2569.26.007

g-logics
Logical Solutions for Complex Problems

November 29, 2012
G-Logics Project Number 01-0439-D

Mr. Peter Campbell
Alaska Department of Environmental Conservation
43335 Kalifonsky Beach Road, Suite 11
Soldotna, AK 99669

Subject: **Well Decommissioning Report**
Former Leased Facility, UST ID #2653, LLC.
East Ramp, King Salmon Airport
King Salmon, AK 99633

Dear Mr. Campbell:

Per your request, G-Logics Inc. (G-Logics) has completed the decommissioning of four groundwater-monitoring wells and one unused water-supply well located on the subject property (Figures 1 and 2). The purpose of this work was to meet the requirements for site closure outlined in the *Corrective Action Complete Determination* letter from the Alaska Department of Environmental Conservation (ADEC) dated April 25, 2012.

All work was performed by a "qualified person" as required by 18 AAC 78.995(118). The four groundwater-monitoring wells were decommissioned in accordance with ADEC's November 2011 *Monitoring Well Guidance.* The water-supply well was decommissioned in accordance with American Water Works Association (AWWA) standard A100-97, *Water Wells*, Appendix H, adopted by Alaska regulation 18 AAC 80. This report contains supporting documentation regarding this work.

G-Logics, Inc.
40 2nd Ave SE
Issaquah, WA 98027
T: 425-391-6874
F: 425-313-3074
01-0439-D-RT.doc

Well Decommission

Groundwater-monitoring wells GL-1 thru GL-4 and the unused water-supply well were located in the area south of the King Salmon Airport East Ramp (Figures 1 and 2). Construction details for the groundwater monitoring wells are included as Appendix A.

A licensed well-driller (Karis Vandehey) was retained to close these wells and to prepare/submit the closure documentation required by ADEC (Appendix B). Prior to conducting the well-decommissioning work, a building permit from the State of Alaska (Aviation Leasing office) was obtained by G-Logics to conduct work onsite (Appendix C). The permit was required in order to remove permanent structures (monitoring wells) on the property that was located within the King Salmon airport-perimeter fence.

The five wells were decommissioned by Karis Vandehey on October 16, 2012. All wells were closed in place by filling the well with bentonite chip and cutting the casing approximately two feet below the surface. The remaining top two feet were filled with sand and surface conditions were restored to match the surrounding area.

ADEC Deliverables

With closure of the wells, site cleanup work is understood to be completed. Following your review and approval, it is G-Logics understanding ADEC will issue Trident an updated Corrective Action Complete Determination letter.

Limitations

The provided services were intended to close and document the decommissioning of four groundwater-monitoring wells and one unused water-supply well located on the property. This work did not include other services not specifically described above.

No warranty, express or implied, is made.

Closing

We trust the information presented in this report meets your needs at this time. Should you require additional information or have any questions, please contact us at your convenience. Thank you again for this opportunity to be of service.

Respectfully submitted,
G-Logics, Inc.

Rory Galloway, LG, LHG
Principal

Karis A Vandehey, LG, WSLD
Staff Geologist

FIGURES

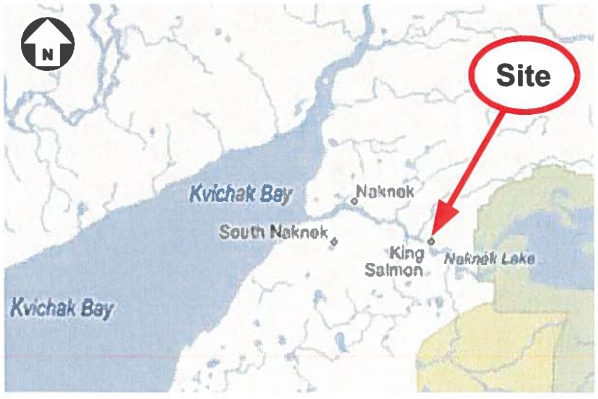
Figure 1:	Site Location Map
Figure 2:	Site Diagram

APPENDICES

Appendix A:	Boring / Well Logs
Appendix B:	Boring / Well Decommission Logs
Appendix C:	Permit Documentation

cc Kurt Esveldt, Trident
John Heins, Trident
James Thorsness, ADOT
Paul Horwath, ADEC

