



SW396  
Division of  
Solid and Hazardous Waste

FEB 26 2015  
2015-003492

February 26, 2015

Scott Anderson  
Director  
Utah Division of Solid and Hazardous Waste  
P.O. Box 144880  
Salt Lake City, UT 84114-4880

**Subject: Stericycle, Inc. – Tooele County Solid Waste Incinerator Permit Application Submittal**

Dear Mr. Anderson:

Stericycle, Inc. (Stericycle) is proposing to construct a hospital, medical, and infectious waste incinerator (HMIWI) facility in Tooele County, Utah (Tooele facility).

Please note that Stericycle is also submitting this Solid Waste Incinerator Permit Application in accordance with Settlement Agreement No. 2013051501 with the Utah Division of Air Quality (UDAQ).

Thank you for your attention to this submittal. If you have any questions, please contact me at (801) 936-1260, ext. 17.

Sincerely,  
**Stericycle, Inc.**

A handwritten signature in black ink that reads "Jay Vance".

Jay Vance  
Environmental Quality Manager

cc: Al Burson – Stericycle  
Dale Rich – Stericycle  
Gordon Jones – HAL



**APPLICATION FOR  
TOOELE COUNTY FACILITY  
SOLID-WASTE INCINERATOR PERMIT**

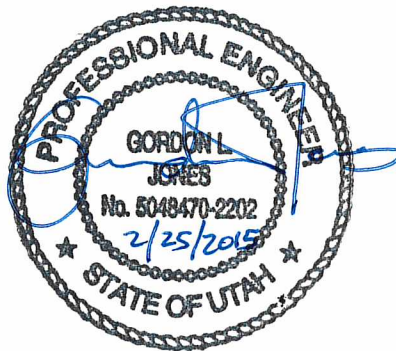
**HAL Project No.: 370.01.120**

**February 2015**

# STERICYCLE, INC.

## APPLICATION FOR TOOELE COUNTY FACILITY SOLID-WASTE INCINERATOR PERMIT

(HAL Project No.:370.01.120)



Gordon L. Jones, P.E.  
Project Manager

**HANSEN  
ALLEN  
& LUCE<sub>inc</sub>**  
ENGINEERS

February 2015

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## **LIST OF EXIBITS**

<b>EXHIBIT A</b>	<b>CERTIFICATE OF SALE</b>
<b>EXHIBIT B</b>	<b>NOTICE TO NEIGHBORING PROPERTY OWNERS</b>
<b>EXHIBIT C</b>	<b>TOOELE COUNTY CONDITIONAL USE PERMIT</b>
<b>EXHIBIT D</b>	<b>HISTORICAL SURVEY DOCUMENTATION</b>
<b>EXHIBIT E</b>	<b>DOCUMENTATION REGARDING SPECIES OF CONCERN</b>
<b>EXHIBIT F</b>	<b>TRAFFIC IMPACT</b>

## **LIST OF APPENDICES**

<b>APPENDIX A</b>	<b>PLAN OF OPERATIONS</b>
<b>APPENDIX B</b>	<b>SITE ENGINEERING DRAWINGS</b>
<b>APPENDIX C</b>	<b>INCINERATION PROCESS AND AIR POLLUTION CONTROL SYSTEM</b>
<b>APPENDIX D</b>	<b>AIR QUALITY PERMIT SUBMITTAL DOCUMENTATION</b>
<b>APPENDIX E</b>	<b>GEOTECHNICAL INVESTIGATION</b>
<b>APPENDIX F</b>	<b>HYDROLOGIC ANALYSIS</b>
<b>APPENDIX G</b>	<b>RUN-ON AND RUNOFF CONTROL SYSTEMS</b>

## ABBREVIATIONS AND UNITS

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ac	acre [area]
ac-ft	acre-feet [volume]
AGEC	Applied Geotechnical Engineering Consultants, Inc.
AGRC	Utah Automated Geographic Reference Center
BLM	U.S. Bureau of Land Management
cfs	cubic foot per second (ft <sup>3</sup> /s) [flow rate]
DAQ	Utah Division of Air Quality
DDW	Utah Division of Drinking Water
DEQ	Utah Department of Environmental Quality
DOI	U.S. Department of the Interior
DSH	Utah Division of State History
DSHW	Utah Division of Solid and Hazardous Waste
DWR	Utah Division of Wildlife Resources
EPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency
ft	foot [length]
ft <sup>2</sup>	square foot [area]
gal	gallon [volume]
gpd	gallons per day [flow rate]
gpm	gallons per minute [flow rate]
GSL	Great Salt Lake
HAL	Hansen, Allen & Luce, Inc.
HEC	Hydrologic Engineering Center
HMS	Hydrologic Modeling System
hr	hour [time]
in.	inch [length]
mi	mile [length]
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service
NRCS	Natural Resources Conservation Service
P.E.	Professional Engineer
P.L.S.	Professional Land Surveyor
s	second [time]
SHPO	Utah State Historic Preservation Office
SITLA	State of Utah School and Institutional Trust Lands Administration
TCHD	Tooele County Health Department
UAC	Utah Administrative Code
UCA	Utah Code Annotated
UGS	Utah Geological Survey
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
yr	year [time]

# INTRODUCTION

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Stericycle, Inc. (Stericycle), currently operates a Class V Incinerator located at 90 North 1100 West, North Salt Lake, UT 84054. Stericycle is submitting a new permit application in anticipation of relocating their operation from North Salt Lake to a new incinerator facility to be constructed in Tooele County. This application addresses only the requirements of the Utah Division of Solid and Hazardous Waste.

Part I: Facility General Information was submitted on October 31, 2014. This submittal includes an update to the Part I application and also includes Part II which addresses Facility Technical Information. Therefore, this document contains both parts that comprise a complete official application.

The purpose of this application is to demonstrate that the incinerator will be located, designed, constructed, operated, and closed in compliance with the requirements of Utah Administrative Code, Rules R315-301 through R315-320 (Utah Solid Waste Permitting and Management Rules), and Utah Code Annotated, Sections 19-6-101 through 19-6-123 (Utah Solid and Hazardous Waste Act).

## **APPLICATION FORM**

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The following pages consist of the completed Utah Solid Waste Incinerator Permit Application Form, Part I, General Information.

# Utah Solid Waste Incinerator Permit Application Form

<b>Part I General Information</b>										APPLICANT: PLEASE COMPLETE ALL SECTIONS.											
<b>I. Incinerator Type<sup>1</sup></b>		<input checked="" type="checkbox"/> Large		Energy Recovery		<b>II. Application Type</b>		<input checked="" type="checkbox"/> New Application		<input type="checkbox"/> Facility Expansion											
		<input type="checkbox"/> Small		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				<input type="checkbox"/> Renewal Application				<input type="checkbox"/> Modification									
For Renewal Applications, Facility Expansion Applications and Modifications Enter Current Permit Number _____																					
<b>III. Facility Name and Location</b>																					
Legal Name of Facility Stericycle, Inc.																					
Site Address (street or directions to site) 9250 Rowley Rd														County Tooele							
City N/A										Zip Code 84029				Telephone N/A							
Township 1N		Range 8W		Section(s) 3				Quarter/Quarter Section SW				Quarter Section NE									
Main Gate Latitude		degrees 40		minutes 50		seconds 58		Longitude		degrees 112		minutes 43		seconds 53							
<b>IV. Facility Owner(s) Information</b>																					
Legal Name of Facility Owner Stericycle, Inc.																					
Address (mailing) 28161 North Keith Drive																					
City Lake Forest										State IL		Zip Code 60045				Telephone (847) 607-2008					
<b>V. Facility Operator(s) Information</b>																					
Legal Name of Facility Operator SAME																					
Address (mailing)																					
City										State		Zip Code				Telephone					
<b>VI. Property Owner(s) Information</b>																					
Legal Name of Property Owner Stericycle, Inc.																					
Address (mailing) 28161 North Keith Drive																					
City Lake Forest										State IL		Zip Code 60045				Telephone (847) 607-2008					
<b>VII. Contact Information</b>																					
Owner Contact Jay K. Vance, P.E.										Title Environmental Quality Manager											
Address (mailing) 90 Foxboro Drive																					
City North Salt Lake										State UT		Zip Code 84054				Telephone (801) 936-1260					
Email Address jay.vance@stericycle.com										Alternative Telephone (cell or other)						Ext. 17					
Operator Contact										Title											
Address (mailing)																					
City										State		Zip Code				Telephone					
Email Address										Alternative Telephone (cell or other)											
Property Owner Contact										Title											
Address (mailing)																					
City										State		Zip Code				Telephone					
Email Address										Alternative Telephone (cell or other)											

<sup>1</sup> Large means design capacity of over 10 tons per day and Small means design capacity of 10 tons or less per day

# Utah Solid Waste Incinerator Permit Application Form

## Part I General Information (Continued)

### VIII. Waste Types (check all that apply)

- ☐ All non-hazardous solid waste (see R315-315-7(3) for PCB requirements) **OR** specific waste to be accepted by facility
- ☐ Municipal Waste ☐ Asbestos  
☐ Construction & Demolition ☐ PCB's (R315-315-7(3) only)  
☐ Industrial ☒ Animals  
☒ Other Medical (see Plan of Operations)

### IX. Facility Design Capacity

Tons per Day or 49.3 average  
 Pound per Hour \_\_\_\_\_

### X. Fee and Application Documents

Indicate Documents Attached To This Application

☒ Application Fee: Amount \$5000

Commercial Facility Special Requirements

- ☒ Facility Map or Maps ☒ Facility Legal Description ☒ Plan of Operation ☒ Waste Description  
☒ Ash Sampling Plan ☒ Closure Design ☒ Cost Estimates ☒ Financial Assurance

☒ Documents required by UCA 19-6-108(9) and (10)

I HEREBY CERTIFY THAT THIS INFORMATION AND ALL ATTACHED PAGES ARE CORRECT AND COMPLETE.

Signature of Authorized Owner Representative

Title

Date

J. Brent Arnold  
J. Brent Arnold

President

10/31/14

Name typed or printed

Address

28161 N Keitua Dr, Lake Forest, IL 60045

Signature of Authorized Land Owner Representative (if applicable)

Title

Date

\_\_\_\_\_  
 \_\_\_\_\_

Address

Name typed or printed

Signature of Authorized Operator Representative (if applicable)

Title

Date

\_\_\_\_\_  
 \_\_\_\_\_

Address

Name typed or printed

# APPLICATION CHECKLIST

## Utah Solid Waste Incinerator Permit Application Checklist

The following pages are based on the Utah Solid Waste Incinerator Permit Application Checklist, I. Facility General Information, as obtained from the Utah Division of Solid and Hazardous Waste and have been replicated for inclusion and incorporation with this document.

<b>I. Facility General Information</b>	
<b>Description of Item</b>	<b>Location in Document</b>
<b>Ia Information Required of All Incinerators</b>	
Completed Part I General Information	p. 2
General description of facility (R315-310-3(1)(b))	p. 6
Legal description of property (R315-310-3(1)(c))	p. 6; Exhibit A
Proof of ownership, lease agreement, or other mechanism (R315-310-3(1)(c))	p. 6; Exhibit A
Area served by the facility including population (R315-310-3(1)(d))	p. 6
Facilities claiming non-commercial status, a demonstration that the landfill is not a commercial facility (see Utah Code Annotated 19-6-102(3) for definition of Commercial)	N/A
Waste type and anticipated daily volume (R315-310-3(1)(d))	p. 7
<b>Ib Information Required of All New or Laterally Expanding Incinerators</b>	
Intended schedule of construction (R315-302-2(2)(a))	p. 8
Name and address of all property owners within 1000 feet of the facility boundary (R315-310-3(2)(i))	p. 8
Documentation that a notice of intent to apply for a permit has been sent to all property owners listed above (R315-310-3(2)(ii))	p. 8; Exhibit B
Name of the local government with jurisdiction over the facility site (R315-310-3(2)(iii))	p. 8; Exhibit C
<b>Ic Location Standards for All New or Expanding Large Incinerators (R315-306-2(2))</b>	
Documentation that the facility has met the historical survey requirement of R315-302-1(2)(f)	p. 9; Exhibit D
Land use compatibility	p. 9
Maps showing the existing land use, topography, residences, parks, monuments, recreation areas or wilderness areas within 1000 feet of the site boundary	Fig. 2 (after p. 9)
Certifications that no ecologically or scientifically significant areas or endangered species are present in site area	p. 9; Exhibit E
Geology	p. 9
Geologic maps showing significant geologic features, faults, and unstable areas	Fig. 3 (after p. 9)
Maps showing site soils	Fig. 4 (after p. 9)

<b>I. Facility General Information</b>	
<b>Description of Item</b>	<b>Location in Document</b>
Surface Water	p. 10
Magnitude of 24 hour 25 year and 100 year storm events	p. 11
Maximum elevation of flood waters proximate to the facility	p. 11
Maximum elevation of flood water from 100 year flood for waters proximate to the facility	p. 11
Wetlands	p. 11
<b>Id Plan of Operations for All Incinerators (R315-310-3(1)(e) and R315-302-2(2))</b>	
Description of on-site waste handling procedures and an example of the form that will be used to record the weights or volumes of waste received (R315-302-2(2)(b) and R315-310-3(1)(f))	Appendix A Section I
Schedule for conducting inspections and monitoring, and examples of the forms that will be used to record the results of the inspections and monitoring (R315-302-2(2)(c), R315-302-2(5)(a), and R315-310-3(1)(g))	Appendix A Section IV
Contingency plans in the event of a fire or explosion (R315-302-2(2)(d))	Appendix A Section IX
Contingency plans for other releases, e.g. explosive gases or failure of run-off collection system (R315-302-2(2)(f))	Appendix A Section IX
Plan to control fugitive dust generated from roads, construction, and general operations (R315-302-2(2)(g))	Appendix A Section X
Description of maintenance of installed equipment (R315-302-2(2)(h))	Appendix A Sections IV and VII
Procedures for excluding the receipt of prohibited hazardous or PCB containing wastes (R315-302-2(2)(i))	Appendix A Section I and III
Procedures for controlling disease vectors (R315-302-2(2)(j))	Appendix A Section XII
A plan for alternative waste handling (R315-302-2(2)(k))	Appendix A Section I
A general training and safety plan for site operations (R315-302-2(2)(n))	Appendix A Section XI
Any recycling programs planned at the facility (R315-303-4(6))	Appendix A
An operational plan that, in addition to the requirements of Section R315-302-2, addresses cleaning of storage areas (R315-306-2(6))	Appendix A Section I
A schedule for testing the ash and residues and a plan for the disposal of the ash and residues (R315-306-2(7) and R315-310-7(2)(b)(iv))	Appendix A Section II
Any other site-specific information pertaining to the plan of operation required by the Director (R315-302-2(2)(o))	Appendix A
<b>Ie Special Requirements For A Commercial Incinerator (R315-310-3(2))</b>	
Submit information required by the Utah Solid and Hazardous Waste Act Subsections 19-6-108(9) and 19-6-108(10) (R315-310-3(2)(a))	pp. 13–14
Approval from the local government within which the incinerator facility sits	p. 14; Exhibit C



<b>II. Facility Technical Information</b>	
Description of Item	Location in Document
<b>IIa Maps – All Incinerators</b>	
Plot Plan map of the proposed facility drawn to a scale of 200 feet to the inch showing the boundaries of the facility; the locations of all existing and proposed structures; the location of all access routes; the location of the run-off collection, treatment, and disposal system (R315-310-3(1)(b))	p. 15; Appendix B
<b>IIb Engineering Report – Plans, Specifications, And Calculations</b>	
Engineering reports required to meet the location standards of R315-302-1	See Part I and Appendix E
The design of the incinerator or thermal treater including charging or feeding systems; combustion air systems; combustion or reaction chambers; heat recovery systems; ash handling systems; air and water pollution control systems; and instrumentation and monitoring systems (R315-310-7(2)(a)(ii))	Appendix C
A discussion of the design and operation of the air pollution control systems and documentation to show that an air quality permit has been granted or the application is being reviewed by the Division of Air Quality (R315-310-7(2)(c))	p. 16; Appendix C and Appendix D
A discussion of the design and operation of the run-off collection, treatment, and disposal system and documentation to show that any run-off treatment system or other water pollution control system is being or has been reviewed by the Division of Water Quality (R315-310-7(2)(c))	p. 16; Appendix F and Appendix G
<b>IIc Closure Plan – All Incinerators (R315-310-3(1)(h))</b>	
Closure schedule (R315-310-7(2)(d)(i))	p. 17; Appendix A Section XIV
Methods for removal of wastes, equipment, and location of final disposal (R315-310-7(2)(d)(ii))	p. 17; Appendix A Section XIV
Final inspection by regulatory agencies (R315-310-7(2)(d)(iv))	p. 17; Appendix A Section XIV
<b>IId Financial Assurance – All Incinerators (R315-310-3(1)(j))</b>	
Identification of closure costs including cost calculations (R315-310-7(2)(d)(ii))	p. 18; Appendix A Section XIV
Identification of the financial assurance mechanism that meets the requirements of Rule R315-309 and the date that the mechanism will become effective (R315-309-1(1))	p. 18; Appendix A Section XIV

## **Ia. INFORMATION REQUIRED FOR ALL INCINERATORS**

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### **General Description of the Facility (R315-310-3(1)(b))**

Stericycle proposes to construct and operate a medical-waste incineration facility in a remote portion of Tooele County (Figure 1). The proposed project will be located on a 40 ac parcel immediately east of Rowley Road (approximately 9250 Rowley Rd). The site is located in an existing M-G (Manufacturing—General) zone, with neighboring industries including Wasatch Regional Landfill, U.S. Magnesium, and ATI.

The facility will receive and incinerate packaged medical waste in a process similar to that of its North Salt Lake facility. No radioactive or hazardous wastes will be accepted. The facility is anticipated to operate 24 hours a day and employ approximately a total of 50 people in two or three shifts.

The site will require an approximately 5 ac developed portion, containing a 28,000 ft<sup>2</sup> main building with three types of use:

- Office—4,000 ft<sup>2</sup> for administrative and clerical uses
- Incineration—24,000 ft<sup>2</sup> for receiving, sorting, processing, incinerating medical waste
- Future Development—20,000 ft<sup>2</sup> for future use as needed to address the ongoing requirements of the business, its customers, and future regulations.

The site will also require an employee parking lot; outdoor materials and equipment storage; truck access, movement, and queuing; loading and unloading of freight; an independent water system; an on-site wastewater disposal system; compatible landscaping; natural open space; exterior lighting; security; a backup generator; run-on/runoff control facilities; and other facilities ancillary to the proposed use. The developed portion of the site will be enclosed with a perimeter fence and gates to prevent unauthorized access. An access road and lane modifications to Rowley Road will be constructed per the standards of the Tooele County Road Department.

### **Legal Description and Property Ownership (R315-310-3(1)(c))**

Stericycle has selected a 40 acre parcel on which to locate its facility. The parcel is described as the southwest quarter of the northeast quarter of Section 3, Township 1 North, Range 8 West, Salt Lake Base and Meridian. An official legal description is provided in Exhibit A as part of the certificate of sale.

