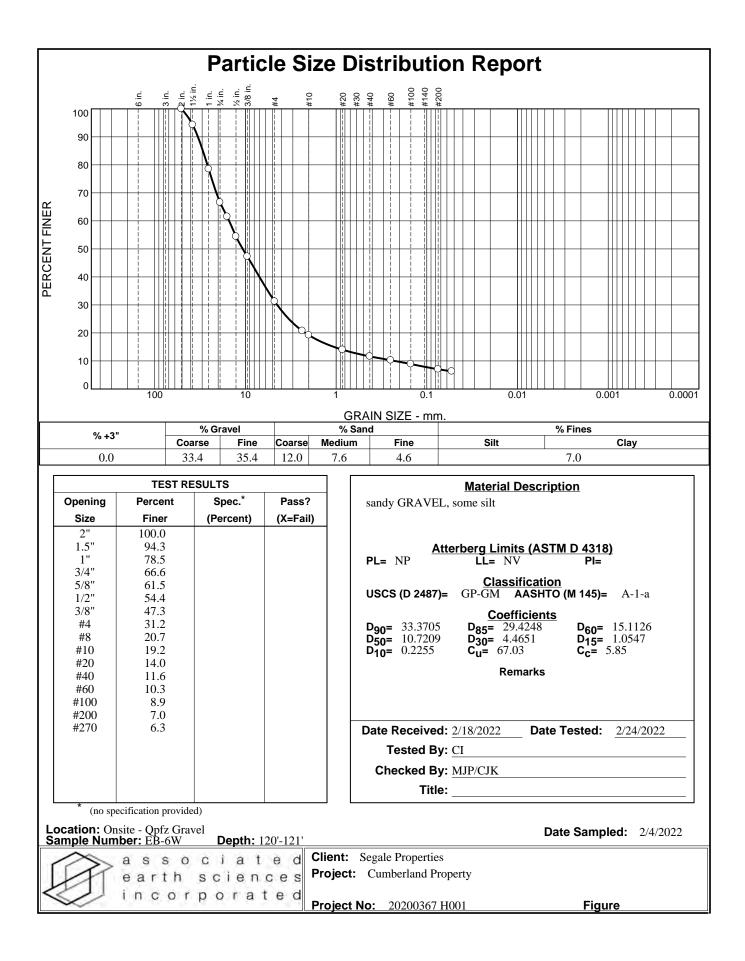


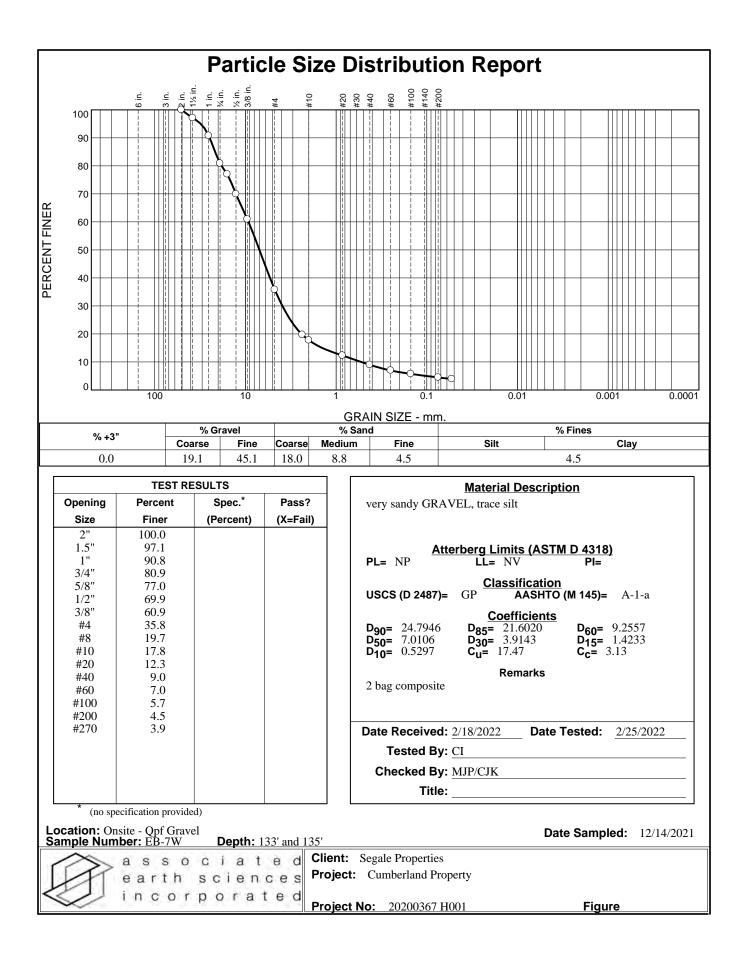


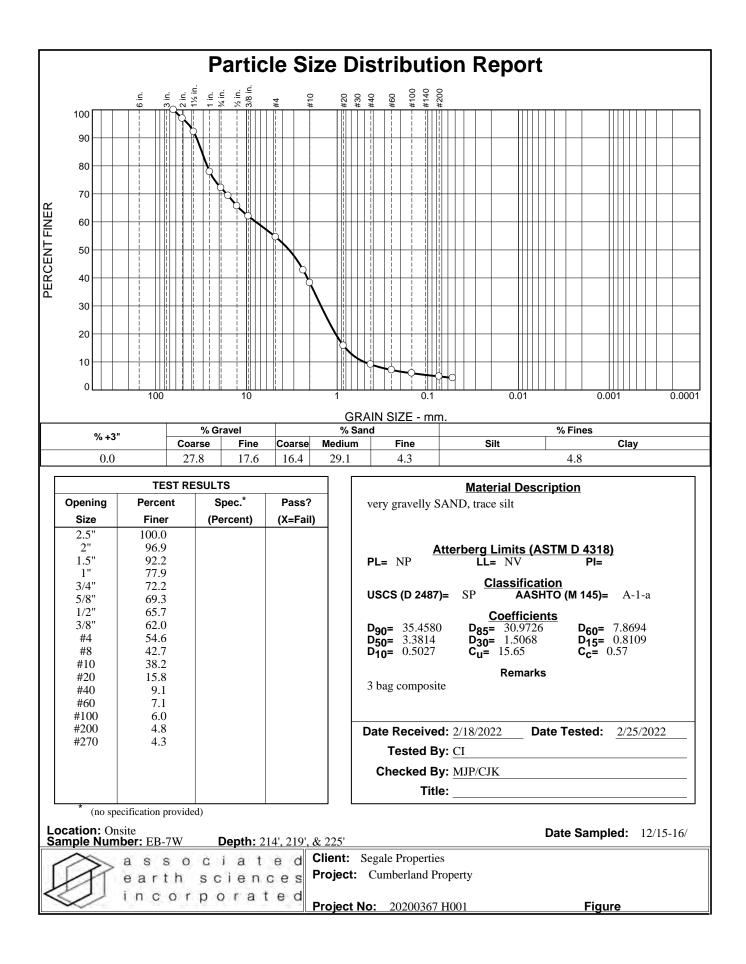


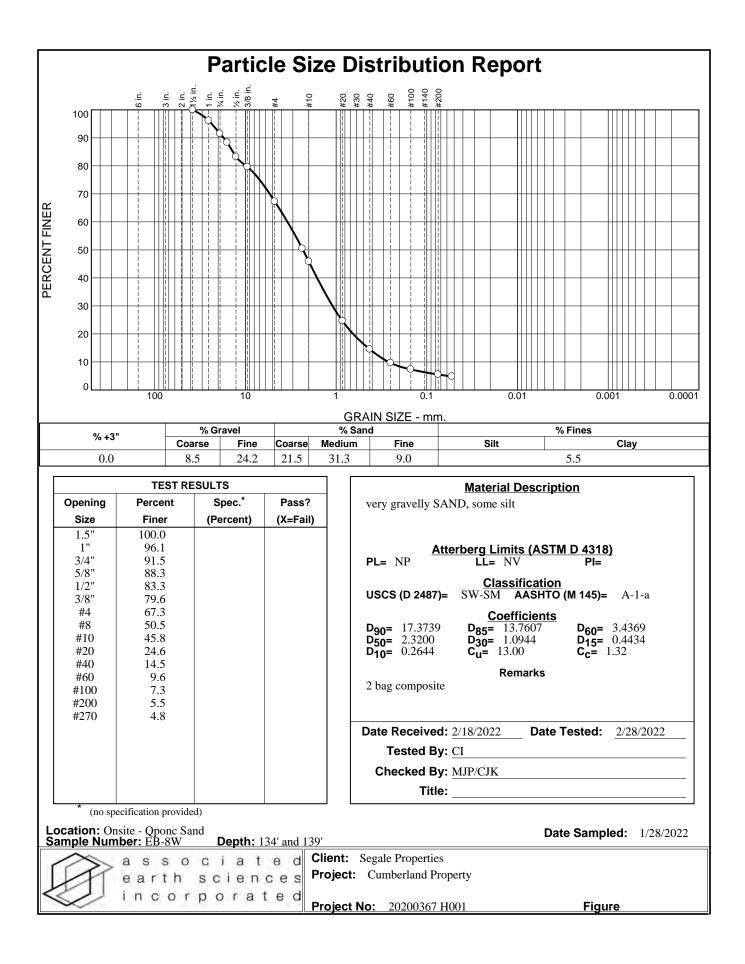














#### ISO/IEC 17025:2017-Accredited Testing Laboratory

January 20, 2022

Mr. Curtis J. Koger Associated Earth Sciences, Incorporated 911 Fifth Avenue Suite 100 Kirkland, WA 98033 United States

#### **RE: Radiocarbon Dating Results**

Dear Mr. Koger,

Enclosed is the radiocarbon dating result for one sample recently sent to us. As usual, specifics of the analysis are listed on the report with the result and calibration data is provided where applicable. The Conventional Radiocarbon Age has been corrected for total fractionation effects and where applicable, calibration was performed using 2020 calibration databases (cited on the graph pages).