FIGURES



Mapping Reference: Delorme, Google Maps, and FAA

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Project File: 01-0439-C-RT-F1.vsd

Site Location Maps

UST ID # 2653

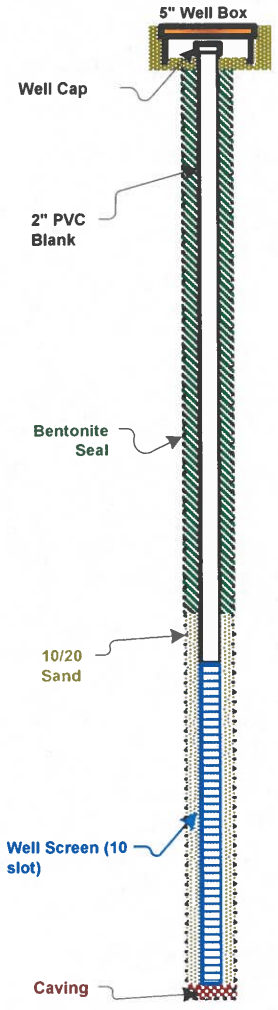
East Ramp of King Salmon Airport

King Salmon, Alaska

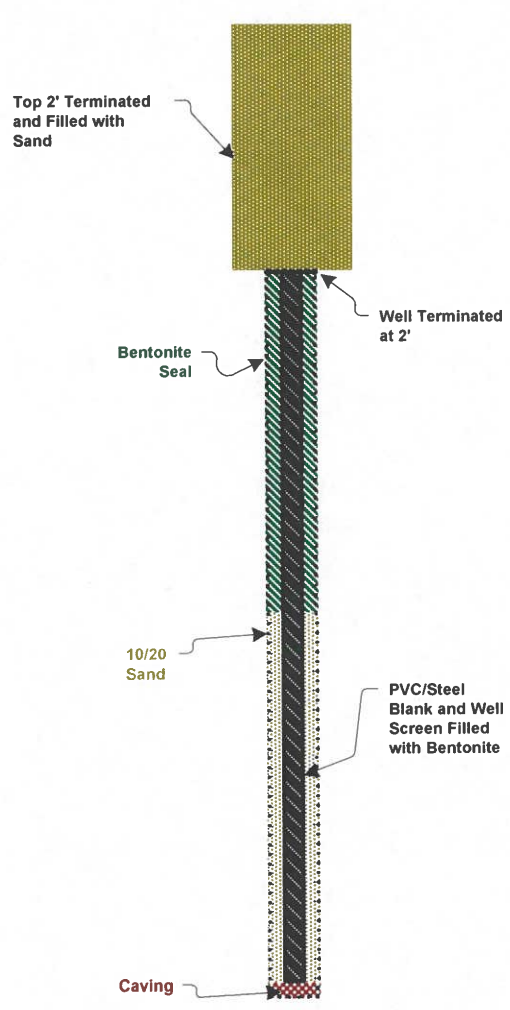
Figure

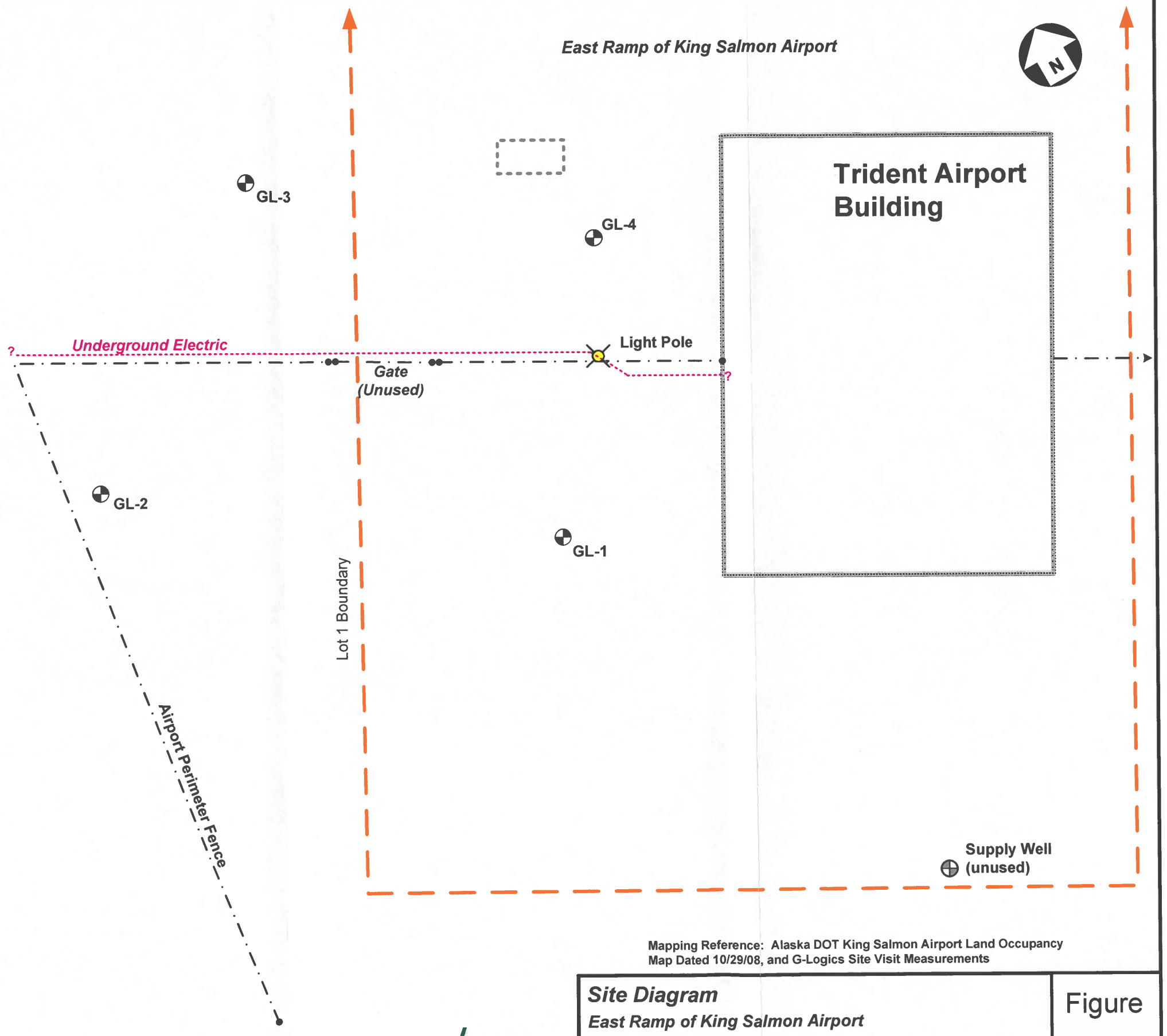
1

TYPICAL MONITORING WELL CONSTRUCTION (Before)



TYPICAL WELL CLOSURE (After)





Legend

- Former UST
- Decommissioned Groundwater-Monitoring Well
- Decommissioned Unused Water-Supply Well

0 ft. 12 ft. 20 ft. 40 ft.

Approximate Drawing Scale: 1" = 20'

Mapping Reference: Alaska DOT King Salmon Airport Land Occupancy Map Dated 10/29/08, and G-Logics Site Visit Measurements

Note: This figure contains information in color. Black & white photocopies may not be suitable for review.

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Site Diagram
East Ramp of King Salmon Airport
UST ID # 2653
King Salmon, Alaska

Figure 2

Project File: 01-0439-D-RT-F2.vsd

APPENDIX A

Unified Soil Classification System (USCS)

PRIMARY DIVISIONS			SYMBOL	DESCRIPTIONS