Stericycle has entered into a real estate purchase agreement to purchase the property from the State of Utah School and Institutional Trust Lands Administration (SITLA). The certificate of sale is included in Exhibit A.

### **Service Area (R315-310-3(1)(d))**

This facility serves the greater Salt Lake City area as well as the entire state of Utah. As part of Stericycle's network, this facility also services various markets throughout North America. The primary market served is Stericycle's Western Regional System, including but not limited to the Pacific Coast and Intermountain States.

**Waste Type and Anticipated Volume (R315-310-3(1)(d))**

The anticipated waste volume is approximately 18,000 tons/year, or 49.3 tons/day average. Additional information on waste volume and type is presented in the Plan of Operations located in Appendix A.



**STERICYCLE, INC.  
 PROPOSED TOOELE COUNTY FACILITY**

**PROPOSED FACILITY LOCATION  
 SW 1/4 NE 1/4 SEC 3 T1N R8W SLB&M**

**FIGURE  
 1**

## **Ib. INFORMATION REQUIRED FOR ALL NEW OR LATERALLY EXPANDING INCINERATORS**

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### **Intended schedule of construction (R315-302-2(2)(a))**

Construction will be completed within three years from the time that Stericycle obtains all necessary permit approvals for the facility.

### **Identification of Neighboring Property Owners (R315-310-3(2)(a)(i))**

The following is a list of property owners within 1,000 ft of the site, according to Tooele County records:

Utah School and Institutional Trust Lands Administration  
675 East 500 South, Suite 500  
Salt Lake City, UT 84102  
(801) 538-5100

### **Notice to Neighboring Property Owners (R315-310-3(2)(a)(ii))**

Notice of Stericycle's intent to apply for a permit was sent via U.S. Postal Service to the property owner listed above on October 1, 2014, and was delivered on October 2, 2014. The notice letter, location maps, Certified Mail receipt, and Return Receipt are included as Exhibit B.

### **Local Government (R315-310-3(2)(a)(iii))**

The site is in the local jurisdiction of:

Tooele County  
47 South Main  
Tooele, UT 84074  
(435) 843-3100

Stericycle received a Tooele County Conditional Use Permit for the proposed use dated July 9, 2014. The permit is included as Exhibit C.

## **Ic. LOCATION STANDARDS**

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### **Historical Survey (R315-302-1(2)(f))**

SITLA completed a Cultural Resource Survey of the area in February 2014. The survey concluded that no cultural resources exist on the proposed site and that other archaeological sites in the vicinity will not be impacted by the project (SITLA 2014a, 2014b, 2014c). The Utah Division of State History (DSH) concurred with SITLA's determination of "no effect" in a letter dated Oct. 9, 2014 (DSH 2014). Documentation is included as Exhibit D.

No entries in the National Register of Historic Places are on or near the site, nor does the site meet the National Register Criteria for Evaluation to be considered as a historic place (NPS 2014, 1990).

### **Land Use Compatibility (R315-302-1(2)(a))**

A vicinity map is presented in Figure 2, and a Tooele County zoning map follows. Lands adjacent to the site are zoned for industrial and manufacturing uses, but are currently undeveloped and are used as rangeland for cattle grazing. The nearest other use is Wasatch Regional Landfill 0.25 mi to the southwest. The proposed use is compatible with existing and future surrounding land uses, which the Tooele County Planning Commission confirmed when issuing a Conditional Use Permit for the facility on July 9, 2014.

No park, residence, monument, recreation area, wilderness area, stream, lake, reservoir, farmland, ecologically significant area, or scientifically significant area is located on the site or within 1,000 ft of the site boundary.

According to the U.S. Fish and Wildlife Service (USFWS 2014b), no endangered species are listed in Tooele County. A letter from the USFWS Utah Ecological Services Field Office dated June 6, 2014, states that the Office has not identified any concerns related to species or habitat on the site or within Section 3 (USFWS 2014c). The letter is included with Exhibit E. Likewise, a letter from the Utah Division of Wildlife Resources (DWR) dated June 2, 2014, confirms that DWR has no record of any threatened, endangered, or sensitive species within the project site or within Section 3 (DWR 2014). The letter is included with Exhibit E. No species of concern have been observed within 1,000 ft of the project site, though the letter mentions recent reports of burrowing owl (*Athene cunicularia*), included on the *Utah Sensitive Species List* (DWR 2011, 5), within 2 mi of the project site.

As required by UCA 19-6-124, as amended by Senate Bill 196 in 2014, the site is not within 2 mi of any residential zone. The site is at least 15 mi from any residential zone, 11 mi from the nearest residence, and 6 mi from any non-industrial zone. Buffered by industrial zoning and lands unsuitable for permanent residence, the site is well protected from encroaching residential development.

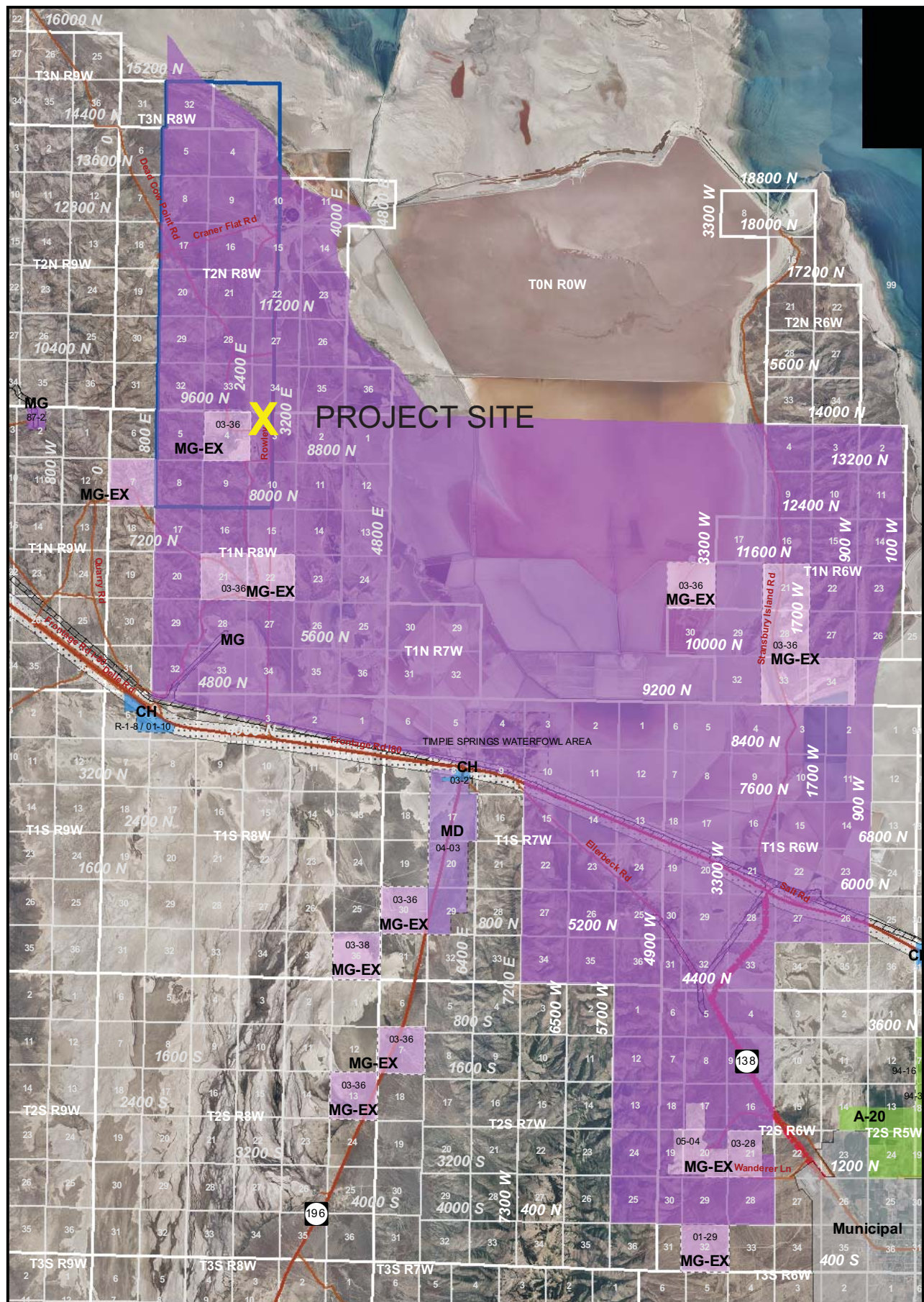
### **Geology and Soils (R315-302-1(2)(b))**

The site's geologic setting on quaternary Lake Bonneville deposits between the Lakeside Mountains and the Great Salt Lake (Moore and Sorensen 1979) is shown in Figure 3. Mud/salt flats and Stansbury Bay lie to the east. The site is relatively level, sloping gently to the northeast with a small ridge bisecting the property.

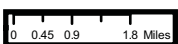








# Poverty Point Area Zoning



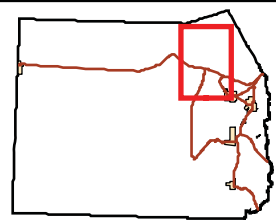
## Legend

### Zoning

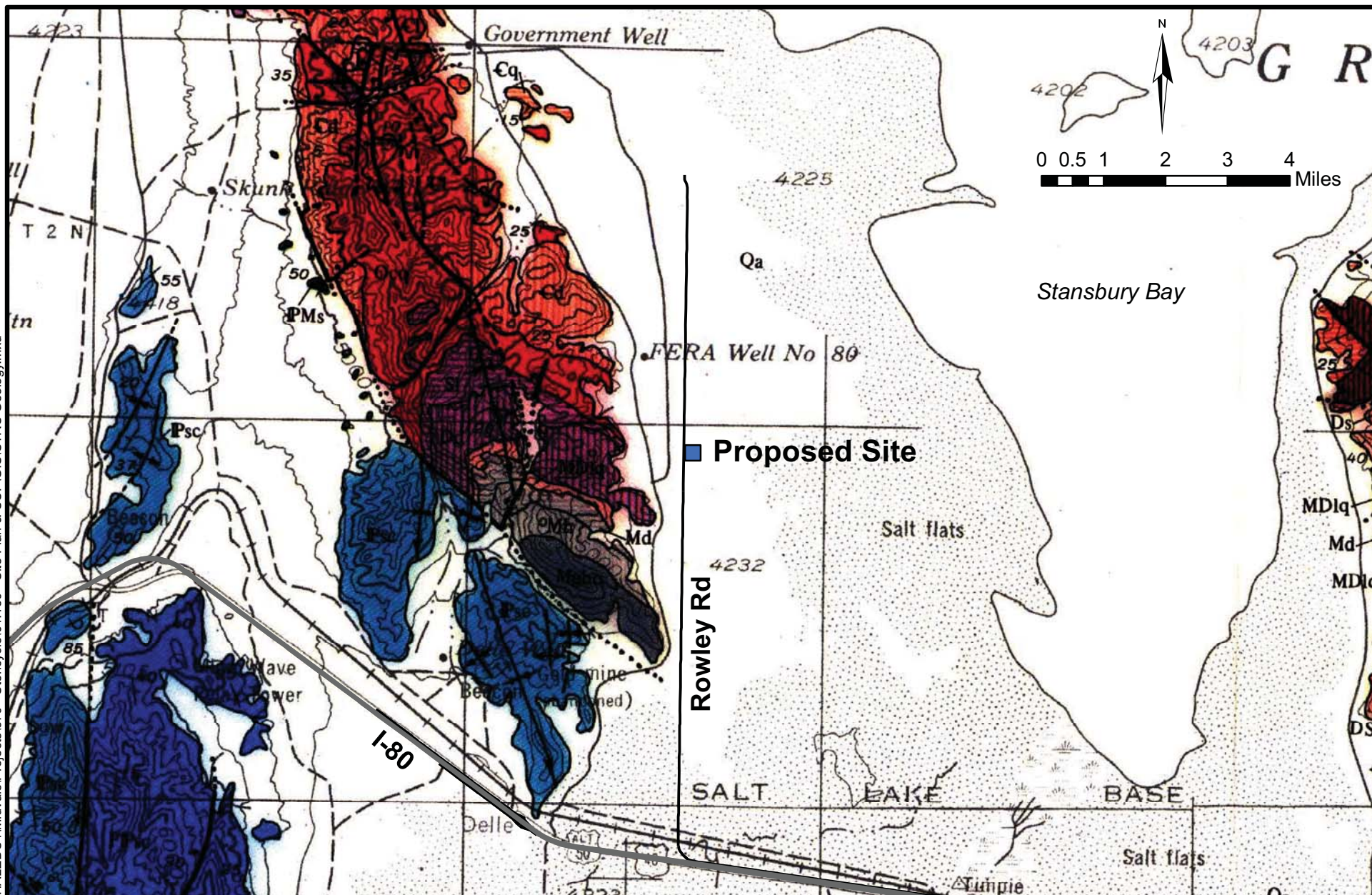
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- A-20
- A-40
- C-T
- CG
- CH
- CN
- CS
- MD
- MG
- MG-EX
- MG-H
- Municipal
- P-2
- R-1-10
- R-1-8
- R-M-15
- R-M-7
- RR-1
- RR-10
- RR-5
- RRS
- T-1

### Zoning Corridor

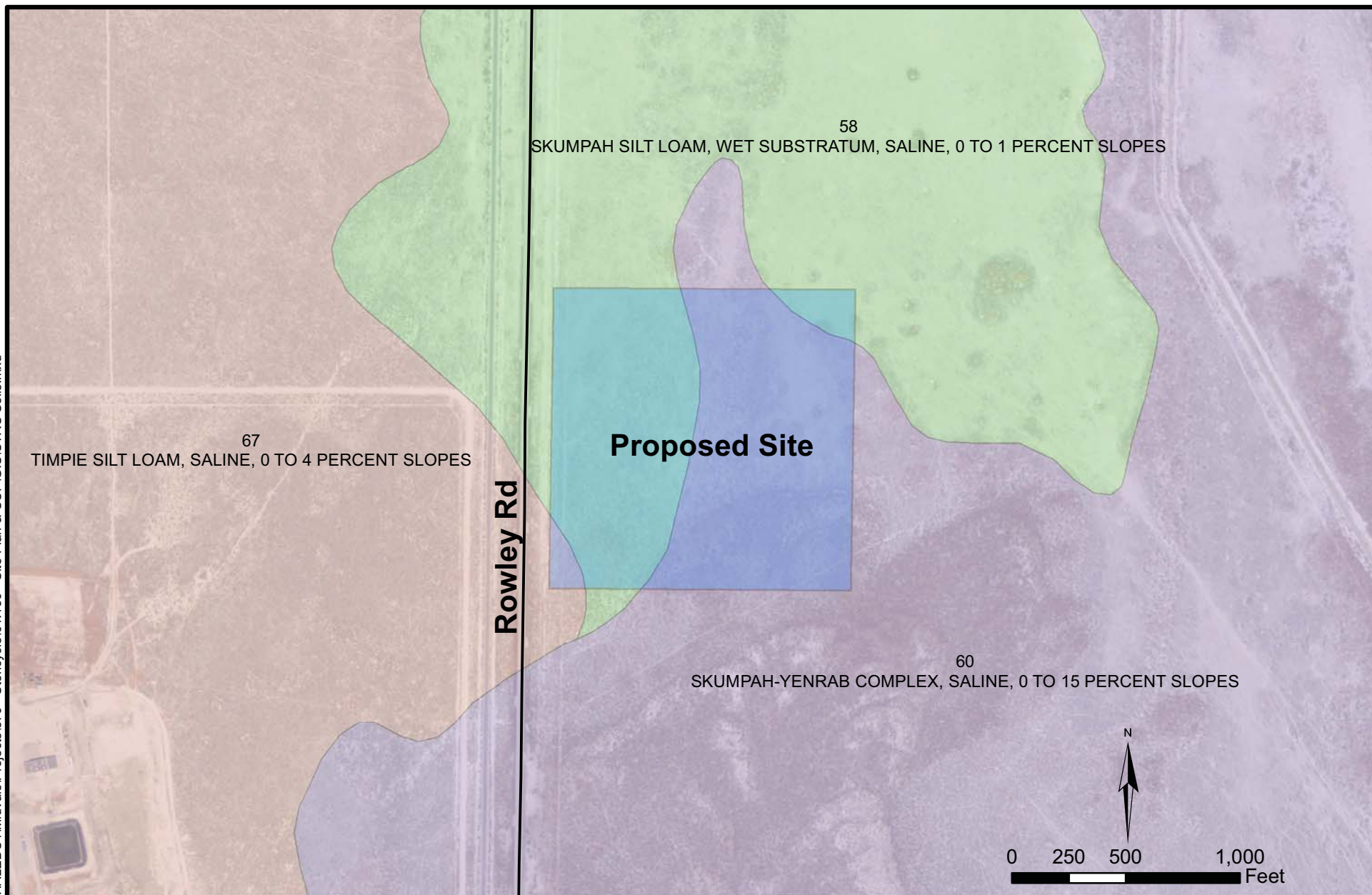
- HA
- Hazardous Waste
- Municipal Solid Waste
- APA
- Railroad Zone
- Travel Influence











No known geologic hazards exist on the site or in the vicinity. Geologic maps and reports do not identify any faults, landslides, unstable areas, seismic impact zones, or other geologic hazards in the vicinity of the site (Black et al. 1999; Christenson and Shaw 2008; Currey et al. 1984; Moore and Sorensen 1979; Stephens 1974; Solomon and Black 1995).

Soils on and around the site (Figure 4) are predominantly saline silt loams of the Skumpah-Yenrab-Dynal series, including Timpie silt loam, Skumpah silt loam, and Skumpah-Yenrab complex (Trickler et al. 2000, 61–63, 67–68; NRCS 2008, 2014). These lacustrine sediments have low runoff potential, low erosion potential, and shallow slopes. The surface layer is typically light gray silt loam a few inches thick (Figure 5). The upper 7 in. of subsoil are typically pale brown or yellowish brown, and the substratum to a depth of 60 in. or more is typically white silty clay loam. Native vegetation (Figure 5) consists of saltbrush, gray molly, greasewood, cheatgrass, and other desert plants (Trickler et al. 2000, 61–63, 67–68).

A site-specific geotechnical investigation was performed by Applied Geotechnical Engineering Consultants, Inc. (AGEC) for the property in December 2014 and results are summarized in a report dated January 12, 2015, included in Appendix E.



**Figure 5: Typical Soil and Vegetation**

#### **Surface Water (R315-302-1(2)(c))**

The site is not located on land used for watershed protection or municipal drinking water purposes.

The site is not located in or adjacent to known floodplains, as no floodplain maps have been produced for this area. According to the FEMA Map Service Center (2014), the vicinity is designated as Flood Zone D, “unstudied areas where flood hazards are not determined.”

Maps, aerial imagery, and field observation indicate that no streams, lakes, or other surface waters exist on or within 1,000 ft of the site. The closest water body is the Great Salt Lake, with a maximum elevation of 4212 ft, which has occurred three times in the period of record, in 1873, 1986, and 1987 (USGS 2013). The site is located at 4230 ft, is well above the maximum lake level and is not susceptible to lake flooding.

The magnitudes of 25 and 100 yr 24 hr storm events are 2.07 and 2.52 in., respectively (NOAA 2014). Run-on and runoff are discussed further in Appendix F and Appendix G.