The web directory containing the table of results and PDF download also contains pictures, a cvs spreadsheet download option and a quality assurance report containing expected vs. measured values for 3-5 working standards analyzed simultaneously with your samples.

The reported result is accredited to ISO/IEC 17025:2017 Testing Accreditation PJLA #59423 standards and all pretreatments and chemistry were performed here in our laboratories and counted in our own accelerators here in Miami. Since Beta is not a teaching laboratory, only graduates trained to strict protocols of the ISO/IEC 17025:2017 Testing Accreditation PJLA #59423 program participated in the analysis.

As always Conventional Radiocarbon Ages and sigmas are rounded to the nearest 10 years per the conventions of the 1977 International Radiocarbon Conference. When counting statistics produce sigmas lower than +/- 30 years, a conservative +/- 30 BP is cited for the result unless otherwise requested. The reported d13C was measured separately in an IRMS (isotope ratio mass spectrometer). It is NOT the AMS d13C which would include fractionation effects from natural, chemistry and AMS induced sources.

When interpreting the result, please consider any communications you may have had with us regarding the sample. As always, your inquiries are most welcome. If you have any questions or would like further details of the analysis, please do not hesitate to contact us.

Thank you for prepaying the analysis. As always, if you have any questions or would like to discuss the results, don't hesitate to contact us.