COARSE GRAINED SOILS Sands & Gravels, Over 50% retained on #200 sieve	**GRAVELS** Over 50% of coarse material retained on #4 sieve	**CLEAN GRAVEL** Less than 5% passing #200 sieve	GW	Well graded gravel, many different particle sizes, little or no fines
			GP	Poorly graded, few different particle sizes, little or no fines
		GRAVEL WITH FINES	GM	Silty gravels, gravel-sand-silt mixtures
			GC	Clayey gravels, gravel-sand-clay mixtures
	SAND Over 50% of coarse material passed #4 sieve	**CLEAN SANDS** Less than 5% passing #200 sieve	SW	Well graded gravel, many different particle sizes, little or no fines
			SP	Poorly graded, few different particle sizes, little or no fines
		SAND WITH FINES	SM	Silty gravels, gravel-sand-silt mixtures
			SC	Clayey gravels, gravel-sand-clay mixtures
FINE GRAINED SOILS Silts & Clays, Over 50% passing the #200 sieve	**SILTS AND CLAYS** Liquid limit is less than 50 %		ML	Inorganic silts, slight to no plasticity
			CL	Inorganic clays, low to moderate plasticity
			OL	Organic silts and clays of low plasticity
	SILTS AND CLAYS Liquid limit is more than 50 %		MH	Inorganic silts, moderate to high plasticity
			CH	Inorganic clays, high plasticity, fat clays
			OH	Organic silts and clays of high plasticity
Highly Organic Soils			PT	Peat and other highly organic soils