#### **Wetlands (R315-302-1(2)(d))**

According to the National Wetlands Inventory (USFWS 2014a, 2014d), state data (UGS 2014), and field observations, the site is not located in or adjacent to any wetlands (Figure 6). The nearest wetlands are approximately 3,300 ft east of the site.





## **Id. PLAN OF OPERATIONS**

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Stericycle's Tooele County Facility Plan of Operations is included with this application as Appendix A in accordance with R315-310-3(1)(e) and R315-302-2(2).

## **Ie. SPECIAL REQUIREMENTS FOR A COMMERCIAL INCINERATOR**

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The *Utah Solid and Hazardous Waste Act* requires additional information of commercial incinerators (19-6-108(9) and (10)) as follows.

### **Waste Streams (19-6-108(9)(a))**

The facility's anticipated waste streams and volumes are described in the Plan of Operations located in Appendix A.

### **Mechanisms to Protect Human Health and the Environment (19-6-108(9)(b))**

The U.S. Environmental Protection Agency, Utah Division of Solid and Hazardous Waste, and Tooele County Health Department regulate the disposal of nonhazardous solid waste in their respective jurisdictions. These agencies have established standards of performance, operation, and handling related to solid waste to protect human health and the environment. The facility's Plan of Operations describes how Stericycle will meet these standards.

### **Financial Responsibility (19-6-108(9)(c))**

Closure procedures and financial assurance are presented in Part II of this application.

### **Personnel Training (19-6-108(9)(d))**

Stericycle's personnel training program and industrial safety program are presented in the Plan of Operations located in Appendix A.

### **Plans and Specifications (19-6-108(9)(e))**

Technical plans, maps, drawings, and specifications are discussed in Part II of this application.

### **Releases (19-6-108(9)(f))**

The Plan of Operations located in Appendix A includes provisions for preventing and managing waste releases.

### **Traffic Impact (19-6-108(9)(g))**

Rowley Road is owned and maintained by Tooele County and is the only road directly serving the site. Already serving existing industries, the road is assumed to have adequate capacity for Stericycle's operations. A letter dated Oct. 20, 2014, confirms that Tooele County does not intend to restrict traffic and will not require a traffic study. The letter appears as Exhibit F.

Truck volume is expected to be approximately 30 trucks per day, both in and out. This number will include waste transport trucks, semi-tractor trailers, local service and route trucks, and other facility support vehicles. This number could change somewhat (increase or decrease) as the needs and regulations of the business change over time. This number would not include employees, visitors, and other traffic unrelated to the operation of the processing facility. The

facility will include ample space for truck parking and queuing so that such does not occur on the access road or on Rowley Road.

Stericycle will construct approximately 0.25 mi of private access road perpendicular to Rowley Road to serve the facility and future industries. The road shall be built to County standards for local access roads. A cross-section detail is included in the drawing set. Additional width may be necessary at the intersection with Rowley Road in order to accommodate wide turns. The western half of the road will be paved. The eastern half will be completed with a gravel surface and a temporary turnaround will be constructed at the east end. The access road will be located approx. 2,400 ft north of the nearest intersection at Wasatch Regional Landfill.

The facility will also necessitate modifications to Rowley Road to ensure safe transitions to and from the access road and to prevent conflicts with passing traffic. (The modifications are also a condition of the Conditional Use Permit.) Rowley Road will need to be widened to accommodate two additional lanes: a northbound deceleration lane and a southbound acceleration lane, each approximately 500 ft long. The final design will be reviewed by the Tooele County Road Department. Stericycle will fund the modifications to Rowley Road and arrange for construction.

The facility will include two access points and parking areas. One will be for employees and visitors, located west of the main building. The other will be for trucks, located east of the main building, and will be controlled by a fence and gate to prevent unauthorized access. The accesses were designed in this manner to minimize conflicting traffic movements between trucks and passenger vehicles on the access road. Clear view zones will be established at each access to ensure proper visibility.

### **Market Analysis and Public Benefits (19-6-108(10)(a) and (b))**

The existing North Salt Lake incinerator facility, owned and operated by Stericycle, Inc., has been operating in Utah for 25 years and has an established local and regional market for medical-waste management. In Utah, Stericycle is currently the only provider of collection, transportation, treatment, and disposal services for certain types of medical waste, including those that are required by law or organizational policy to be incinerated. The proposed facility will replace the existing facility in North Salt Lake and will allow Stericycle to continue providing these services to its customers in Utah and neighboring states who must properly dispose of certain waste types.

### **Compliance History (19-6-108(10)(c))**

To our knowledge and based on inquiries with the Utah Division of Solid and Hazardous Waste, there have not been any notices of violation issued by the Division during the operating history of the North Salt Lake facility.

### **Local Approval**

Stericycle has received approval from Tooele County, the local governing body, in the form of a Conditional Use Permit dated July 9, 2014. A copy of the permit is included as Exhibit C.



## **Ila. MAPS**

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### **Maps and Site Plans (R315-310-3(1)(b))**

Maps and site plans of the 40 acre property are included in Appendix B.

## **IIb. ENGINEERING REPORT**

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The engineering report is included as separate parts with most of the materials located as appendices to this application. Please refer to the corresponding appendices for the following topics:

Appendix A	Plan Of Operations
Appendix B	Site Engineering Drawings
Appendix C	Incineration Process and Air Pollution Control System
Appendix D	Air Quality Permit Submittal Documentation
Appendix E	Geotechnical Investigation
Appendix F	Hydrologic Analysis
Appendix G	Run-On and Runoff Control Systems

### **Storage and Handling Facility Design (R315-310-7(2)(a)(i))**

Waste handling procedures are presented in Section I of the Plan of Operations.

### **Incinerator Design (R315-310-7(2)(a)(ii))**

The design and operation of incineration processes are presented in Appendix C.

### **Air Pollution Control System (R315-310-7(2)(c))**

The design and operation of the air pollution control processes are described in Appendix C. The proposed air pollution control system is being reviewed by the Utah Division of Air Quality as evidenced by a date stamped cover page to the Notice of Intent application included in Appendix D.

### **Runoff Control System (R315-310-7(2)(c))**

Documentation of the proposed runoff control system is found in Appendix G.

## **IIc. CLOSURE PLAN**

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### **Closure Schedule (R315-310-7(2)(d)(i))**

The facility's closure schedule is found in Section XIV of the Plan of Operations.

### **Closure Methods (R315-310-7(2)(d)(ii))**

The facility's closure plan is found in Section XIV of the Plan of Operations.

### **Final Inspection (R315-310-7(2)(d)(iv))**

This is included in the facility's closure plan which is found in Section XIV of the Plan of Operations.

## **IId. FINANCIAL ASSURANCE**

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### **Closure Costs (R315-310-7(2)(d)(ii))**

Closure costs are discussed in Section XIV of the Plan of Operations.

### **Financial Assurance Mechanism (R315-309-1(1))**

The Financial Assurance Mechanism is discussed in Section XIV of the Plan of Operations.

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**EXHIBIT A**

**CERTIFICATE OF SALE**

Fund: \_\_\_\_\_ School

**THE STATE OF UTAH**  
**SCHOOL AND INSTITUTIONAL TRUST LANDS ADMINISTRATION**  
**CERTIFICATE OF SALE**

Certificate No. 26594

STATE OF UTAH                    )  
  :SS.  
COUNTY OF SALT LAKE    )

THIS IS TO CERTIFY that as of this 25<sup>th</sup> day of April, 2014 (the “**Effective Date**”) the State of Utah (the “**State**”), through the School and Institutional Trust Lands Administration (the “**Trust Lands Administration**”) does hereby agree to sell, and Stericycle, Inc., a Delaware corporation (“**Purchaser**”), does hereby agree to buy, in a manner provided by law, as set forth herein, approximately forty (40) acres of that state trust land situated and lying in the County of Tooele, State of Utah, generally comprising all or portions of Parcel A and/or a Parcel B as described in **Exhibit A** and generally depicted in **Exhibit B** (the “**Property**”). A surveyed legal description of the Property shall be provided by Purchaser, as set forth below.

This Certificate of Sale may hereinafter be referred to as the “**Agreement**.”

Excepting and reserving to the State, for the benefit of the State and its successors in interest, assigns, permittees, licensees and lessees from time to time, all coal, oil and gas and other mineral deposits, along with the right for the Trust Lands Administration or other authorized persons or entities to prospect for, mine, and remove such deposits, but only to the extent such prospecting, mining, and removal will not materially or unreasonably interfere with Purchaser’s use of the surface estate of the Property; also,

Subject to those easements identified in **Exhibit C**; also,

Subject to any valid, existing rights of way of any kind and any right, interest, reservation or exception appearing of record, subject to exceptions and reservations contained in federal patents and clear lists (or other such documents conveying title to the Property from the federal government), and subject also to all rights of way for ditches, tunnels, and telephone and transmission lines that have been or may be constructed by the United States as provided by statute that are approved by the Trust Lands Administration and Purchaser pursuant to **Section 3.1.2.**

Purchaser agrees to buy, and the Trust Lands Administration agrees to sell, upon the following terms and conditions:

1. **LEGAL DESCRIPTION; PRICE AND TERMS.** Prior to the expiration of the Title Review Period (as that term is hereinafter defined), Purchaser will provide the Trust Lands Administration with a legal description of the Property (the "**Legal Description**") which will be prepared by a licensed surveyor and paid for by Purchaser. It is anticipated that the Property will be forty (40) acres, but the exact size and location of the Property will not be determined until the completion of the survey. The Legal Description will be approved as provided in **Section 3.1.2.** The purchase price for the Property (the "**Purchase Price**") shall be Eight Thousand Dollars (\$8,000) per acre of property, or a pro rata amount for any fractional acre, payable as set forth in this Agreement. The Purchase Price shall be calculated by multiplying the number of acres in the Property as determined by the surveyed Legal Description by \$8,000.

2. **EARNEST MONEY DEPOSIT; ESCROW AGENT.** On or before the Effective Date, Purchaser shall make a Thirty Thousand Dollar (\$30,000) deposit (the "**Earnest Money Deposit**") with First American Title Insurance Company, 585 West 500 South, Bountiful, Utah 84010, Attention: Angie Wheeler Dastic (the "**Escrow Agent**").

2.1 **Initial Payment.** The Escrow Agent will immediately transfer Ten Thousand Dollars (\$10,000) of the Earnest Money Deposit (the "**Initial Payment**") to the Trust Lands Administration. The Initial Payment shall in part compensate the Trust Lands Administration for those costs associated with preparing the Property for sale, and shall be non-refundable. Notwithstanding the foregoing, the Initial Payment shall be credited toward the Purchase Price at Closing (as that term is hereinafter defined), as set forth in **Section 2.3.**

2.2 **Remaining Deposit.** The Escrow Agent will place the remaining Twenty Thousand Dollars (\$20,000) of the Earnest Money Deposit (the "**Remaining Earnest Money**") in a secure account. Escrow Agent will hold the Remaining Earnest Money and any interest earned thereon in escrow until Closing and will release it to the Trust Lands Administration at Closing as set forth in **Section 4.3.1**, or will release it to the Trust Lands Administration or Purchaser prior to Closing pursuant to those terms and conditions set forth in this Agreement.

2.3 **Credit Toward Purchase Price.** If Closing occurs on or before the Date of Closing (as that term is hereinafter defined), the entirety of the Earnest Money Deposit and any interest that accrues thereon shall be credited toward the Purchase Price.

2.4 **Escrow Instructions.** The parties will jointly enter into and provide the Escrow Agent with escrow instructions, setting forth the terms and conditions for the release of the Earnest Money Deposit as set forth in this Agreement.

3. **DUE DILIGENCE; PAYMENT OF REMAINING EARNEST MONEY.**

3.1 **Verification of Title.**

3.1.1 **Title Commitment.** Purchaser may obtain, at Purchaser's expense, a title insurance commitment ("**Commitment**") for the Property. Purchaser shall pay the costs of the Commitment as well as any title insurance obtained for the Property. Purchaser will provide the Trust Lands Administration with copies of the Commitment and any other title reports obtained for the Property.

3.1.2 **Objection Period.** Purchaser shall be entitled to obtain approval of the Legal Description and make objections to title if the Commitment reveals any exceptions to title that are not acceptable to Purchaser in its reasonable discretion. Purchaser shall notify the Trust Lands Administration of any title objections in writing within ninety (90) days after the Effective Date (the "**Title Review Period**"), and the Trust Lands Administration shall have thirty (30) days after the receipt of Purchaser's objections (the "**Title Response Period**") within which to resolve and notify Purchaser of its proposed resolution of Purchaser's title objections. Prior to the expiration of the Title Review Period, Purchaser will provide the proposed Legal Description to the Trust Lands Administration and during the Title Response Period Purchaser and the Trust Lands Administration will cooperate in good faith to finalize and approve the Legal Description, which approval will not be unreasonably withheld.

3.1.3 **Release of Remaining Earnest Money and Title Verification.** In the event the Trust Lands Administration is unable to satisfy Purchaser's title objections to Purchaser's reasonable satisfaction or approve the Legal Description by the end of the Title Response Period, Purchaser may elect to cancel this Agreement, in which event Escrow Agent shall immediately return to Purchaser the Remaining Earnest Money together with any interest earned thereon, or Purchaser may waive in writing its title objections and accept the condition of title and the Legal Description approved by the Trust Lands Administration. Failure of Purchaser to provide the Trust Lands Administration with objections to title during the Title Review Period shall be conclusive evidence of Purchaser's acceptance of any title exceptions, in which event the Remaining Earnest Money and any interest earned thereon shall only be returned to Purchaser if the Trust Lands Administration fails to perform in accordance with this Agreement or if Purchaser chooses not to proceed to Closing due to the results of those reports and tests described in Sections 3.2 or 3.3, or the third sentence of Section 3.4.3.

3.2 **Inspections.**

3.2.1 **Right to Inspect Property.** The Trust Lands Administration hereby grants Purchaser and its designees the right to enter onto the Property to

perform those pre-Closing tests, inspections, studies and investigations as reasonably necessary to determine whether or not the Property is suitable for Purchaser's purposes and whether or not it is in Purchaser's best interest to consummate the transaction contemplated in this Agreement. Purchaser shall pay all costs associated with such tests and inspections. Any such tests shall be conducted so as not to damage the Property and Purchaser agrees to repair any damage it causes to the Property and promptly restore the Property to its prior condition. All such entries onto the Property shall be at the risk of Purchaser, and the Trust Lands Administration shall have no liability for any injuries sustained by Purchaser or any of Purchaser's agents or contractors, unless caused by the intentional acts or gross negligence of the Trust Lands Administration. Purchaser agrees to indemnify and hold the Trust Lands Administration harmless from any and all loss, claim, action, demand or liability which may arise against the Trust Lands Administration or the Property by virtue of Purchaser conducting such tests. Purchaser shall comply with all applicable laws and regulations of any government agency having jurisdiction over the Property while conducting these tests. Purchaser shall report any discovery of a paleontological, cultural or archaeological site or specimen to the Utah Division of State History and the Trust Lands Administration, if such is discovered while conducting these tests. Purchaser will provide the Trust Lands Administration with copies of all inspection reports concerning the Property.

**3.2.2 Inspection Period.** In the event Purchaser elects to cancel this Agreement due to the results of the tests described in **Section 3.2.1**, Purchaser will notify the Trust Lands Administration in writing of such within one hundred eighty (180) days after the Effective Date (the "**Inspection Period**"). Upon receipt of such written notice by the Trust Lands Administration, Escrow Agent shall immediately return to Purchaser the Remaining Earnest Money together with any interest earned thereon.

**3.2.3 Release of Remaining Earnest Money and Inspections.** Failure of Purchaser to provide the Trust Lands Administration with written notice of cancellation due to the results of the tests and inspections within the Inspection Period shall be conclusive evidence of Purchaser's determination that the physical condition of the Property is acceptable to Purchaser, in which event the Remaining Earnest Money and any interest earned thereon shall only be returned to Purchaser if the Trust Lands Administration fails to perform in accordance with this Agreement or if Purchaser chooses not to proceed to Closing due to the results of those reports and tests described in **Section 3.3** hereof.

### **3.3 Cultural Resource Work.**

**3.3.1 Cultural Resource Survey.** The parties acknowledge that the conveyance of the Property constitutes an "undertaking" pursuant to UTAH CODE ANN. § 9-8-404 and as defined in *Utah Admin. Code* R850-60-200.5. Therefore,



within twenty (20) days of the Effective Date, the Trust Lands Administration shall hire an archaeological consultant (the "**Cultural Consultant**") who is permitted by the Governor's Public Lands Policy Coordination Office to adequately identify any and all historic properties (as defined in *Utah Admin. Code* R850-60) on the Property (the "**Cultural Resource Survey**"). The Cultural Consultant shall prepare an inventory report and other required reports for transmittal by the Trust Lands Administration to the State Historic Preservation Officer (the "**SHPO**"). The Trust Lands Administration will transmit those reports to the SHPO and, in accordance with those requirements under UTAH CODE ANN. § 9-8-404, the Trust Lands Administration shall provide the SHPO with time to review and comment on these materials.

**3.3.2 Consultant Fee.** Purchaser shall deposit Ten Thousand Dollars (\$10,000) (the "**Consultant Fee**") with Escrow Agent on or before the Effective Date to pay for those costs incurred by the Cultural Consultant in performing the Cultural Resource Survey on the Property. The Trust Lands Administration shall submit to Escrow Agent invoices detailing those services performed by the Cultural Consultant concerning the Property. Upon submission of these invoices, the Escrow Agent shall release to the Trust Lands Administration from the Consultant Fee those amounts necessary to pay such invoices. Purchaser shall only be responsible to pay those costs invoiced by the Cultural Consultant associated with the Cultural Resource Survey of the Property, and any portion of the Consultant Fee remaining after payment of such invoices shall be refunded by Escrow Agent to Purchaser. Purchaser shall not be responsible for payment of any costs associated with the Cultural Resource Survey that exceed the Consultant Fee or that are performed in-house by the Trust Lands Administration.

**3.3.3 Cultural Resource Covenants.** In the event the Cultural Resource Survey identifies a cultural resource site or sites on the Property, then (as required by applicable law) the Property would be conveyed subject to certain covenants and restrictions relating to the cultural resources (the "**Cultural Resource Covenants**"). The Cultural Resource Covenants would be materially similar to those in **Exhibit D**, attached hereto.

**3.3.4 Cultural Resource Review Period.** A copy of the inventory report, identifying any cultural resource sites and created pursuant to the Cultural Resource Survey, including SHPO comments, if any, and the proposed Cultural Resource Covenants that will be applicable, if any, will be delivered by the Trust Lands Administration to Purchaser within one hundred fifty (150) days after the Effective Date. Purchaser shall have the right to cancel this Agreement due to the results of the Cultural Resource Survey by giving the Trust Lands Administration written notice of such cancellation within one hundred eighty (180) days after the Effective Date (the "**Cultural Resource Review Period**"). Upon receipt of such written notice by the Trust Lands Administration, Escrow Agent shall

immediately return to Purchaser the Remaining Earnest Money together with any interest earned thereon.