Sincerely,

Ronald E. Hatfield President



ISO/IEC 17025:2017-Accredited Testing Laboratory

# **REPORT OF RADIOCARBON DATING ANALYSES**

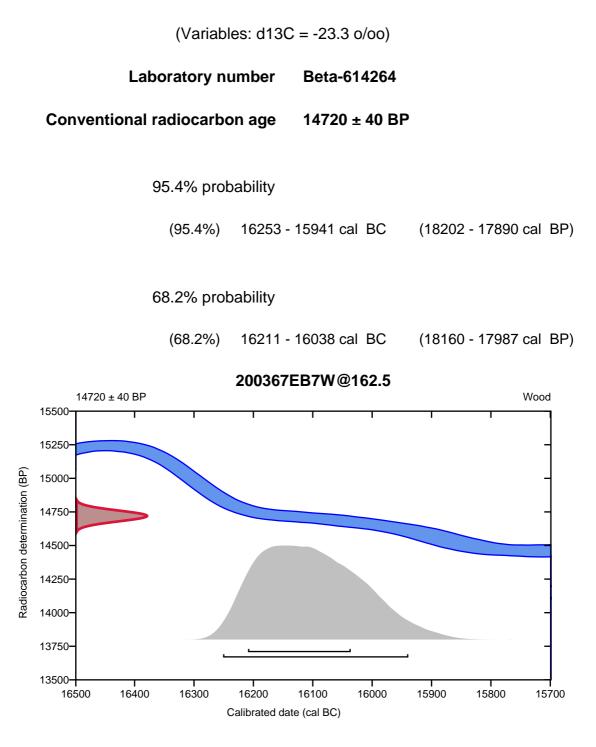
Curtis J. Koger			Report Date:	January 20, 2022
Associated Earth Scienc	es, Incorporated	Material Received:	December 22, 2021	
Laboratory Number	S	ample Code Number		adiocarbon Age (BP) or bon (pMC) & Stable Isotopes
Beta - 614264		200367EB7W@162.5	14720 +/- 40 BP	IRMS &13C: -23.3 o/oo
	(95.4%)	16253 - 15941 cal BC	(18202 - 17890 cal BP)	
	Pretre Analyzed M Analysis Percent Modern ( Fraction Modern ( Measured Radiocarb	Material:Woody Materialeatment:(wood) acid/alkali/acidMaterial:WoodService:AMS-Standard deliveryCarbon: $16.00 + / - 0.08 \text{ pMC}$ Carbon: $0.1600 + / - 0.0008$ D14C: $-839.98 + / - 0.80 \text{ o/oo}$ $\Delta 14C$ : $-841.37 + / - 0.80 \text{ o/oo}$ (without d13C correcticbration:BetaCal4.20: HPD met	1950:2022) on): 14690 +/- 40 BP	

Results are ISO/IEC-17025:2017 accredited. No sub-contracting or student labor was used in the analyses. All work was done at Beta in 4 in-house NEC accelerator mass spectrometers and 4 Thermo IRMSs. The "Conventional Radiocarbon Age" was calculated using the Libby half-life (5568 years), is corrected for total isotopic fraction and was used for calendar calibration where applicable. The Age is rounded to the nearest 10 years and is reported as radiocarbon years before present (BP), "present" = AD 1950. Results greater than the modern reference are reported as percent modern carbon (pMC). The modern reference standard was 95% the 14C signature of NIST SRM-4990C (oxalic acid). Quoted errors are 1 sigma counting statistics. Calculated sigmas less than 30 BP on the Conventional Radiocarbon Age are conservatively rounded up to 30. d13C values are on the material itself (not the AMS d13C). d13C and d15N values are relative to VPDB. References for calendar calibrations are cited at the bottom of calibration graph pages.

# BetaCal 4.20

# **Calibration of Radiocarbon Age to Calendar Years**

(High Probability Density Range Method (HPD): INTCAL20)



#### Database used INTCAL20

### References

**References to Probability Method** 

Bronk Ramsey, C. (2009). Bayesian analysis of radiocarbon dates. Radiocarbon, 51(1), 337-360. **References to Database INTCAL20** Reimer, et al., 2020, Radiocarbon 62(4):725-757.

# **Beta Analytic Radiocarbon Dating Laboratory**

4985 S.W. 74th Court, Miami, Florida 33155 • Tel: (305)667-5167 • Fax: (305)663-0964 • Email: beta@radiocarbon.com

#### Page 3 of 3



#### ISO/IEC 17025:2017-Accredited Testing Laboratory

## **Quality Assurance Report**

This report provides the results of reference materials used to validate radiocarbon analyses prior to reporting. Known-value reference materials were analyzed quasi-simultaneously with the unknowns. Results are reported as expected values vs measured values. Reported values are calculated relative to NISTSRM-1990C and corrected for isotopic fractionation. Results are reported using the direct analytical measure percent modern carbon (pMC) with one relative standard deviation. Agreement between expected and measured values is taken as being within 2 sigma agreement (error x 2) to account for total laboratory error.