Soil Samples

- Disturbed, bag, bulk, or grab sample
- Standard penetration split spoon sample
- Cuttings
- * No Sample Recovery
- P Tube Pushed, Not Driven

Field Measurements

- Water Level Observed During Drilling
- Groundwater Seepage (Testpits)
- OVA Organic Vapor Analyzer
- PID Photoionization Detector
- ppmv Parts Per Million by Volume

Note: Blows per foot is the number of blows used to drive a split-spoon (2" OD) sampler through the last 12 inches of an 18-inch sampling attempt. One blow is a 30-inch fall of a 140-pound hammer.

Note: The line separating strata on the logs represents approximate boundaries only. The actual transition may be gradual. No warranty is provided as to the continuity of the strata between exploration locations. Logs represent the soil section observed at the exploration location on the date of exploration only.

ExplorationLogLegend.pub

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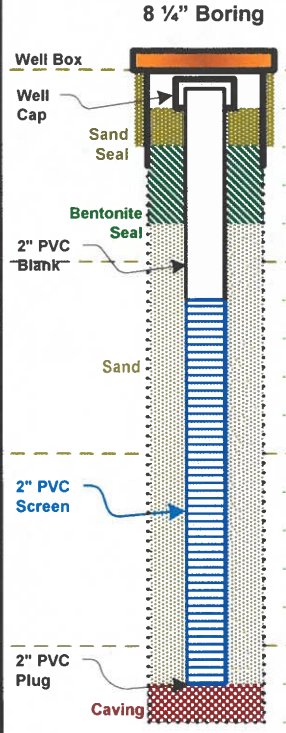
Exploration Log Legend

boring_log_gl-1.vsd

BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)
			Surface: Sand			
0			Sand, yellow brown, moist, medium dense, medium fine grain		SP	
5 10 10 10			Silt, yellow brown, medium dense	60	ML	0
			Sand, yellow brown, moist, dense grain, poorly graded, medium fine Becomes wet at 8'		SP	
3 3 5 6		GL-1-10	Gray brown at +/- 10', No odor of petroleum			0
5 12 21 30			EOB at 17'			0
30	Depth in feet					

WELL CONSTRUCTION



Drilling Method: Hollow-stem auger	Date: 8-4-2010	Other Information:	
Drilling Company: Discovery Drilling	Weather: Overcast, Rain	No concrete used around well box, due to frost-heaving conditions. Box placed in sand +/- 1' above grade and staked	
Boring Diameter: 8 ¼"	Page 1 of 1		
Logged By: Rory Galloway			

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Boring/Well Log
East Ramp of King Salmon Airport
UST ID #2653
King Salmon, AK

GL-1

boring_log_gl-2.vsd

BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
			Surface: Sand				8 ¼" Boring
0			Sand, yellow brown, moist, medium dense, medium-fine grain poorly graded		SP		Well Box, Well Cap, Sand Seal
4 5 4 4		GL-2-7	Becomes gray brown, at 8' turns wet ▽	100		0	Bentonite Seal, 2" PVC Blank
5 7 12		GL-2-11	Becomes Coarse sand at 11.5' - 12', back to fine medium grain at 14'	100		0	Sand, 2" PVC Screen
7 14 7			EOB at 17' ▽	100		0	2" PVC Plug, Caving
20							
25							
30			Depth in feet				