**3.3.5 Release of Remaining Earnest Money and Cultural Resource Review.** Failure of Purchaser to provide the Trust Lands Administration with written notice of cancellation due to the results of the Cultural Resource Survey within the Cultural Resource Review Period shall be conclusive evidence of Purchaser's acceptance of such reports and the Cultural Resource Covenants, in which event the Remaining Earnest Money and any interest earned thereon shall only be returned to Purchaser if the Trust Lands Administration fails to perform in accordance with this Agreement or if Purchaser chooses not to proceed to Closing due to the results of those reports and tests described in **Section 3.2** hereof.

**3.4 Government Approvals.**

**3.4.1 Governmental Approval Period.** Purchaser shall make reasonable and diligent efforts to obtain those approvals of governmental entities required to construct and operate a waste facility on the Property (the "**Governmental Approvals**"), including but not limited to those approvals required by Tooele County, the Utah Department of Environmental Quality, Utah Department of Natural Resources (Division of Water Resources and Division of Water Rights), and the Utah Department of Transportation, on or before that date which is one (1) year after the Effective Date (the "**Governmental Approval Period**").

**3.4.2 Extension Period.** In the event Purchaser is unable to receive the required Governmental Approvals during the Governmental Approval Period, and provided Purchaser is not in material default under this Agreement at such time, Purchaser shall have the right to extend the Governmental Approval Period for a maximum of two (2) sequential six (6) month periods (each, the "**Extension Period**" and collectively, the "**Extension Periods**") upon payment of a fee (the "**Extension Fee**"), payable on or before the end of the initial Governmental Approval Period or the initial Extension Period, as applicable. Each six (6) month Extension Fee shall be equal to Ten Thousand Dollars (\$10,000) and shall be paid directly to the Trust Lands Administration. Each Extension Fee, when made, shall be non-refundable and shall not be credited toward the Purchase Price of the Property.

**3.4.3 Failure to Obtain Governmental Approvals.** If, after making all expedient, reasonable and diligent efforts to do so, Purchaser is unable to obtain the necessary Governmental Approvals during the Governmental Approval Period (or by the end of the Extension Periods, as applicable), Purchaser may elect to terminate this Agreement. If Purchaser elects to terminate for such reasons, Purchaser will notify the Trust Lands Administration in writing of such prior to the end of the Governmental Approval Period or the Extension Periods, as

applicable. In the event Purchaser terminates this Agreement for failure to obtain Governmental Approvals, and if such termination occurs within one hundred eighty (180) days after the Effective Date, then Purchaser shall be entitled to a refund of the Remaining Earnest Money and any interest earned thereon. If Purchaser terminates this Agreement for failure to obtain Governmental Approvals and if such termination occurs after one hundred eighty (180) days from the Effective Date, then Purchaser shall not be entitled to a refund of any portion of the Remaining Earnest Money.

4. **CLOSING.**

4.1 **Closing.** The closing of the transaction contemplated by this Agreement (the "**Closing**") shall occur through the Escrow Agent on or before that date which is one (1) year after the Effective Date or, if applicable, on or before the end of the Extension Periods, or upon such other date prior thereto as the parties agree. The date on which this transaction is scheduled to close pursuant to this **Section 4.1** is sometimes referred to in this Agreement as the "**Date of Closing.**" Purchaser and the Trust Lands Administration agree that Closing on or before the Date of Closing is a material inducement to the Trust Lands Administration entering into this Agreement. If the transaction contemplated in this Agreement does not close on or before the Date of Closing, this Agreement shall automatically terminate at 11:59 p.m. on the Date of Closing, unless the Trust Lands Administration elects in writing, in its reasonable discretion, to extend the Date of Closing.

4.2 **The Trust Lands Administration's Obligations.** At Closing, the Trust Lands Administration shall undertake the following:

4.2.1 **Patent.** Upon payment in full of the Purchase Price to Escrow Agent and compliance by Purchaser with all other terms and conditions of this Agreement, issue to Purchaser a patent for the Property, which patent shall contain reservations and exceptions as set forth above, shall be substantially in the form of the attached **Exhibit E** and shall be recorded by Escrow Agent with the office of the Tooele County Recorder.

4.3 **Purchaser's Obligations.** At Closing, Purchaser shall undertake the following:

4.3.1 **Payment of Purchase Price.** Deliver to the Escrow Agent, in cash or by wire transfer of ready funds, the remainder of the Purchase Price, after crediting the Earnest Money Deposit and any interest earned thereon, for disbursement pursuant to this Agreement, including disbursement of the Remaining Earnest Money and any interest earned thereon.



**4.3.2 Closing Costs.** Purchaser shall pay all costs associated with Closing, including but not limited to all costs associated with the Commitment or any title insurance obtained by Purchaser for the Property.

**4.4 Possession.** Purchaser shall have the right to enter the Property for inspection, planning and other associated purposes beginning on the Effective Date and continuing until the Date of Closing. Purchaser shall have no right to improve the Property during such time period and shall have no other rights of possession until after Closing. All risk of loss, destruction and expenses of the Property shall be borne by the Trust Lands Administration until Closing at which time all risk and expenses shall be borne by Purchaser, except as otherwise set forth in this Agreement.

Purchaser shall, prior to delivery of a patent, comply with all applicable laws and regulations of any government agency having jurisdiction, including all valid sanitation and pollution regulations in association with any use of the Property. Purchaser shall report any discovery of a paleontological, cultural or archaeological site or specimen on the Property to the Utah Division of State History in compliance with the provisions of Section 9-8-305, Utah Code Annotated, as amended.

Purchaser agrees that, prior to recordation of a patent, it will not commit or suffer to be committed any waste, spoil, or destruction in or upon the Property and that it will maintain the Property in good condition.

**4.5 Water.** Trust Lands Administration has and will cooperate with Purchaser's appropriation or other acquisition of water and water rights for the development and operation of the Property, including the execution of an Application to Appropriate Water and related documents needed by Purchaser to appropriate water on property owned by Trust Lands Administration. Purchaser will reimburse Trust Lands Administration's reasonable out of pocket costs related to that cooperation. At the Closing, Trust Lands Administration will transfer and convey to Purchaser, without additional cost or consideration, Trust Lands Administration's rights in the applications, water, and water rights arising from the appropriation of water on property owned by Trust Lands Administration.

## **5. IMPROVEMENTS.**

**5.1 Access Road.** Purchaser will construct an access road off Rowley Road with a sixty (60) foot right-of-way (the "Access Road"). The precise location of the Access Road will be reasonably and mutually agreed upon by the parties prior to its construction. Thirty (30) feet of the right-of-way width of the Access Road will be on the Property and the remaining thirty (30) feet of right-of-way width will be on adjacent lands retained by the Trust Lands Administration (the "Adjacent Trust Lands"). The Access Road shall provide vehicular access to the Property and the Adjacent Trust Lands from Rowley Road and shall extend east of Rowley Road to the eastern Property line. The Access Road shall be paved and constructed in accordance with those requirements

of Tooele County in effect at the time of construction of the Access Road for "Local Access Roads" with drainage ditches and without curb, gutter and sidewalk until a halfway point to be reasonably and mutually agreed upon by the parties, *except* the right-of-way width of the Access Road shall be sixty (60) feet for its entire length. After the halfway point, the remainder of the Access Road constructed to the eastern boundary lines of the Property and the Adjacent Trust Lands shall be constructed in accordance with those requirements of Tooele County in effect at the time of construction of the Access Road for "Gravel Roads," *except* the right-of-way width of the Access Road shall be sixty (60) feet. Construction on the Access Road shall begin on some date after Closing, as determined in Purchaser's sole discretion, and shall be completed by the earlier of: (a) that date which is five years (5) from the Date of Closing, or (b) upon completion of development of the Property for the purposes for which it was acquired by Purchaser. Purchaser shall prepare, at its own expense, a plat dedicating the Access Road to Tooele County, which dedication shall be signed by both Purchaser and the Trust Lands Administration and shall contain those reservations and exceptions reasonably required by the Trust Lands Administration. In the event Tooele County is unwilling to accept the dedication of the Access Road, Purchaser and the Trust Lands Administration shall each execute a reciprocal easement, allowing both parties to use the Access Road to benefit their adjacent real property. A right of entry will be issued by the Trust Lands Administration, without fee, for construction of the portion of the Access Road outside the boundaries of the Property. The obligations set forth herein shall survive Closing.

**5.2 Utilities.** No easements for roads, utilities, or otherwise, to or from the Property, are granted pursuant to this Agreement. During the Inspection Period Purchaser and the Trust Lands Administration will agree on the general location, cost (in addition to the Purchase Price), and nature of the easements or other rights the Trust Lands Administration will grant to Purchaser for roads, utilities and other interests required by Purchaser for the development of the Property and during the Governmental Approval Period Purchaser and the Trust Lands Administration will finalize any related agreements and documents so that those interests will be transferred to Purchaser at Closing and upon Purchaser's payment of any related costs.

**6. TAXES.** The parties hereby acknowledge and agree that the Property has not been subject to taxes during the period it was held by the State, but that such Property may be subject to general and special real estate and other ad valorem taxes and assessments, including Farmland Assessment (Greenbelt) rollback taxes, and charges for utilities, if any, and other charges, all of which charges, when applicable, shall be the responsibility of Purchaser.

**7. INSPECTION; NO WARRANTIES.** Purchaser acknowledges Purchaser is acquiring the Property subject to all existing laws, ordinances, rules and regulations and that Purchaser has had the opportunity to inspect the Property to determine the condition and suitability of the Property for Purchaser's intended purposes, and for the presence or absence of any Hazardous Substances (as that term is hereinafter defined) or condition. Purchaser further acknowledges that, although the Trust Lands Administration believes that oral and written disclosures made by the Trust Lands Administration with respect to the Property are accurate,

errors in such information may exist. Purchaser and the Trust Lands Administration hereby agree that Purchaser is acquiring the Property in an "As-Is" condition with all faults and defects, including latent and patent defects, and neither Trust Lands Administration's agents, representatives or employees have made any representations or warranty as to title, zoning, legal or physical access, location or availability of utilities, soil conditions, floodplains and watercourses, the presence or absence of any Hazardous Substances, or other physical or legal attributes of the Property or Purchaser's ability to obtain approvals for Purchaser's development of the Property, or the physical conditions of the Property. **THE TRUST LANDS ADMINISTRATION HEREBY DISCLAIMS ANY AND ALL WARRANTIES WITH RESPECT TO THE PROPERTY IT IS CONVEYING, AND PURCHASER ASSUMES THE RISK THAT ADVERSE PAST, PRESENT OR FUTURE PHYSICAL CHARACTERISTICS AND CONDITIONS OF THE PROPERTY WHICH PURCHASER IS ACQUIRING UNDER THIS AGREEMENT MAY NOT HAVE BEEN REVEALED BY INSPECTION OR INVESTIGATION.**

**8. ENVIRONMENTAL INDEMNITY.**

**8.1 Purchaser's Indemnity. PURCHASER HEREBY FOREVER RELEASES AND DISCHARGES THE STATE, THE TRUST LANDS ADMINISTRATION AND ANY SUBSIDIARY OR AFFILIATE OF THE STATE, AND THEIR RESPECTIVE DIRECTORS, OFFICERS (APPOINTED AND ELECTED), EMPLOYEES, REPRESENTATIVES AND AGENTS, FROM AND AGAINST ANY AND ALL JUDGMENTS, CLAIMS, EXPENSES (INCLUDING ATTORNEYS' AND OTHER CONSULTANTS' REASONABLE FEES AND COSTS), CAUSES OF ACTION, DAMAGES, LIABILITIES, INCLUDING WITHOUT LIMITATION, (A) ALL FORESEEABLE AND ALL UNFORESEEABLE CONSEQUENTIAL DAMAGES, DIRECTLY OR INDIRECTLY ARISING OUT OF THE USE, GENERATION, STORAGE, DISPOSAL, RELEASE OR THREATENED RELEASE OF ANY HAZARDOUS SUBSTANCE ON THE PROPERTY DURING PURCHASER'S OWNERSHIP OF THE PROPERTY, AND (B) THE COST OF ANY REASONABLY NECESSARY INVESTIGATION, REPAIR, CLEANUP, REMEDIATION OR DETOXIFICATION OF THE PROPERTY AND OTHER AFFECTED PROPERTY AND THE PREPARATION OF ANY CORRECTIVE ACTION, CLOSURE OR OTHER REQUIRED PLANS OR REPORTS TO THE FULL EXTENT THAT SUCH ACTIONS ARE ALLEGED TO BE ATTRIBUTABLE, DIRECTLY OR INDIRECTLY, TO THE PRESENCE OR USE, GENERATION, STORAGE, RELEASE, THREATENED RELEASE, OR DISPOSAL OF A HAZARDOUS SUBSTANCE ON THE PROPERTY DURING PURCHASER'S OWNERSHIP OF THE PROPERTY.**

**8.2 The Trust Lands Administration's Indemnity. THE TRUST LANDS ADMINISTRATION HEREBY FOREVER RELEASES AND DISCHARGES PURCHASER AND ITS EMPLOYEES, REPRESENTATIVES AND AGENTS, FROM AND AGAINST ANY AND ALL JUDGMENTS, CLAIMS, EXPENSES**



(INCLUDING ATTORNEYS' AND OTHER CONSULTANTS' REASONABLE FEES AND COSTS), CAUSES OF ACTION, DAMAGES, LIABILITIES, INCLUDING WITHOUT LIMITATION, (A) ALL FORESEEABLE AND ALL UNFORESEEABLE CONSEQUENTIAL DAMAGES, DIRECTLY OR INDIRECTLY ARISING OUT OF THE USE, GENERATION, STORAGE, DISPOSAL, RELEASE OR THREATENED RELEASE OF ANY HAZARDOUS SUBSTANCE ON THE PROPERTY DURING THE STATE'S OWNERSHIP OF THE PROPERTY [UNLESS SUCH STORAGE, DISPOSAL, RELEASE OR THREATENED RELEASE WAS CAUSED BY PURCHASER OR ITS AGENTS DURING THE PERFORMANCE OF DUE DILIGENCE ACTIONS SET FORTH IN THIS AGREEMENT], AND (B) THE COST OF ANY REASONABLY NECESSARY INVESTIGATION, REPAIR, CLEANUP, REMEDIATION OR DETOXIFICATION OF THE PROPERTY AND OTHER AFFECTED PROPERTY AND THE PREPARATION OF ANY CORRECTIVE ACTION, CLOSURE OR OTHER REQUIRED PLANS OR REPORTS TO THE FULL EXTENT THAT SUCH ACTIONS ARE ALLEGED TO BE ATTRIBUTABLE, DIRECTLY OR INDIRECTLY, TO THE PRESENCE OR USE, GENERATION, STORAGE, RELEASE, THREATENED RELEASE, OR DISPOSAL OF A HAZARDOUS SUBSTANCE ON THE PROPERTY DURING THE STATE'S OWNERSHIP OF THE PROPERTY [UNLESS SUCH USE, GENERATION, STORAGE, RELEASE, THREATENED RELEASE, OR DISPOSAL WAS CAUSED BY PURCHASER OR ITS AGENTS DURING THE PERFORMANCE OF DUE DILIGENCE ACTIONS SET FORTH IN THIS AGREEMENT].

**8.3 Defined Environmental Terms.** "Hazardous Substance" as used herein shall mean: (a) any substance, material, or waste that is included within the definitions of "hazardous substances," "hazardous materials," "hazardous waste," "toxic substances," "toxic materials," "toxic waste," or words of similar import in any Environmental Law (defined below); (b) those substances listed as hazardous substances by the United States Department of Transportation (or any successor agency) (49 C.F.R. Section 172.101 and amendments thereto) or by the Environmental Protection Agency (or any successor agency) (40 C.F.R. Part 302 and amendments thereto); and (c) any substance, material, or waste that contains petroleum or is petroleum, petroleum-related, or a petroleum by-product, asbestos or asbestos-containing material, polychlorinated biphenyls, flammable, explosive, radioactive, Freon gas, radon, or a pesticide, herbicide, or any other agricultural chemical, except as otherwise provided by law. "Environmental Law" as used herein shall mean the Hazardous Materials Transportation Act, as amended (49 U.S.C. Section 1801, et seq.), the Resource Conservation and Recovery Act of 1976, as amended (42 U.S.C. Section 6901, et seq.), the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. Sections 9601-9657, as amended by the Superfund Amendments and Reauthorization Act of 1986, the Federal Water Pollution Control Act, 33 U.S.C. §1251, the Clean Air Act, 42 U.S.C. § 7401, the Toxic Substances Control Act, 15 U.S.C. § 2601, or any similar State law or local ordinance, or any other Federal, State or local environmental statutes, regulations, ordinances or other environmental regulatory requirements in effect on the date hereof relating to protection

of public health, safety or the environment, and any of the regulations adopted or publications promulgated pursuant to any of the foregoing.

**8.4 Environmental Report.** Purchaser shall have obtained a Phase I environmental site assessment of the Property (the "**Environmental Report**"), conducted by an environmental engineering firm retained by Purchaser, prior to Closing. The assessment shall be conducted in compliance with the current ASTM standards for such assessments. At least thirty (30) days prior to Closing, Purchaser shall provide the Trust Lands Administration with a copy of the Environmental Report free of charge. The cost of the Environmental Report shall be paid by Purchaser. In the event Purchaser performs any additional environmental site assessments of the Property, then Purchaser shall provide the Trust Lands Administration with copies of any additional reports, also free of charge.

**9. PURCHASER'S REPRESENTATIONS WARRANTIES AND COVENANTS.** Purchaser hereby represents and warrants to the Trust Lands Administration that there are no judgments, actions, decrees or other legal restraints or causes of action which would prevent or prohibit Purchaser from acquiring fee title to the Property as required hereunder.

**10. DEFAULT.** Subject to **Section 11**, if either party shall default in the performance of any of its obligations under this Agreement and upon failure to cure the default within thirty (30) days after written notice of default is given to the defaulting party, then the non-defaulting party may terminate this Agreement and/or pursue any other remedies afforded it by law. In addition, in the event the default results in the failure of the purchase and sale contemplated under this Agreement, then the non-defaulting party is entitled to all Remaining Earnest Money Deposits and other funds and interest earned thereon and deposited pursuant to this Agreement.

**11. LIQUIDATED DAMAGES.** Notwithstanding **Section 10**, in the event the purchase and sale contemplated under this Agreement shall fail without the default of the Trust Lands Administration, the Trust Lands Administration shall have sustained damages resulting from Purchaser's breach or failure to perform, which damages are difficult and impracticable to ascertain. Accordingly, in such event the Trust Lands Administration's sole and exclusive remedy shall be to retain the Earnest Money Deposit and other funds and interest earned thereon and deposited pursuant to this Agreement as a liquidated and reasonable estimate of such damages for Purchaser's failure to complete the purchase and sale contemplated by this Agreement.