Report Date:January 20, 2022Submitter:Mr. Curtis J. Koger

#### **QA MEASUREMENTS**

Reference 1	
Expected Value:	0.42 +/- 0.04 pMC
Measured Value:	0.41 +/- 0.03 pMC
Agreement:	Accepted
Reference 2	
Expected Value:	129.41 +/- 0.06 pMC
Measured Value:	129.59 +/- 0.34 pMC
Agreement:	Accepted
Reference 3	
Expected Value:	96.69 +/- 0.50 pMC
Measured Value:	97.02 +/- 0.27 pMC
Agreement:	Accepted

COMMENT:

All measurements passed acceptance tests.

Validation:

1:1

Date: January 20, 2022



#### ISO/IEC 17025:2017-Accredited Testing Laboratory

September 01, 2022

Mr. Curtis J. Koger Associated Earth Sciences, Incorporated 911 Fifth Avenue Suite 100 Kirkland, WA 98033 United States

#### **RE: Radiocarbon Dating Results**

Dear Mr. Koger,

Enclosed is the radiocarbon dating result for one sample recently sent to us. As usual, specifics of the analysis are listed on the report with the result and calibration data is provided where applicable. The Conventional Radiocarbon Age has been corrected for total fractionation effects and where applicable, calibration was performed using 2020 calibration databases (cited on the graph pages).

The web directory containing the table of results and PDF download also contains pictures, a cvs spreadsheet download option and a quality assurance report containing expected vs. measured values for 3-5 working standards analyzed simultaneously with your samples.

The reported result is accredited to ISO/IEC 17025:2017 Testing Accreditation PJLA #59423 standards and all pretreatments and chemistry were performed here in our laboratories and counted in our own accelerators here in Miami. Since Beta is not a teaching laboratory, only graduates trained to strict protocols of the ISO/IEC 17025:2017 Testing Accreditation PJLA #59423 program participated in the analysis.

As always Conventional Radiocarbon Ages and sigmas are rounded to the nearest 10 years per the conventions of the 1977 International Radiocarbon Conference. When counting statistics produce sigmas lower than +/- 30 years, a conservative +/- 30 BP is cited for the result unless otherwise requested. The reported d13C was measured separately in an IRMS (isotope ratio mass spectrometer). It is NOT the AMS d13C which would include fractionation effects from natural, chemistry and AMS induced sources.

When interpreting the result, please consider any communications you may have had with us regarding the sample. As always, your inquiries are most welcome. If you have any questions or would like further details of the analysis, please do not hesitate to contact us.

Thank you for prepaying the analysis. As always, if you have any questions or would like to discuss the results, don't hesitate to contact us.

Sincerely,

Chis Patrick Digital signature on file

Chris Patrick Vice President of Laboratory Operations



ISO/IEC 17025:2017-Accredited Testing Laboratory

# **REPORT OF RADIOCARBON DATING ANALYSES**

Curtis J. Koger		Report Date:	September 01, 2022	
Associated Earth Scienc	es, Incorporated	Material Received:	August 09, 2022	
Laboratory Number	Sam	ple Code Number		adiocarbon Age (BP) or bon (pMC) & Stable Isotopes
Beta - 635682	2	200367_EB10W@22'	12450 +/- 40 BP	IRMS δ13C: -26.4 ο/οο
	(	12803 - 12366 cal BC 12991 - 12815 cal BC	(14752 - 14315 cal BP) (14940 - 14764 cal BP)	
	Pretreatr Analyzed Mate Analysis Ser Percent Modern Car Fraction Modern Car D Δ Measured Radiocarbon	erial: Woody Material ment: (plant material) acid/a erial: Plant material vice: AMS-Standard deliver bon: 21.23 +/- 0.11 pMC bon: 0.2123 +/- 0.0011 14C: -787.72 +/- 1.06 o/oo 14C: -789.57 +/- 1.06 o/oo Age: (without d13C correcti tion: BetaCal4.20: HPD me	ry (1950:2022) ion): 12470 +/- 40 BP	