Drilling Method: Hollow-stem auger	Date: 8-4-2010	Other Information: No concrete used around well box, due to frost-heaving conditions. Box placed in sand +/- 1' above grade and staked	
Drilling Company: Discovery Drilling	Weather: Overcast, Sun		
Boring Diameter: 8 ¼"	Page 1 of 1		
Logged By: Rory Galloway			

g-logics

Boring/Well Log
East Ramp of King Salmon Airport
UST ID #2653
King Salmon, AK

GL-2

boring_log_gl-3.vsd

BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
			Surface: Sand				8 ¼" Boring
			Sand, yellow brown, moist, medium dense, medium-fine grain poorly graded		SP		Well Box, Well Cap, Sand Seal
3 0 0 1		GL-3-7	Becomes gray brown, at 8' turns wet ▽	100		0	Bentonite Seal, 2" PVC Blank, Sand
3 6 10 12			Becomes Coarse sand at 11.5' - 12', back to fine medium grain at 14'	100		0	2" PVC Screen
9 17 21 26			EOB at 17' ▽	100		0	2" PVC Plug, Caving

Depth in feet

Drilling Method:	Hollow-stem auger	Date: 8-4-2010	Other Information: No concrete used around well box, due to frost-heaving conditions. Box placed in sand +/- 1' above grade and staked
Drilling Company:	Discovery Drilling	Weather: Rain, Wind	
Boring Diameter:	8 ¼"	Page 1 of 1	
Logged By:	Rory Galloway		

g-logics

Boring/Well Log
East Ramp of King Salmon Airport
UST ID #2653
King Salmon, AK

GL-3

boring_log_gl-4.vsd

BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
			Surface: Sand				8 ¼" Boring
			Sand, yellow brown, moist, medium dense, medium fine grain poorly sorted,		SP		Well Box, Well Cap, Sand Seal, Bentonite Seal
7, 9, 14, 14				100		0	2" PVC Blank
7, 10, 10, 9		GL-4-9	Sand, olive gray brown, wet, petroleum odor, moderate silt, sheen on water sample	100		1100	Sand
4, 6, 8, 11		GL-4-11	Petroleum odor faint Gray brown at +/- 12'	100		190	2" PVC Screen
9, 14, 19, 19		GL-4-16	No odor of petroleum EOB at 17'	100		20	2" PVC Plug, Caving

Depth in feet

Drilling Method: Hollow-stem auger	Date: 8-4-2010	Other Information: No concrete used around well box, due to frost-heaving conditions. Box placed in sand +/- 1' above grade and staked	
Drilling Company: Discovery Drilling	Weather: Rain and Wind		
Boring Diameter: 8 ¼"	Page 1 of 1		
Logged By: Rory Galloway			

g-logics

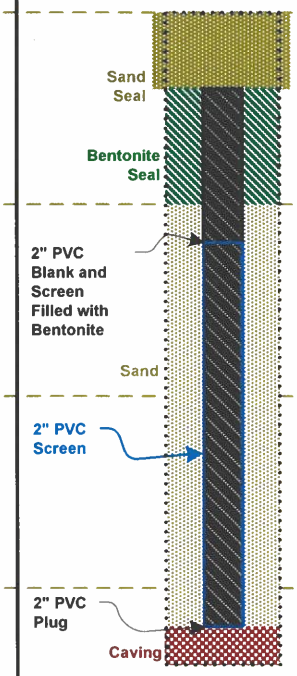
Boring/Well Log
East Ramp of King Salmon Airport
UST ID #2653
King Salmon, AK

GL-4

APPENDIX B

decommission_log_gl-1.vsd

BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
			Surface: Sand				8 ¼" Boring
			2" PVC riser hand excavated and cut off at two feet below ground surface. Remaining screen and riser backfilled in place with bentonite chip. Excavation backfilled with sand to match surface conditions.				
			EOB at 17'				



0 5 10 15 20 25 30

Depth in feet

Drilling Method: N/A	Date: 10-16-2012	Other Information:
Drilling Company: G-Logics	Weather: Overcast, Cold	
Boring Diameter: 8 ¼"	Page 1 of 1	
Logged By: Karis Vandehey		

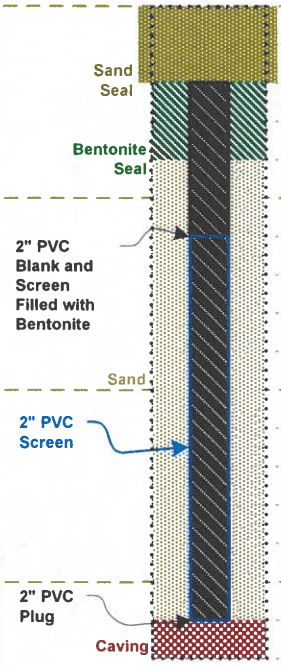
g-logics

Boring/Well Decommission Log
East Ramp of King Salmon Airport
UST ID #2653
King Salmon, AK