**12. INDEMNIFICATION BY PURCHASER.** In addition to any other indemnity obligations of Purchaser under this Agreement, Purchaser further agrees to protect, indemnify and save harmless the State, its agents and employees, from and against all claims, demands, damages, and causes of action of every kind or character on account of bodily injuries, death, or damage to property arising because of, for, out of, or in any way connected with the performance of this Agreement, except where such injury, death, or damage has resulted from the sole

negligence of the State, without negligence or willful act on the part of Purchaser, its agents, employees, or subcontractors, it being the intent of this provision that Purchaser indemnify the State, its agents and employees regardless of whether or not such injury, death or damage is caused in part by the State, its agents and employees. Purchaser shall defend all suits brought upon such claims and pay all costs and expenses incidental thereto, but the State shall have the right, at its option, to participate in the defense of any such suit without relieving Purchaser of any obligation hereunder. Such duty of indemnification shall include, but not be limited to, damage, liability, or loss pursuant to all federal and state Environmental Laws, strict liability and common law. The foregoing indemnification obligation shall survive any termination of this Agreement.

**13. NOTICES.** All notices, requests, demands, and other communications hereunder shall be in writing and shall be given by (a) established express delivery service which maintains delivery records, (b) hand delivery, or (c) certified or registered mail, postage prepaid, return receipt requested, to the parties at the following addresses, or at such other address as the parties may designate by written notice in the above manner:

To Trust Lands Administration:	Utah School and Institutional Trust Lands Administration 675 East 500 South, Suite 500 Salt Lake City, Utah 84102 Attention: Assistant Director – Development Facsimile: 801-355-0922
To Purchaser:	Stericycle, Inc. Attention: Richard T. Kogler Executive Vice President, Chief Operating Officer 28161 North Keith Drive Lake Forest, IL 60045 Facsimile: 800-547-4293
With a required copy to:	Parsons Behle & Latimer Attention: Shawn Ferrin and Mike Malmquist 201 South Main Street, Suite 1800 Salt Lake City, Utah 84111 Facsimile: 801-536-6111

Communications may also be given by fax or electronic mail, provided the communication is concurrently given by one of the above methods. Notices are effective upon receipt, or upon attempted delivery if delivery is refused or if delivery is impossible because of the recipient's failure to provide a reasonable means for accomplishing delivery.

**14. MISCELLANEOUS.**

**14.1 Binding Terms.** It is understood that the stipulations aforesaid are to apply to and bind the heirs, executors, administrators, successors, and assigns of the respective parties hereto.

**14.2 Time of the Essence.** Time is of the essence of this Agreement and each and all of its terms, covenants, or conditions in which performance is a factor.

**14.3 Assignment.** Certificates of Sale may be assigned pursuant to statute and rule, but the assignment does not relieve the assignor from responsibility under the original contract.

**14.4 No Merger.** The assurances and covenants of Purchaser shall not merge with but shall survive the delivery of the patent to Purchaser.

**14.5 Entire Agreement.** This Agreement and the exhibits attached hereto constitute the entire agreement between the parties hereto with respect to the subject matter hereof, incorporates all prior agreements, and may only be modified by a subsequent writing duly executed by the parties.

**14.6 Waivers.** No waiver of any of the provisions of this Agreement shall constitute a waiver of any other provision, whether or not similar, nor shall any waiver be a continuing waiver. Except as expressly provided in this Agreement, no waiver shall be binding unless executed in writing by the party making the waiver.

**14.7 Governing Law.** This Agreement shall be construed and enforced in accordance with, and governed by, the law of the State.

**14.8 Captions.** The captions in this Agreement are for convenience only and do not constitute a part of the provisions hereof.

**14.9 Applicability.** If any term or provision of this Agreement or the application of it to any person, entity or circumstance shall to any extent be invalid and unenforceable, the remainder of this Agreement or the application of such term or provision to persons or circumstances other than those as to which it is invalid or unenforceable shall not be affected thereby, and each term and provision of this Agreement shall be valid and shall be enforced to the extent permitted by law.

**14.10 Authority.** The individuals executing this Agreement represent and warrant that they have the power and authority to do so, and to bind the entities for which they are executing this Agreement.

**14.11 Numbering of Days.** If the last day of any time period stated herein shall fall on a Saturday, Sunday or state or federal legal holiday, then such time period shall be



extended to the next succeeding day which is not a Saturday, Sunday or a state or a federal legal holiday.

**14.12 Allocation of Professional Fees.** Regardless of whether the transaction contemplated by this Agreement is consummated, each respective party shall be responsible for its own legal, accounting, and other professional fees incurred in relation to this Agreement or the transaction contemplated by this Agreement.

**14.13 No Waiver of Governmental Immunity.** Notwithstanding anything in this Agreement to the contrary, by entering into this Agreement, neither the State nor the Trust Lands Administration has waived, limited or modified any governmental immunity from suit.

**[Signature Pages Follow]**



SCHOOL AND INSTITUTIONAL  
TRUST LANDS ADMINISTRATION:

STERICYCLE, INC.,  
a Delaware corporation:

By: [Signature]  
KEVIN S. CARTER, DIRECTOR

By: [Signature]  
Its: CFO

APPROVED AS TO FORM:  
SEAN D. REYES  
ATTORNEY GENERAL

By: [Signature]  
Special Assistant Attorney General

STATE OF UTAH )  
: ss.  
COUNTY OF SALT LAKE )

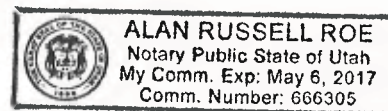
On the 25th day of April, 2014, personally appeared before me **Kevin S. Carter**, who being by me duly sworn did say that he is the Director of the School and Institutional Trust Lands Administration of the State of Utah, and the signer of the above instrument, who duly acknowledged that he executed the same.

Given under my hand and seal this 25th day of April, 2014.

[Signature]  
Notary Public

My Commission expires:

05-06-17  
(Date)



Residing at: Salt Lake  
(County)

CERTIFICATE OF SALE NO. \_\_\_\_\_

PURCHASER'S NAME: \_\_\_\_\_

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STATE OF Illinois )  
: ss.  
COUNTY OF Lake )

The forgoing instrument was acknowledged before me this 15 day of April, 2014, by Frank ten Brink, the CFO of Stericycle, Inc., a Delaware corporation.

Kelly Ippian  
Notary Public

My Commission expires:

1/3/2017  
(Date)



Residing at: Cook  
(County)

**EXHIBIT A**

**Legal Description of Property**

**Township 1 North, Range 8 West, SLB&M**

**Section: 3**

**[generally described as SW<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub> (parcel A) or NW<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub> (parcel B)]**

**Containing 40.0 acres, more or less**

**Tooele County**

**EXHIBIT B**

Location Map





## EXHIBIT C

### List of Easements

<u>Easement</u>	<u>Type</u>	<u>Grantee</u>
ESMT 1249	Water pipeline	Skull Valley Water Group LLC 238 N. 2200 West Salt Lake City, UT 84116
ESMT 1274	12.5kV power line	PacifiCorp DBA Rocky Mountain Power Right of Way Services 1407 W. North Temple, Suite 110 Salt Lake City, UT 84116
ESMT 1466	Brine Pipeline	U.S. Magnesium LLC 238 N. 2200 West Salt Lake City, UT 84116

## EXHIBIT D

### Cultural Resource Covenants

The areal limits of those portions of archaeological sites \_\_\_\_\_, and \_\_\_\_\_ (the "Sites") located within the parcel (as more fully depicted herein) shall be subject to the following restrictions hereinafter set forth, which shall be covenants running with the land in perpetuity and which shall be binding between the Trust Lands Administration and each and every purchaser and owner, their heirs, successors and assigns (referred to collectively as "Purchaser"). These covenants protect the Sites and their settings, and require Purchaser to seek approval from the Trust Lands Administration before conducting any ground-disturbing activities within the Sites. Purchaser may not collect arrowheads or any other artifacts from the Sites, or authorize anyone else to collect such specimens, as ownership of all specimens is reserved to the Trust Lands Administration:

1. Ownership of all archaeological contexts, data, artifacts, specimens, structural remains, and archaeological features and deposits shall remain in the Trust Lands Administration.

2. For all activities conducted within the Sites, Purchaser shall comply with the Utah Antiquities Act, Utah Code Annotated § 9-8-301 et seq. and § 9-8-404 (1953), as amended, or any amending or replacing legislation, as if the Trust Lands Administration held title to the Sites, including but not limited to:

A. Prior to commencing any undertaking (as defined in Utah Administrative Code R850-60-200) within the limits of Sites, Purchaser shall consult with the Trust Lands Administration and seek approval for the proposed undertaking.

B. Approval shall be subject to the archaeological contexts, data, artifacts, specimens, structural remains, features and deposits contained in the Sites being preserved, recovered, recorded or otherwise treated in a manner satisfactory to the Trust Lands Administration.

C. Purchaser shall provide the Trust Lands Administration with all collections (e.g., specimens, unprocessed samples, notes and photographs) resulting from archaeological investigations at the Sites and all subsequent data analyses and reports.

3. The Trust Lands Administration may, at its discretion, release the restrictive covenants in part or in their entirety in the event it determines, in consultation with the Utah Division of State History, that an appropriate level of data recovery has occurred.

4. The restrictive covenants are for the benefit of the beneficiaries of the subject lands. The Trust Lands Administration or the Utah Division of State History may monitor compliance with, seek enforcement of, and be entitled to enjoin any violation of the restrictive covenants and to recover damages caused by the violation.

5. The Trust Lands Administration reserves a right of access in perpetuity across the subject lands to the Sites within the Property for the purpose of monitoring compliance with these restrictive covenants or for facilitation of archaeological research within said Sites.

6. The Trust Lands Administration reserves the right, but does not covenant, to conduct archaeological investigations at the Sites, along with a right of access for the same, but does not covenant to cause any release of the restrictive covenants pursuant to paragraph 3, above.

**EXHIBIT E**

Form of the Patent

**STATE OF UTAH PATENT NO. \_\_\_\_\_**

**WHEREAS,** \_\_\_\_\_, heretofore purchased from the State of Utah, the lands hereinafter described, pursuant to the laws of said State;

**AND WHEREAS,** the said \_\_\_\_\_ paid for said lands, pursuant to the conditions of said sale, and the laws of the State duly enacted in relation thereto, the sum of \_\_\_\_\_ Dollars and \_\_\_\_\_ Cents (\$ \_\_\_\_\_), and all legal interest thereon accrued, as fully appears by the certificate of sale;

**NOW THEREFORE I, GARY R. HERBERT, Governor,** by virtue of the power and authority vested in me by the laws of the State of Utah, do issue this PATENT, in the name and by the authority of the State of Utah, hereby granting and confirming unto the said \_\_\_\_\_, and to its successors and assigns forever, the following tract or parcel of land, situated in the County of Tooele, State of Utah, as more particularly described in Exhibit A attached hereto and incorporated by reference.

**TO HAVE AND TO HOLD** the above described and granted premises unto the said \_\_\_\_\_, and to its successors and assigns forever,

Excepting and reserving to the State of Utah, for the benefit of the State and its successors in interest, assigns, permittees, licensees and lessees from time to time, all coal, oil and gas and other mineral deposits, along with the right for the Trust Lands Administration or other authorized persons or entities to prospect for, mine, and remove the deposits, but only to the extent such prospecting, mining, and removal will not materially or unreasonably interfere with Purchaser's use of the surface estate of the conveyed property; also,

Subject to Easement No. 1249, Easement No. 1274 and Easement No. 1466; also,

[Subject to cultural resource covenants, if applicable.]

Subject to any valid, existing rights of way of any kind and any right, interest, reservation or exception appearing of record, subject to exceptions and reservations contained in federal patents and clear lists (or other such documents conveying title to the Property from the federal government), and subject also to all rights of way for ditches, tunnels, and telephone and transmission lines that have been or may be constructed by the United States as provided by statute.

[Signature blocks omitted in exhibit.]

**EXHIBIT B**

**NOTICE TO NEIGHBORING  
PROPERTY OWNERS**





SALT LAKE AREA OFFICE  
6771 SOUTH 900 EAST  
MIDVALE, UTAH 84047  
PHONE: (801) 566-5599  
FAX: (801) 566-5581  
[www.hansenallenluce.com](http://www.hansenallenluce.com)

Utah School and Institutional Trust Lands Administration  
675 East 500 South, Suite 500  
Salt Lake City, UT 84102

October 1, 2014

Subject: Proposed Stericycle, Inc., facility on Rowley Road in Tooele County, Utah

To Whom It May Concern:

Notice is hereby given that Stericycle, Inc., intends to apply to the Utah Division of Solid and Hazardous Waste for a permit to construct, own, and operate a solid waste incinerator in unincorporated Tooele County, Utah. The facility will be located in the southwest quarter of the northeast quarter of Section 3, Township 1 North, Range 8 West, Salt Lake Base & Meridian, immediately east of Rowley Road as shown in the attached figures.

The Utah Division of Solid and Hazardous Waste may be contacted if you would like to review and comment on the permit application:

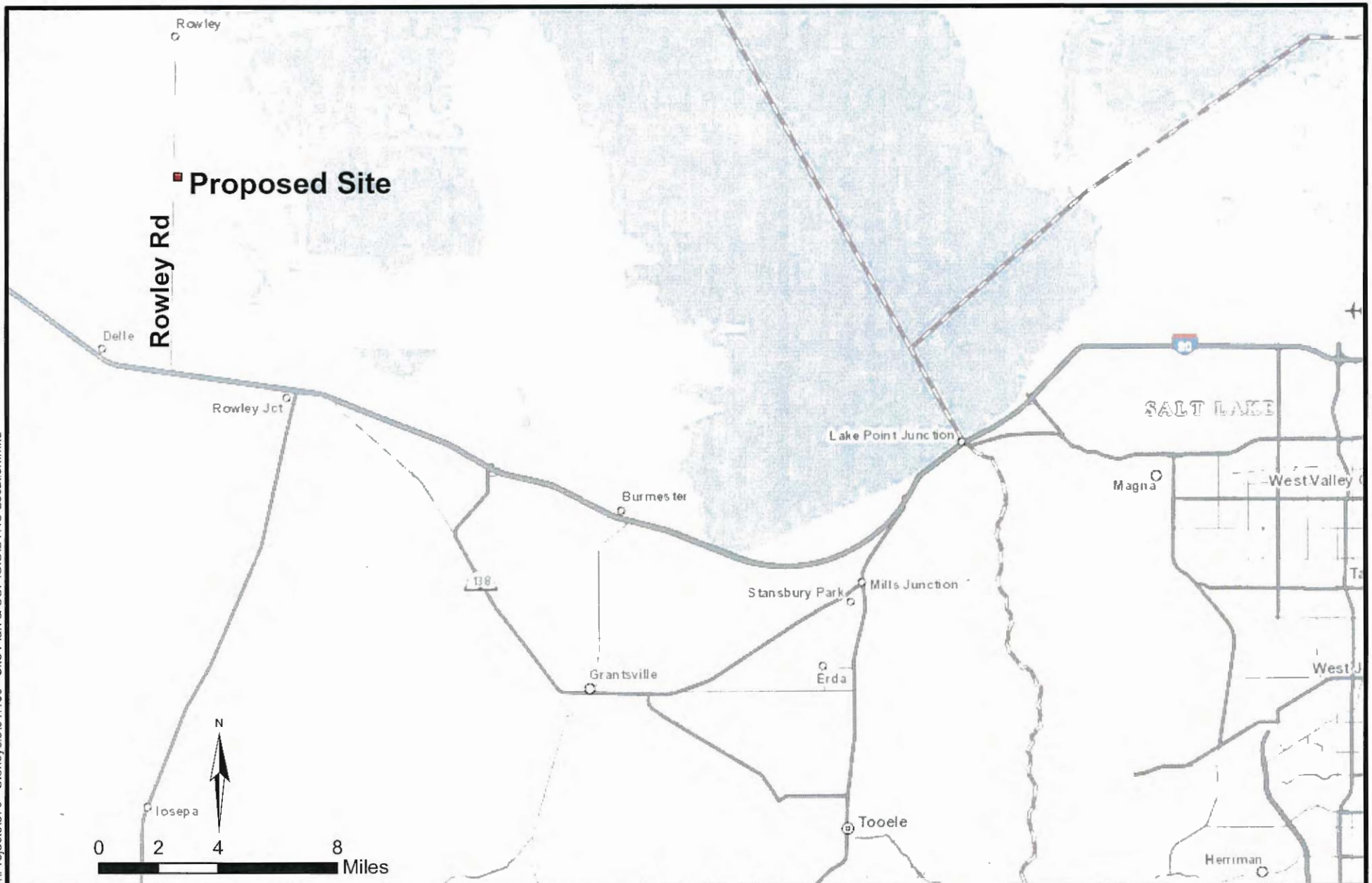
Utah Division of Solid and Hazardous Waste  
P.O. Box 144880  
Salt Lake City, UT  
84114-4880  
Phone: 801-536-0200  
Fax: 801-536-0222

Sincerely,

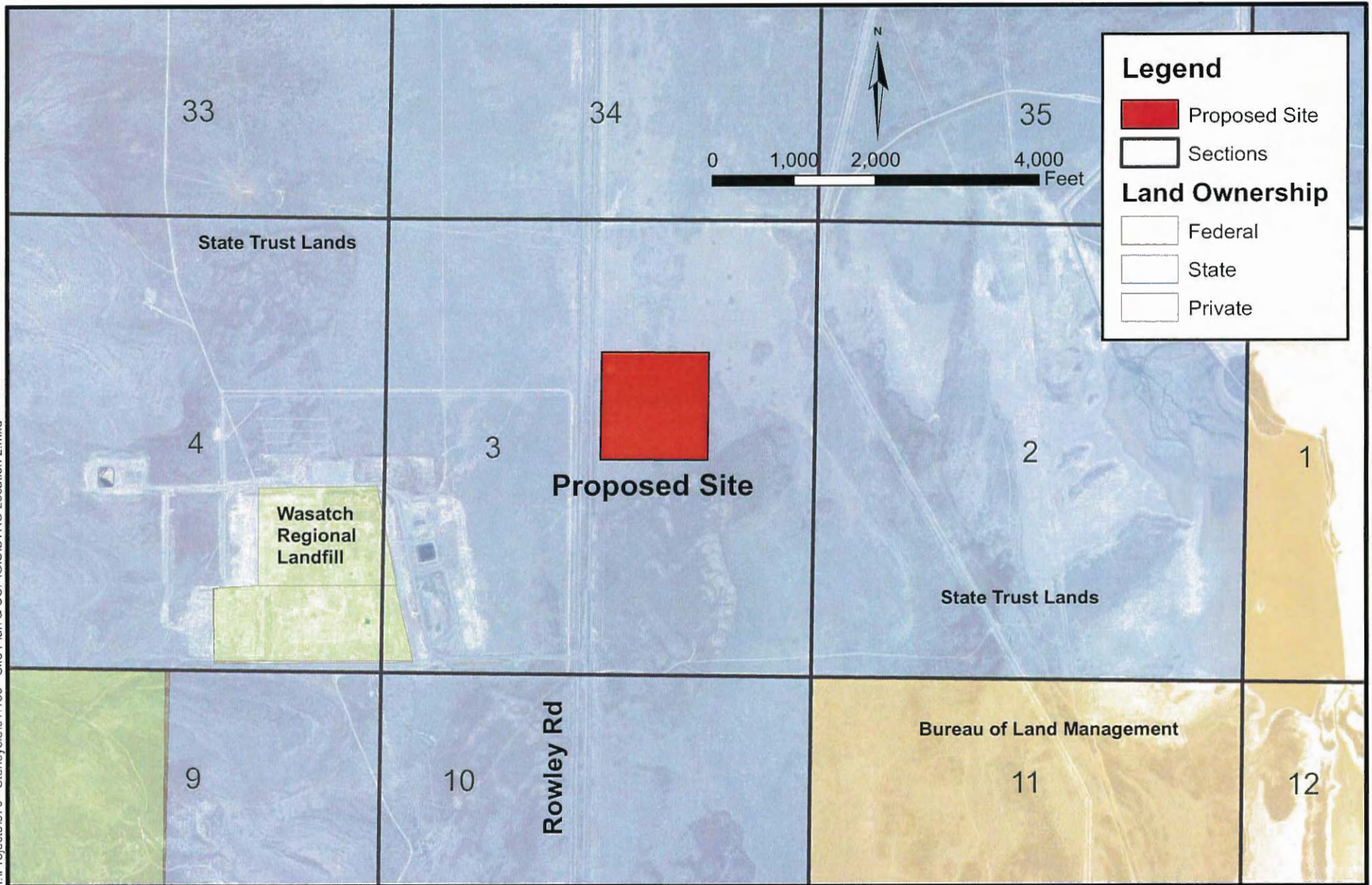
A handwritten signature in black ink, appearing to read 'Gordon L. Jones', is written over a horizontal line.