Results are ISO/IEC-17025:2017 accredited. No sub-contracting or student labor was used in the analyses. All work was done at Beta in 4 in-house NEC accelerator mass spectrometers and 4 Thermo IRMSs. The "Conventional Radiocarbon Age" was calculated using the Libby half-life (5568 years), is corrected for total isotopic fraction and was used for calendar calibration where applicable. The Age is rounded to the nearest 10 years and is reported as radiocarbon years before present (BP), "present" = AD 1950. Results greater than the modern reference are reported as percent modern carbon (pMC). The modern reference standard was 95% the 14C signature of NIST SRM-4990C (oxalic acid). Quoted errors are 1 sigma counting statistics. Calculated sigmas less than 30 BP on the Conventional Radiocarbon Age are conservatively rounded up to 30. d13C values are on the material itself (not the AMS d13C). d13C and d15N values are relative to VPDB. References for calendar calibrations are cited at the bottom of calibration graph pages.

# BetaCal 4.20

# **Calibration of Radiocarbon Age to Calendar Years**

(High Probability Density Range Method (HPD): INTCAL20)

(Variables: d13C = -26.4 o/oo)

Laboratory number Beta-635682

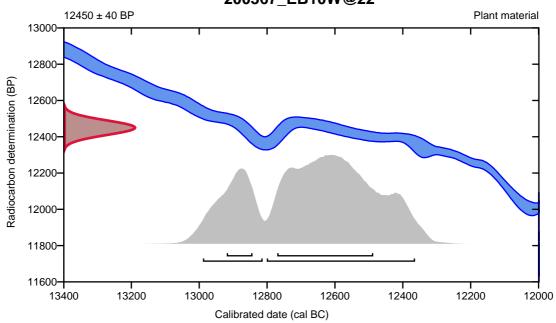
Conventional radiocarbon age 12450 ± 40 BP

95.4% probability

(72.3%)	12803 - 12366 cal BC	(14752 - 14315 cal BP)
(23.1%)	12991 - 12815 cal BC	(14940 - 14764 cal BP)

#### 68.2% probability

(55.2%)	12772 - 12489 cal BC	(14721 - 14438 cal BP)
(13%)	12921 - 12845 cal BC	(14870 - 14794 cal BP)



200367\_EB10W@22'

#### Database used INTCAL20

INTOALE

### References

**References to Probability Method** 

Bronk Ramsey, C. (2009). Bayesian analysis of radiocarbon dates. Radiocarbon, 51(1), 337-360. **References to Database INTCAL20** Reimer, et al., 2020, Radiocarbon 62(4):725-757.

# **Beta Analytic Radiocarbon Dating Laboratory**

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#### ISO/IEC 17025:2017-Accredited Testing Laboratory

## **Quality Assurance Report**

This report provides the results of reference materials used to validate radiocarbon analyses prior to reporting. Known-value reference materials were analyzed quasi-simultaneously with the unknowns. Results are reported as expected values vs measured values. Reported values are calculated relative to NISTSRM-1990C and corrected for isotopic fractionation. Results are reported using the direct analytical measure percent modern carbon (pMC) with one relative standard deviation. Agreement between expected and measured values is taken as being within 2 sigma agreement (error x 2) to account for total laboratory error.

Report Date:September 01, 2022Submitter:Mr. Curtis J. Koger

#### **QA MEASUREMENTS**

0.44 +/- 0.04
0.44 +/- 0.04 pMC
Accepted
129.41 +/- 0.06 pMC
129.49 +/- 0.39 pMC
Accepted
96.69 +/- 0.50 pMC
96.76 +/- 0.31 pMC
Accepted

COMMENT: All measurements passed acceptance tests.

Validation:

Chris Patrick Digital signature on file

Date: September 01, 2022