GL-1

decommission_log_gl-2.vsd

BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
			Surface: Sand				8 ¼" Boring
			2" PVC riser hand excavated and cut off at two feet below ground surface. Remaining screen and riser backfilled in place with bentonite chip. Excavation backfilled with sand to match surface conditions.				
			EOB at 17'				



0 5 10 15 20 25 30

Depth in feet

Drilling Method: N/A	Date: 10-16-2012	Other Information:
Drilling Company: G-Logics	Weather: Overcast, Cold	
Boring Diameter: 8 ¼"	Page 1 of 1	
Logged By: Karis Vandehey		

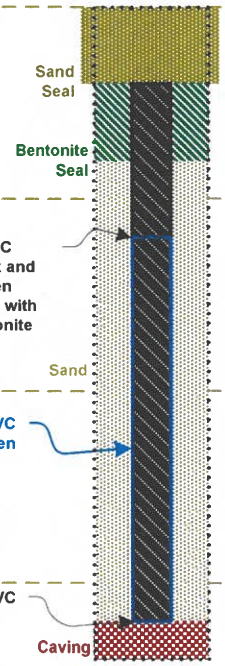
g-logics

Boring/Well Decommission Log
East Ramp of King Salmon Airport
UST ID #2653
King Salmon, AK

GL-2

decommission_log_gl-3.vsd

BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
			Surface: Sand				8 ¼" Boring
			2" PVC riser hand excavated and cut off at two feet below ground surface. Remaining screen and riser backfilled in place with bentonite chip. Excavation backfilled with sand to match surface conditions.				
			EOB at 17'				



0 5 10 15 20 25 30

Depth in feet

Drilling Method: N/A	Date: 10-16-2012	Other Information:
Drilling Company: G-Logics	Weather: Overcast, Cold	
Boring Diameter: 8 ¼"	Page 1 of 1	
Logged By: Karis Vandehey		

g-logics

Boring/Well Decommission Log
East Ramp of King Salmon Airport
UST ID #2653
King Salmon, AK

GL-3

decommission_log_gl-4.vsd

BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
			Surface: Sand				8 ¼" Boring
			2" PVC riser hand excavated and cut off at two feet below ground surface. Remaining screen and riser backfilled in place with bentonite chip. Excavation backfilled with sand to match surface conditions.				Sand Seal; Bentonite Seal; 2" PVC Blank and Screen Filled with Bentonite; Sand; 2" PVC Screen; 2" PVC Plug; Caving
			EOB at 17'				

0 5 10 15 20 25 30

Depth in feet

Drilling Method: N/A	Date: 10-16-2012	Other Information:
Drilling Company: G-Logics	Weather: Overcast, Cold	
Boring Diameter: 8 ¼"	Page 1 of 1	
Logged By: Karis Vandehey		

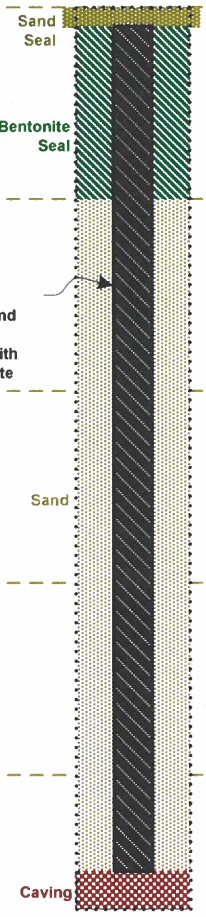
g-logics

Boring/Well Decommission Log
East Ramp of King Salmon Airport
UST ID #2653
King Salmon, AK

GL-4

decommission_log_water-supply well.vsd

BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
			Surface: Sand				8 ¼" Boring
			6" steel riser excavated and cut off at two feet below ground surface. Remaining screen and riser backfilled in place with bentonite chip. Excavation backfilled with sand to match surface conditions.				
			EOB at 90'				