Gordon L. Jones, P.E.  
Project Manager  
Hansen, Allen & Luce, Inc.











7555 4544 0001 2250 0001 7555

U.S. Postal Service™ CERTIFIED MAIL™ RECEIPT (Domestic Mail Only; No Insurance Coverage Provided)		
For delivery information visit our website at <a href="http://www.usps.com">www.usps.com</a>		
OFFICIAL USE		
Postage	\$ 20.45	0010
Certified Fee	\$ 3.20	16 Postmark Here
Return Receipt Fee (Endorsement Required)	\$ 2.70	
Restricted Delivery Fee (Endorsement Required)	\$ 0.00	
Total Postage & Fees	\$ 26.35	10/01/2014
Sent To Utah School and Institutional Trust Lands Admin Street, Apt. No., or PO Box No. 675 E 500 S, Suite 500 City, State, ZIP+4 Salt Lake City UT 84102		
PS Form 3800, August 2006		See Reverse for Instructions

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<ul style="list-style-type: none"> <li>Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</li> <li>Print your name and address on the reverse so that we can return the card to you.</li> <li>Attach this card to the back of the mailpiece, or on the front if space permits.</li> </ul>	A. Signature X <i>Effie Burns</i> <input checked="" type="checkbox"/> Agent <input type="checkbox"/> Addressee B. Received by (Printed Name) <i>Effie Burns</i> C. Date of Delivery <i>10/2/14</i> D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No
1. Article Addressed to: <i>Utah School &amp; Institutional Trust Lands Admin</i> <i>675 E, 500 S Ste 500</i> <i>SLC, UT 84102</i>	3. Service Type <input checked="" type="checkbox"/> Certified Mail® <input type="checkbox"/> Priority Mail Express™ <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> Collect on Delivery
2. Article Number (Transfer from service label)	4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes
PS Form 3811, July 2013 Domestic Return Receipt	

7013 2250 0001 4544 7555

**EXHIBIT C**

**TOOELE COUNTY  
CONDITIONAL USE PERMIT**



Conditional Use Permit 2014-03  
STERICYCLE, INC.  
MEDICAL INCINERATOR FACILITY  
LOCATED AT APPROX. 9250 N. ROWLEY ROAD  
TOOELE COUNTY, UT

## CONDITIONAL USE PERMIT

### *Facts*

1. The applicant intends to locate and operate a medical waste incinerator facility.
2. The incinerator facility will be located on a 40 acre parcel of land located at approximately 9520 N. Rowley Road in Tooele County, UT.
3. The property is zoned Manufacturing General (M-G) which allows for an Incinerator, non-accessory as a conditional use requiring a conditional use permit to be granted by the Tooele County Planning Commission.
4. A public hearing was held July 9, 2014 before the Planning Commission.

### *Applicable Law*

1. Tooele County Land Use Ordinance Chapter 7 Conditional Uses
2. Tooele County Land Use Ordinance Chapter 17 Commercial, Industrial, and Hazardous Industries Zoning Districts

### *Decision*

We, the Tooele County Planning Commission, do hereby **GRANT** this Conditional Use Permit for **STERICYCLE, INC.** to use the property described as:

BEGINNING AT A POINT N00°58'46"W 2647.48 FEET FROM THE SOUTH QUARTER CORNER, BEING ALONG THE QUARTER SECTION LINE TO THE SOUTHWEST CORNER OF THE NORTHEAST QUARTER, THENCE ALONG THE QUARTER SECTION LINE S89°18'41"E 1326.02 FEET TO THE SIXTEENTH SECTION LINE; THENCE ALONG THE SIXTEENTH SECTION LINE N00°53'04"E 1320.75 FEET TO THE SIXTEENTH SECTION LINE; THENCE ALONG THE SIXTEENTH SECTION LINE N89°19'38"W 1323.83 FEET TO THE QUARTER SECTION LINE; THENCE ALONG THE QUARTER SECTION LINE S00°58'46"W 1320.39 FEET TO THE POINT OF BEGINNING

for the following purpose:

**CONDITIONAL USE PERMIT FOR A MEDICAL WASTE INCINERATOR FACILITY.**

Due to the unique characteristics of the use of the property or the potential impact on the county, surrounding neighbors or adjacent land, to mitigate or eliminate the detrimental impacts and for

protection of adjacent property and the public welfare (see Section 7-1 and 7-5 of the Tooele County Land Use Ordinance), we hereby find it necessary to and hereby impose the following conditions, which must be complied with to establish and continue to use the property:

1. A permit to operate a Solid Waste Incinerator be sought and obtained through and regulated by the Utah Division of Solid and Hazardous Waste.
2. A Solid Waste Management permit be sought and obtained through and regulated by the Tooele County Health Department.
3. An operating permit for air emissions, as required by the Clean Air Act, be sought and obtained through and regulated by the Utah Division of Air Quality.
4. Water rights be sought and obtained through and regulated by the Utah Division of Water Rights.
5. Well drilling and groundwater development occur under permits from the Utah Division of Water Rights and the Utah Division of Drinking Water.
6. An operating permit for a drinking water system be sought and obtained through and regulated by the Utah Division of Drinking Water.
7. The drinking water system also be permitted and regulated by the Tooele County Health Department.
8. Water use will be reported annually as required by the Utah Division of Water Rights.
9. A wastewater disposal system will be sought and obtained through and regulated by the Tooele County Health Department.
10. A building permit will be sought and obtained through the Tooele County Building and Development Services Division.
11. Provide annual updates to Tooele County.
12. Notify Tooele County Health Department of stack tests and provide test results to the Tooele County Health Department.
13. Acceleration and deceleration lanes on Rowley Road be constructed to provide better traffic flow and safety with final road improvement drawings reviewed and approved by the Tooele County Roads Department and final inspection of improvements be done by the Tooele County Roads Department.

Failure of Stericycle, Inc. to observe any condition specified herein may result in revocation of the permit. Unless there is substantial action under this permit within one year of its issuance, the permit expires. The zoning administrator will make periodic inspections to insure compliance with conditions imposed.

Any person aggrieved by a decision of the planning commission or the zoning administrator regarding the issuance, denial or revocation or amendment of a conditional use permit may appeal such decision to the Board of County Commissioners within 30 days of the date of the decision was made by the Planning Commission.

Dated this 9<sup>th</sup> day of July, 2014.

Martha L. Leo  
Chairman, Tooele County Planning Commission

I, the representative for Stericycle, Inc., do hereby accept the foregoing condition and agree to abide by it.

Dated this 23<sup>rd</sup> day of July, 2014.

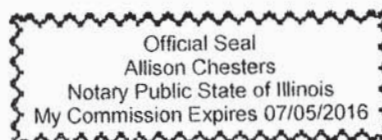
[Signature]  
Representative's Signature

Illinois  
State of ~~Utah~~  
County of COOK ) s.s.

On the 23<sup>rd</sup> day of July, 2014, personally appeared before me, Stericycle, Inc., the signed of the Conditional Use permit, who duly acknowledged to me that they, signed it freely and voluntarily and for the uses and purpose therein mentioned.

Allison Chesters  
Notary residing in Lake County

My Commission expires on 7/5/16





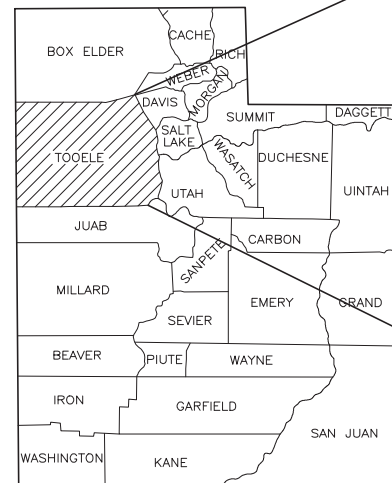
# STERICYCLE, INC.

28161 N KEITH DRIVE  
LAKE FOREST, IL 60045  
1-847-367-5910

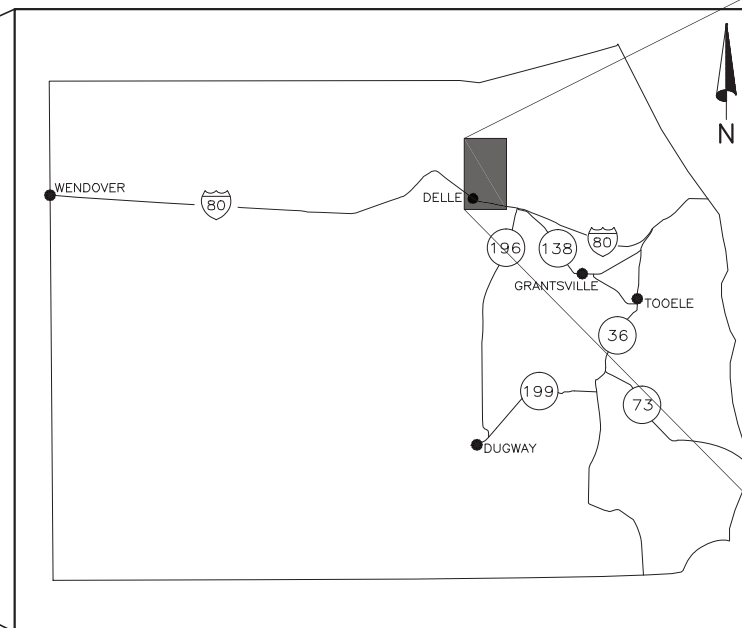
**PRELIMINARY PLANS  
NOT FOR CONSTRUCTION**

## TOOELE COUNTY FACILITY CONDITIONAL USE PERMIT APPLICATION MAY 2014

PARCEL DESCRIPTION:  
SW 1/4 OF THE NE 1/4 OF SECTION 3,  
TOWNSHIP 1 NORTH, RANGE 8 WEST, SLB&M  
POVERTY POINT PLANNING DISTRICT



STATE OF UTAH



VICINITY MAP



PROJECT LOCATION

HANSEN, ALLEN & LUCE DESIGN TEAM

MARVIN E. ALLEN, P.E. — PRINCIPAL IN CHARGE  
GORDON L. JONES, P.E. — PROJECT MANAGER  
ROBERT B. SOWBY, P.E.I. — PROJECT ENGINEER  
BRAD D. DALEY, P.L.S. — PROJECT SURVEYOR









10/07  
FILE NAME: H:\Projects\370 - Stericycle\01.130 - Site Plan & CUP\CAD Working Drawings\STRC CUP.dwg  
FILE DATE: 5/28/2014 RBS



PROJECT ENGINEER	DESIGNED	GLJ/RBS	3		
	DRAFTED	RBS	2		
	CHECKED		1		
	DATE	MAY 2014	NO.	DATE	

REVISIONS					
				BY	APVD.

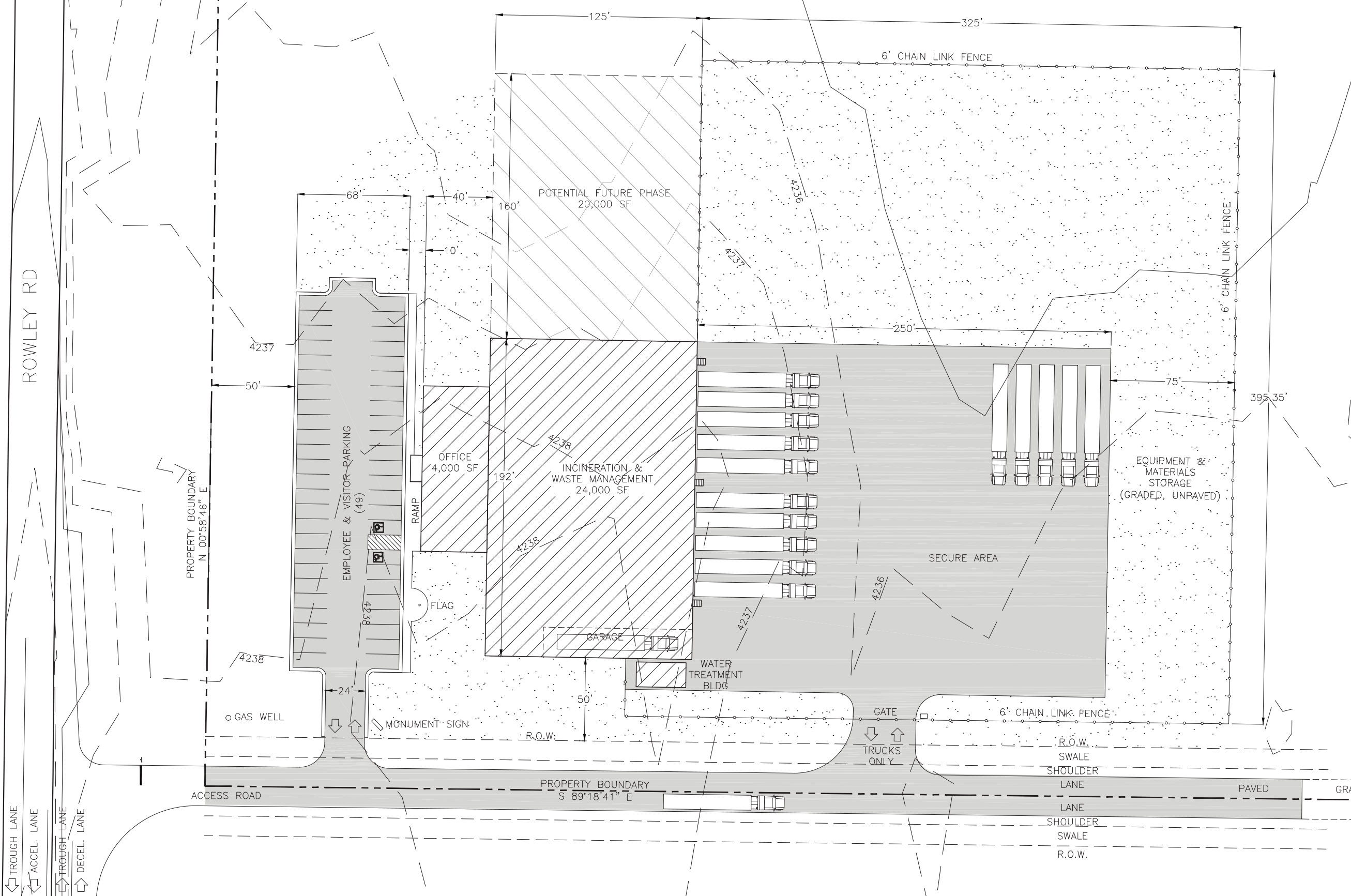
SCALE  
1"=60'

STERICYCLE, INC.

TOOELE COUNTY FACILITY  
CONDITIONAL USE PERMIT  
SITE PLAN

SHEET  
CUP-2  
370.01.130

NOTE: PRELIMINARY DRAWINGS FOR CONDITIONAL USE  
PERMIT APPLICATION ONLY AND SUBJECT TO CHANGE. NOT  
TO BE USED FOR CONSTRUCTION. FINAL DESIGN DRAWINGS  
WILL BE COMPLETED AND REVIEWED PRIOR TO  
CONSTRUCTION.



FILE NAME: H:\Projects\370 - Stericycle\01.130 - Site Plan & CUP\CAD\Working Drawings\STRC CUP.dwg  
FILE DATE: 5/28/2014 RBS

10/07



PROJECT ENGINEER

DESIGNED GLJ/RBS  
DRAFTED RBS  
CHECKED  
DATE MAY 2014

3  
2  
1  
NO.

DATE

REVISIONS

BY APVD.

SCALE

1"=60'

STERICYCLE, INC.