0 20 40 60 80 100

Depth in feet

Drilling Method: N/A	Date: 10-16-2012	Other Information:
Drilling Company: G-Logics	Weather: Overcast, Cold	
Boring Diameter: Unknwn	Page 1 of 1	
Logged By: Karis Vandehey		

g-logics

Boring/Well Decommission Log
East Ramp of King Salmon Airport
UST ID #2653
King Salmon, AK

Supply Well

APPENDIX C

THE STATE of ALASKA
GOVERNOR SEAN PARNELL

Department of Transportation and Public Facilities

STATEWIDE AVIATION
Central Region Aviation Leasing
P.O. Box 196900, 99519-6900
4111 Aviation Avenue, 99502
Anchorage, AK
Main: 907.269.0740
Fax: 907.269.0489

September 20, 2012

Re: King Salmon Airport
Lease ADA-08117

Kurt Esveldt
Trident Seafoods, Inc.
5245 Shilshole Ave. NW
Seattle, WA 98107

Dear Mr. Esveldt:

Enclosed is a Building Permit Certificate which authorizes the closing of four groundwater-monitoring wells and one unused water-supply well on Lot 1, Block 100, at the King Salmon Airport. Please post the certificate in a clearly visible location on the site and coordinate all activities with the King Salmon Airport Manager, Kyler Hylton, at (907) 246-3325.

We are aware that two of the monitoring wells are not within your lease lot. This letter authorizes you to close two monitoring wells on the State's property adjacent to your lot as described on the Site Diagram Figure 2 by G-Logics named GL-2 and GL-3.

This work must be performed or directly supervised by a "qualified person" as defined in 18 AAC 78.995(118).

If you have any questions, please call me at (907) 269-0739 or e-mail me at jim.thorsness@alaska.gov. Thank you.

Sincerely,

Jim Thorsness
Airport Leasing Specialist III

fn

Enclosures (2): Building Permit Certificate
Exhibit A

cc w/encl: Kyler Hylton, King Salmon Airport Manager

State of Alaska

Department of Transportation and Public Facilities
Anchorage Office
Aviation Leasing

BUILDING PERMIT CERTIFICATE

By this Permit, Trident Seafoods is authorized to perform the following construction or demolition on Lot 1 Block 100 on the King Salmon Airport under Lease Agreement ADA-08117:
Closure of existing groundwater-monitoring wells and unused water-supply well. Four groundwater-monitoring wells will be closed in accordance with ADEC Monitoring Well Guidance November 2011. The unused water-supply well will be closed in accordance with American Water Works Association (AWWA) standard A100-97, Water Wells, Appendix H, adopted by Alaska regulation 18 AAC 80. Both closure procedures call for the filling of wells with bentonite or concrete, terminating 2 feet below the surface. Lessee must follow the instructions shown on the attached sheet labeled as Exhibit A.

THIS PERMIT EXPIRES AT MIDNIGHT ON SEPTEMBER 18, 2013.

No construction or demolition other than that specifically stated above is authorized by this Permit. For construction changes or additions, contact the State of Alaska, Department of Transportation and Public Facilities.

TRANSPORTATION & PUBLIC FACILITIES · STATE OF ALASKA ·

Signed: _____

Title: Chief, Anchorage Office, Aviation Leasing

Date: 9-19-2012

POST THIS BUILDING PERMIT CERTIFICATE AT THE CONSTRUCTION SITE

EXHIBIT A

ADA-08117-eleasing, Building Permit Certificate issued September 18, 2012.

The Lessee shall comply with the following:

- Comply with the requirements set forth in FAA Advisory Circular 150/5370-2E, "Operational Safety on Airports during Construction."
- Contact the King Salmon Air Traffic Control Tower 24 hours before beginning work, (907) 246-8331.
- If any vehicles in excess of 7' are required to complete the work, a separate airspace is required.
- At no time are workers or vehicles allowed to enter movement area of the King Salmon Airport without approval of the King Salmon, Air Traffic Control Tower.
- The Lessee will provide the State of Alaska a copy of ADEC's closure report by December 15, 2012.
- This work must be performed or directly supervised by a "qualified person" as defined in 18 AAC 78.995(118).
- The Lessor agrees to allow the Lessee to close two monitoring wells on the State's property adjacent to Lessee's lot as described on the Site Diagram Figure 2 by G-Logics named GL-2 and GL-3.
- This determination expires on October 28, 2012.
- The building permit certificate expires on September 18, 2013.