TOOELE COUNTY FACILITY  
CONDITIONAL USE PERMIT  
SITE PLAN - GRADING

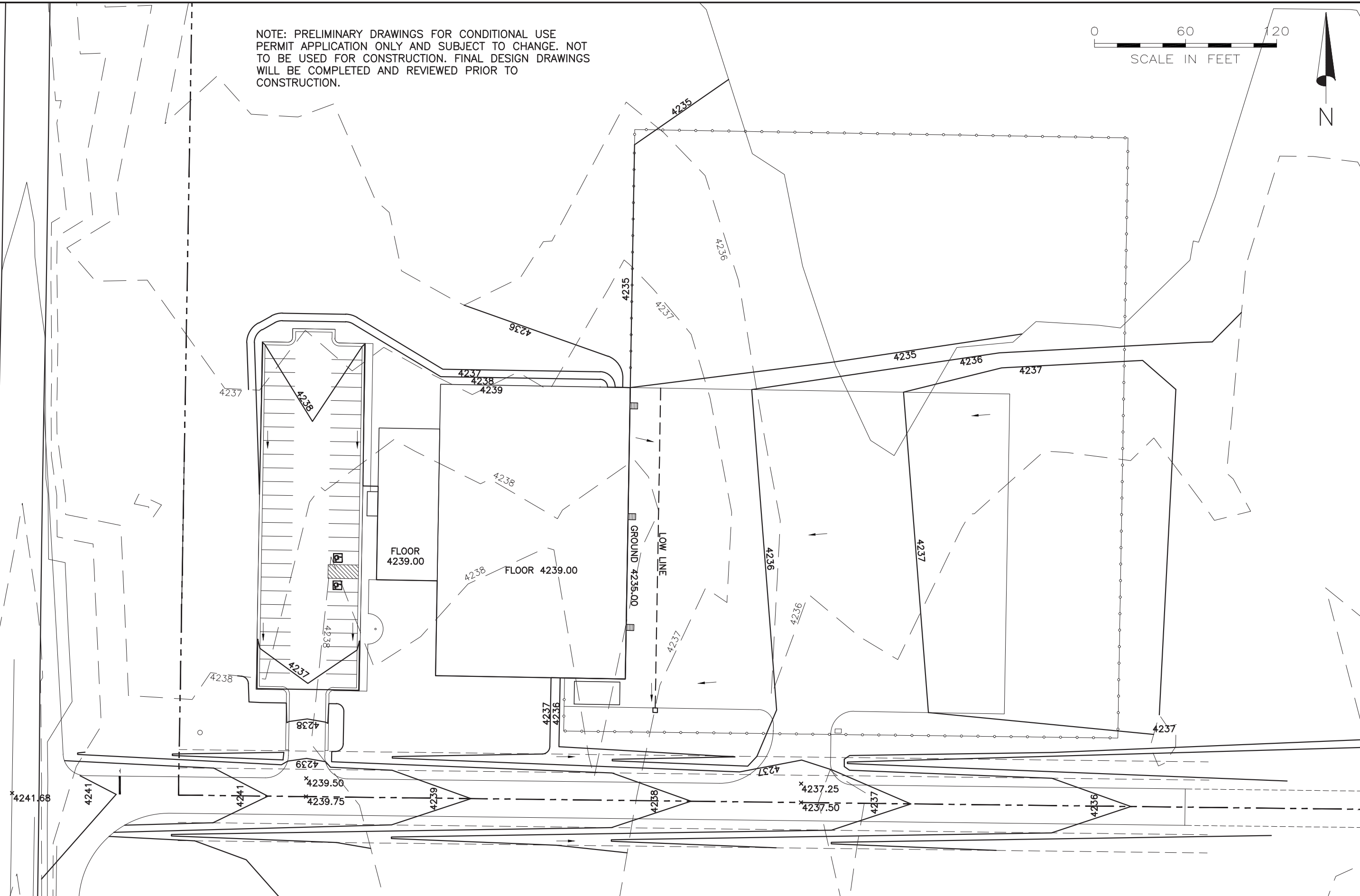
SHEET

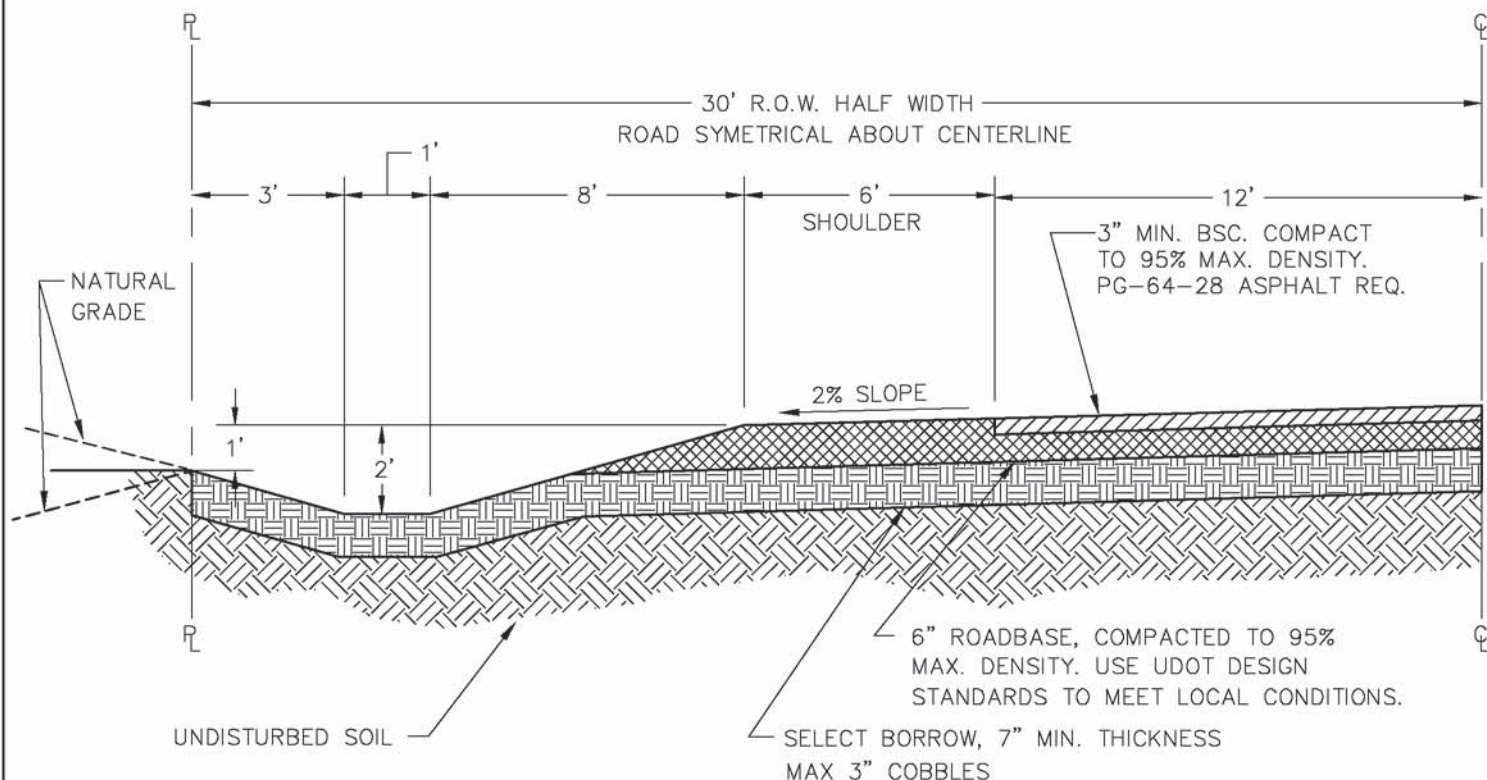
CUP-3

370.01.130

NOTE: PRELIMINARY DRAWINGS FOR CONDITIONAL USE  
PERMIT APPLICATION ONLY AND SUBJECT TO CHANGE. NOT  
TO BE USED FOR CONSTRUCTION. FINAL DESIGN DRAWINGS  
WILL BE COMPLETED AND REVIEWED PRIOR TO  
CONSTRUCTION.

0 60 120  
SCALE IN FEET





## STREETS WITHOUT CURB, GUTTER, & SIDEWALK

ROAD DETAILS

LOCAL ACCESS ROADS

TOOELE COUNTY ENGINEERING

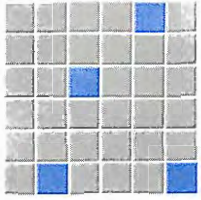
/S/ JIM LAWRENCE P.E.  
Approval

12/6/07  
Date

**EXHIBIT D**

**HISTORICAL SURVEY  
DOCUMENTATION**





State of Utah  
School & Institutional  
Trust Lands Administration

675 East 500 South, Suite 500  
Salt Lake City, UT 84102-2818  
801-538-5100  
801-355-0922 (Fax)  
www.trustlands.com

Gary R. Herbert  
Governor

Spencer J. Cox  
Lieutenant Governor

Kevin S. Carter  
Director

Parsons Behle & Latimer  
201 South Main Street, Suite 1800  
Salt Lake City, Utah 84111  
Attn: Shawn C. Ferrin

**Re: Cultural Resource Survey and Consultant Fees on Lands Subject to Certificate of Sale  
No. 26594**

Dear Shawn,

The State of Utah, School and Institutional Trust Lands Administration ("SITLA") and your client, Stericycle, Inc. ("Stericycle"), entered into Certificate of Sale No. 26594 (the "Certificate") effective April 25, 2014 for the sale of a parcel of land in Tooele County, Utah (the "Sale Parcel"). Pursuant to Section 3.3 of the Certificate, Stericycle deposited \$10,000 into escrow with First American Title Insurance Company ("First American") to pay for consultant costs associated with a cultural resource survey to be performed on the Sale Parcel.

The cultural resource survey has been completed, and no cultural resource sites were identified on the Sale Parcel. The Sale Parcel will, therefore, be conveyed without any covenants related to cultural resources.

The total consultant fees allocable to the Sale Parcel equaled \$1,072. First American has released this amount to SITLA from escrow. By cc'ing First American on this letter, SITLA hereby authorizes First American to release from escrow the remaining \$8,928 for cultural resource fees, and any interest that accrued thereon, to Stericycle.

Sincerely,

Michelle E. McConkie, Legal Counsel

Cc: Elizabeth A. Schulte

First American Title Insurance Company  
585 West 500 South  
Bountiful, Utah 84010  
Attn: Angie Wheeler Dastic



GARY R. HERBERT  
*Governor*

SPENCER J. COX  
*Lieutenant Governor*

Julie Fisher  
*Executive Director  
Department of  
Heritage & Arts*



Brad Westwood  
*Director*

October 9, 2014

Joel Boomgarden  
Trust Lands Administration  
675 East 500 South, Suite 500  
Salt Lake City, Utah 84102-2818

RE: Interstate 80 Block Development Project, Tooele County, Utah

For future correspondence please reference Case No. 14-1401

Dear Mr. Boomgarden:

The Utah State Historic Preservation Office received your request for our comment on the above referenced undertaking on October 7, 2014.

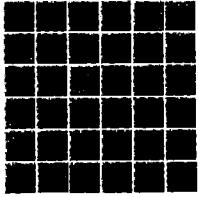
We concur with your determinations of eligibility and effect for this undertaking.

Utah Code 9-8-4-4(1)(a) denotes that your agency is responsible for all final decisions regarding cultural resources for this undertaking. Our comments here are provided as specified in U.C.A. 9-8-4-4(3)(a)(i). If you have questions, please contact me at 801-245-7263 or Lori Hunsaker at 801-245-7241 [lhunsaker@utah.gov](mailto:lhunsaker@utah.gov).

Sincerely,

Chris Merritt, Ph.D.  
Senior Preservation Specialist  
[comerritt@utah.gov](mailto:comerritt@utah.gov)

UTD 988078150  
Division of  
Solid and Hazardous Waste  
OCT - 7 2014  
2014-013290



State of Utah  
School & Institutional  
Trust Lands Administration

Gary R. Herbert  
Governor

Spencer J. Cox  
Lieutenant Governor

Kevin S. Carter  
Director

675 East 500 South, Suite 500  
Salt Lake City, UT 84102-2818  
801-538-5100  
801-355-0922 (Fax)  
www.trustlands.com

Roy Vanos

Division of Solid and Hazardous Waste

195 North 1950 West

PO Box 144880

Salt Lake City, Ut 84114

October 6, 2014

RE: Cultural Resource Inventory for the Interstate 80 Development Block Stericycle Sale Parcel

Dear Mr. Vanos,

Enclosed is a copy of the cultural resources inventory report prepared by Environmental Planning Group (EPG) on behalf of the State of Utah, School and Institutional Trust Lands Administration (SITLA) as well as a copy of the letter sent to the Deputy State Historic Preservation Officer.

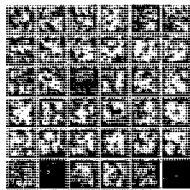
Stericycle, in cooperation with SITLA, have developed plans to sell 40 acres of SITLA property to Stericycle for the construction of a new incinerator facility. The proposed sale and construction of this facility constitutes an undertaking by agency rule (U.A.C. R850-60-200:8) and thus requires consideration of the potential impacts to historic properties consistent with U.A.C. § 9-8-404

In February of 2014 SITLA contracted EPG to conduct a Class III cultural resources inventory of 650 acres of SITLA property in association with the proposed sale of 40 acres to Stericycle. The inventory identified three new archaeological sites. The sites are located south of the Stericycle parcel and will not be impacted by the sale or the new construction. SITLA archaeologists have therefore determined that the project proceed without alterations or adjustments. If you have any questions please feel free to contact me, jboomgarden@utah.gov.

Sincerely,

Joel Boomgarden

OCT - 7 2014



State of Utah  
School & Institutional  
Trust Lands Administration

675 East 500 South, Suite 500  
Salt Lake City, UT 84102-2818  
801-538-5100

Gary R. Herbert  
Governor

Spencer J. Cox  
Lieutenant Governor

801-355-0922 (Fax)  
www.trustlands.com

Kevin S. Carter  
Director

Lori Hunsaker

Deputy State Historic Preservation Officer

State History

300 Rio Grande

Salt Lake City, Ut 84101

October 6, 2014

RE: Cultural Resources Inventory of the Interstate 80 Block Development Project, Tooele County, Utah

Dear Ms. Hunsaker

Enclosed for your review and comment is a survey report and attached IMACS form for the Interstate 80 Block Development project (U-14-EO-0051s). Stericycle Inc., in cooperation with SITLA, have developed plans to sell 40 acres of SITLA property to Stericycle for the construction of a new incinerator facility (see attached map). The proposed sale and construction of this facility constitutes an undertaking by agency rule (U.A.C. R850-60-200:8) and thus requires consideration of the potential impacts to historic properties consistent with U.A.C. § 9-8-404

In February, 2014 Environmental Planning Group (EPG) was contracted to complete a Class III cultural resources inventory of 650 acres of SITLA property around the Black Knoll area of the Interstate 80 Development Block. The inventory identified three new sites, 42To5955, 42To5956, 42To5957 and seven isolated occurrences. All three sites are described as prehistoric artifact scatters and all three are located in semi-stabilized sand dunes. Because of the dune location, all three sites were subjected to limited subsurface testing to aid in the eligibility recommendation process.. As a result of these efforts, site 42To5956 is recommended *not eligible* for nomination to the National Register of Historic Places as it fails to meet the requirements outlined in criterion (a), (b), (c), or (d). Sites 42To5955 and 42To5957 are recommended *eligible* for nomination to the National Register of Historic Places under criteria (d)



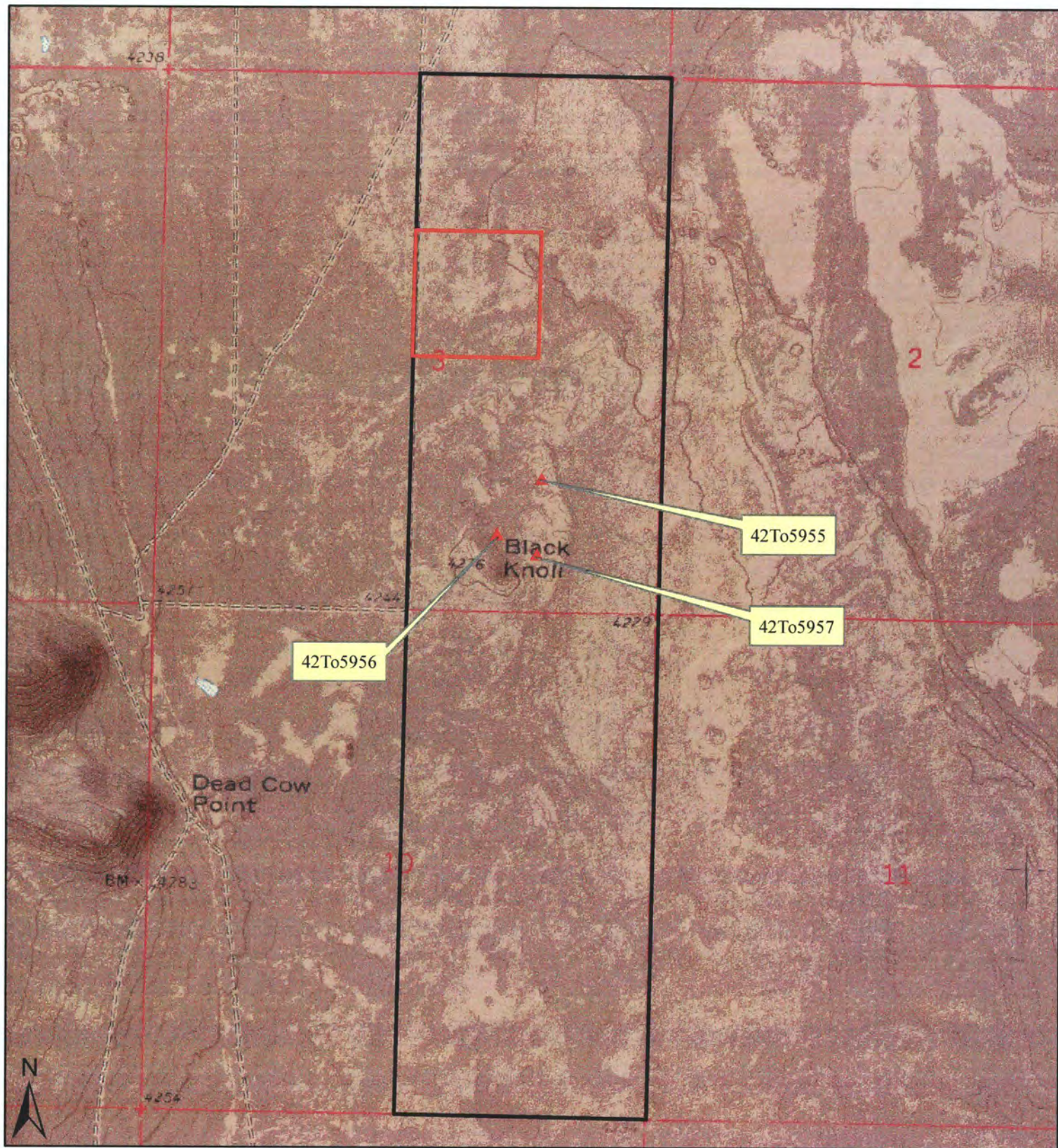
SITLA has determined that the location of the new Stericycle facility will not impact these sites and that the project proceed without alterations or adjustments. We are therefore asking for your concurrence with our determination of *no effect*. If you have any questions please feel free to contact me, jboomgarden@utah.gov.



Sincerely,

A handwritten signature in black ink, appearing to read "Joel Boomgarden". The signature is fluid and cursive, with the first name "Joel" written in a stylized, looped manner and the last name "Boomgarden" written in a more standard cursive script.

Joel Boomgarden






-  Project Area
-  Stericycle Sale Parcel

**Map showing the overall project area,  
the locations of three sites and  
the Stericycle sale parcel.**

0 0.125 0.25 0.5 Kilometers



0 0.125 0.25 0.5 Miles





**A CULTURAL RESOURCES INVENTORY FOR THE  
STATE OF UTAH SCHOOL AND INSTITUTIONAL  
TRUST LANDS ADMINISTRATION  
INTERSTATE 80 BLOCK DEVELOPMENT PROJECT  
TOOELE COUNTY, UTAH**

Prepared for:

**State of Utah  
School and Institutional Trust Lands Administration**

Prepared by:

**Andrew T. Yentsch, M.S., RPA  
and  
Suzanne B. Eskenazi, M.A., RPA**

**Environmental Planning Group, LLC  
208 East 800 South  
Salt Lake City, Utah 84111**

**Utah Public Lands Policy Coordination Office Permit No. 89**

**Utah Antiquities Project No. U-14-EO-0051s**

**Cultural Resources Report No. SLC-2014-02**

**March 27, 2014**

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## **ABSTRACT**

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In the winter of 2014, the State of Utah School and Institutional Trust Lands Administration (SITLA) requested Environmental Planning Group, LLC (EPG) of Salt Lake City, Utah, complete a Class III cultural resources inventory of two SITLA-owned parcels in Tooele County, Utah in anticipation of potential development activities associated with the Interstate 80 (I-80) Block Development Project (Project). The purpose of this inventory was to identify, record, and determine the extent and significance of all cultural resources in the Project area to assist in the identification of locations for avoidance during potential future development activities.

A Class I cultural resources file search was completed for the potential sales parcel, as well as for a 1-mile area surrounding the parcels. Class III cultural resources inventories were completed for 650 acres (263 hectares) of SITLA administered land located in Tooele County, Utah, approximately 21 miles (33.8 kilometers) west-northwest of Grantsville. The Project area encompasses the eastern half of Sections 3 and 10, Township 1 North, Range 8 West. The cultural resources surveys were conducted by EPG archaeologists on March 5 and 10, 2014, with evaluative testing performed on March 12, 2014. All cultural resources work was carried out under authority of Utah State Antiquities Project Number U-14-EO-0051s and Public Lands Policy Coordination Office Permit Number 89 (Andrew T. Yentsch).

Three new cultural resources sites (42TO5955, 42TO5956, and 42TO5957) and seven isolated occurrences (IO1 to IO7) were documented during the pedestrian surveys completed for the Project. Two new sites (42TO5955 and 42TO5957) are recommended eligible for inclusion in the National Register of Historic Places.



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## **ACRONYMS AND ABBREVIATIONS**

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A.D.	Anno Domini
APE	Area of Potential Effects
BLM	Bureau of Land Management
B.P.	Before the present era
CCS	Crypto-crystalline silicate
CFR	Code of Federal Regulations
EPG	Environmental Planning Group, LLC
FCR	Fire-cracked rock
GLO	General Land Office
GPS	Global Positioning System
IMACS	Intermountain Antiquities Computer System
IO	Isolated occurrence
m	Meter
m <sup>2</sup>	Square meters
NAD83	North American Datum, 1983
NRHP	National Register of Historic Places
SHPO	State Historic Preservation Office (State of Utah)
SITLA	School and Institutional Trust Lands Administration (State of Utah)
UTM	Universal Transverse Mercator



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## **INTRODUCTION**

In February of 2014, the State of Utah School and Institutional Trust Lands Administration (SITLA) requested Environmental Planning Group, LLC (EPG) of Salt Lake City, Utah, complete a Class III cultural resources inventory of two SITLA-owned parcels in Tooele County, Utah in anticipation of potential development activities associated with the Interstate 80 (I-80) Block Development Project (Project). The purpose of this inventory was to identify, record, and determine the extent and significance of all cultural resources in the Project area to assist SITLA's compliance with the Utah Antiquities Act, *Utah Code Annotated* Section 9-8-404, in the identification of locations requiring protection, additional treatment, or mitigation prior to potential development activities.

Prior to the surveys, a Class I cultural resources file search was completed for the two parcels, as well as for a 1-mile area surrounding them. This file search was conducted primarily to determine whether or not known cultural resources had been previously identified within the boundaries of the Area of Potential Effects (APE) and secondarily to assess the type or types of cultural resources that may be encountered during the investigation.

Class III cultural resources inventories were completed for 650 acres (263 hectares) of SITLA administered land located in Tooele County, Utah, due east of the Lakeside Mountains, approximately 21 miles (33.8 kilometers) west-northwest of Grantsville. All cultural resources work was carried out under authority of Utah State Antiquities Project Number U-14-EO-0051s, and Public Lands Policy Coordination Office Permit Number 89 (Andrew T. Yentsch).

Fieldwork for the Project was conducted between March 5 and 12, 2014. EPG archaeologist Andrew T. Yentsch served as principal investigator and directed the Project, assisted by archaeologists Suzy Eskenazi, Jamie Clark, and Lindsay Fenner. Field notes and photographic materials from the Project are on file at EPG's office in Salt Lake City, Utah.

Three new cultural resources sites (42TO5955 to 42TO5957) and seven isolated occurrences (IO1 to IO7) were documented during the pedestrian surveys completed for the Project. Due to the geographic setting of the site locations, evaluative testing was conducted at all three sites to determine the potential for intact subsurface cultural deposits. Two of the sites encountered (42TO5955 and 42TO5957) are recommended eligible for inclusion in the National Register of Historic Places (NRHP).

### **Project Description**

The Project area is located in northwest Utah, 21 miles (33.8 kilometers) west-northwest of Grantsville, northeastern Tooele County (Figure 1). The Project consists of two conjoined block parcels located in the Lakeside Valley, west of Stansbury Bay of the Great Salt Lake, and east of the Lakeside Mountains north of I-80. The Project area encompasses the eastern half of Section 3, Township 1 North, Range 8 West; and the eastern half of Section 10, Township 1 North, Range 8 West (Figure 2). Topographic map coverage of the Project area is provided by the Poverty Point, Utah (1968) 7.5-minute U.S. Geological Survey (USGS) quadrangle.

## **ENVIRONMENTAL OVERVIEW**

### **Geology**

The Project area is located in the Lakeside Section of the eastern Basin and Range Physiographic Province (Stokes 1986:255). This region is characterized by extensively faulted north-south trending mountain ranges interspersed by wide, alluvium-filled desert valleys (Grayson 1993:14). The Lakeside Section itself can be characterized as an elevated area of several low mountains separating the Great Salt Lake from the Great Salt Lake Desert (Stokes 1986:255). Elevations in the APE range from 4,232 feet (1,290 meters) above sea level in the flats to 4,276 feet (1,303 meters) above sea level at Black Knoll.

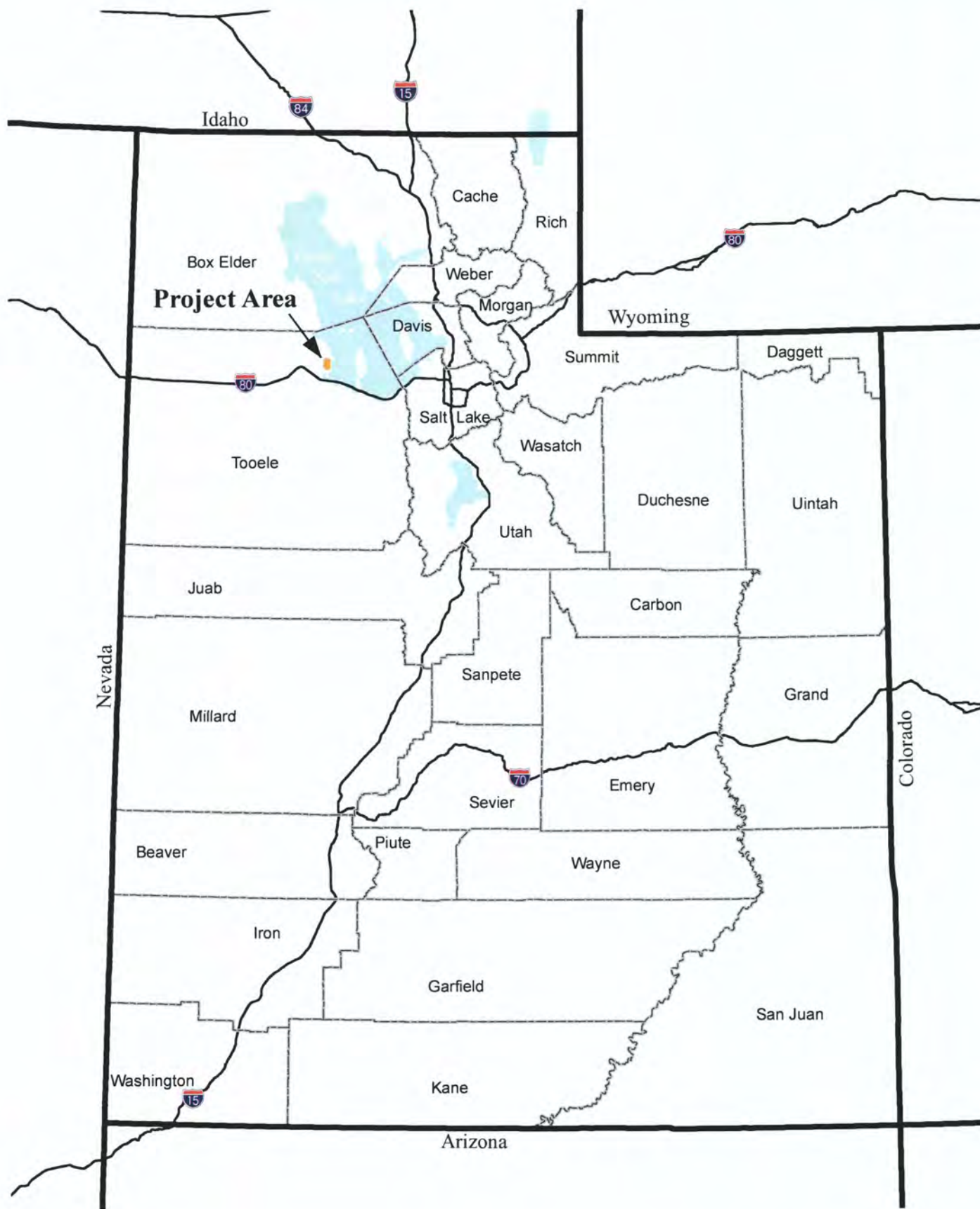
The surface geology of the Project area is composed of alluvium and Quaternary Lake Bonneville deposits (Hintze 1997). Lake Bonneville, which was a dominant feature on the landscape during the late Pleistocene epoch, shaped the modern face of the valleys in and around the Project area (Currey et al. 1984). At its largest extent, Lake Bonneville covered an area measuring approximately 19,970 square miles and the entire Project area was inundated with water (Currey et al. 1984; Grayson 1993:88-89). The lake reached its apex approximately 16,000 years ago (Grayson 1993:88-89). Roughly 14,500 B.P. (before the present era), the lake rose to a level that breached the 5,000 foot (1,524 meters) level at Red Rock Pass in southern Idaho, resulting in the Bonneville Flood. This event caused the lake to drop some 350 feet (105 meters) to what is now the next lower bench (the Provo shoreline) in a flood geologists estimate to have lasted up to a year. About 10,000 years ago, Lake Bonneville and the pluvial lakes had dried up (Grayson 1993:89). The Great Salt Lake, Utah Lake, Sevier Lake, Rush Lake, and Little Salt Lake are what remain of this once vast inland sea.

### **Soils**

Sediments mapped in the Project area are composed mostly of silty loam derived from mixed alluvium and mixed lacustrine deposits, with minor exposures of weathered limestone. The Project area is characterized as a lake terrace landform, immediately west of the Great Salt Lake playa. Area sediments are moderately-to-strongly saline and range from well-drained silty clay loam to well-drained silt loam, to very fine sand (Natural Resources Conservation Service 2013). Organic content is low, resulting in blocky and structurally weak soils that are highly susceptible to erosion.

### **Vegetation**

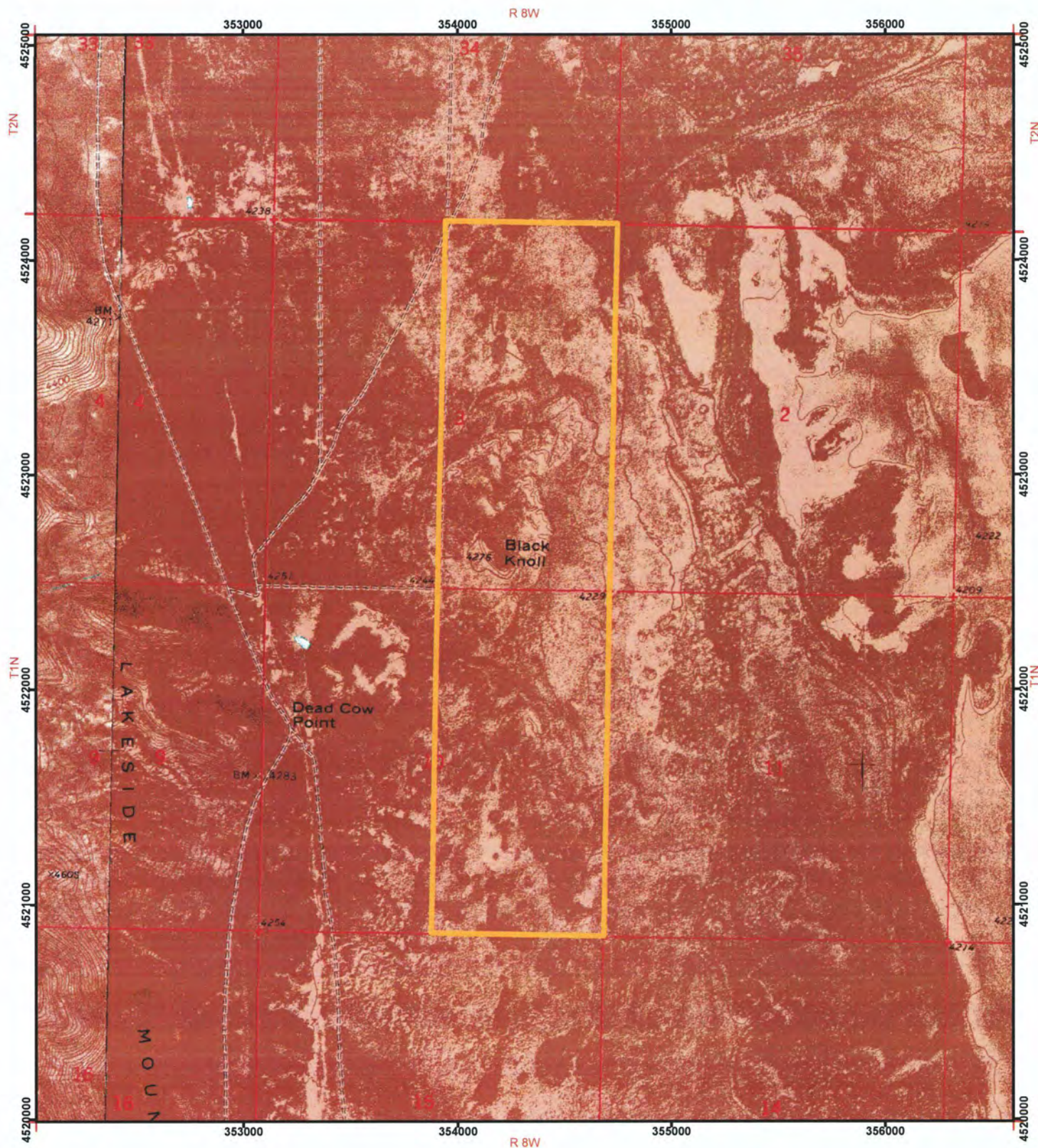
Plant communities occurring in and immediately surrounding the APE contain taxa characteristic of the Upper Sonoran Life Zone (Cronquist et al. 1972). The most common vegetation communities in the area consist of greasewood flats and invasive grassland.



General Project Location  
Figure 1

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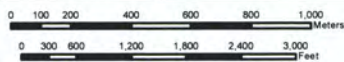




## Legend

### Project Reference

Location of Areas Surveyed



USGS Quadrangle: Poverty Point

**1:24,000**  
UTM 12 North  
North American 1983



FIGURE 2 DETAILED PROJECT LOCATION MAP

SITLA I-80 BLOCK DEVELOPMENT PROJECT

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The Project area is located in a relatively flat valley bottom dominated by greasewood flat habitat. Greasewood flat habitat occurs in flood-prone saline soils and is often surrounded by desert shrub species including sagebrush (*Artemisia* spp.) and rabbit brush (*Chrysothamnus nauseosus*). Greasewood flats are dominated by greasewood (*Sarcobatus vermiculatus*) and shadscale (*Atriplex confertifolia*) with rabbit brush, broom snakeweed (*Gutierrezia sarothrae*), prickly pear cactus (*Opuntia* spp.), and bunch-type grasses occurring as secondary taxa. Non-native Russian thistle (*Salsola* spp.) and cheatgrass (*Bromus tectorum*) are abundant throughout the Project area.

## **Wildlife**

A variety of reptiles, including the western rattlesnake (*Crotalus viridis*), gopher snake (*Pituophis catenifer deserticola*), and lizards, are known or are likely to occur in the Project area.

Raptors and upland game birds can be found in the area surrounding the Project area. Raptor species include turkey vulture (*Cathartes aura*), bald eagle (*Haliaeetus leucocephalus*), golden eagle (*Aquila chrysaetos*), red-tailed hawk (*Buteo jamaicensis*), common nighthawk (*Chordeiles minor*), and northern pygmy owl (*Glaucidium gnoma*). Upland game birds include chukar (*Alectoris chukar*) and greater sage-grouse (*Centrocercus urophasianus*) (Wernert 1982:81-155).

Numerous mammal species are known to occur in and immediately around the Project area, including various small mammals, various carnivorous mammals, and several ungulate species. Small mammal species include a variety of mice (*Dipodomys ordii*, *Peromyscus* spp., *Perognathus* spp.), voles, shrews, ground squirrels, gophers, kangaroo rats (*Dipodomys* sp.), rabbits (*Sylvilagus* sp.), and black-tailed jackrabbit (*Lepus californicus*) (Wernert 1982:44-60). Carnivore species in the area include badger (*Taxidea taxus*), coyote (*Canis latrans*), red fox (*Vulpes vulpes*), and striped skunk (*Mephitis mephitis*). Ungulates in the area include the American pronghorn (*Antilocarpa americana*) in the sagebrush, desert shrub, and grasslands (Wernert 1982:66-68). Elk (*Cervus elaphus*) and mule deer (*Odocoileus hemionus*) occupy foothill and montane habitats (Wernert 1982: 66-68) west of the APE.

## **Climate**

Lying in the eastern portion of the Great Basin, this area has a continental climate that is conditioned and characterized by the west-to-east flow of air related to the positioning of the jet stream and the orographic effects caused by changes (sometimes drastic) in topography (Burnham 1950). Precipitation occurs in the mountains throughout the year, and a deep snowpack accumulates during winter. During the summer, precipitation in the valley occurs as showers and occasionally as thunderstorms. The area receives 6 to 8 inches (roughly 17.8 centimeters) of precipitation annually, with most falling between May and September (Western Regional Climate Center [WRCC] 2013). Average temperatures vary with elevation and rarely exceed 90 degrees Fahrenheit. The record high temperature for nearby Lakeside is 102 degrees (1954), and the record low is -8 degrees (1955) (WRCC 2013). Maximum temperatures are reached in July and August and minimum temperatures are attained in December and January. The valleys in this portion of the Great Basin average 120 to 160 frost-free days per year.

## **CULTURAL OVERVIEW**

### **Prehistory**

Human occupancy of northwest Utah spans at least the last 10,000 years. The prehistory of the current Project area parallels that of western Utah and the eastern Great Basin in general, and begins near the end of the Pleistocene epoch. The series of cultural changes in the Great Basin are classified into four general time frames or phases: Paleoindian, Archaic, Formative, and Late Prehistoric. Each of these major phases is marked by a distinct lifeway. Following is a brief summary of the archaeological and historical evidence of the groups that inhabited the region. Many descriptions of the archaeology and history of the region have appeared elsewhere, and should be consulted for a fine-grained and comprehensive description of each (Aikens and Madsen 1986; Grayson 1993; Graf and Schmitt 2007; Madsen and Simms 1998; Marwitt 1986; Jennings 1978; Simms 2008; Janetski et al. 2012; Blanthorn 1998).

### **Paleoindian Period (Approximately 12,000 to 8,300 B.P.)**

The Paleoindian Period is the earliest known and least understood period of demonstrated human occupation in the region. What is known about this period comes from very few surface sites and isolated finds of Clovis, Folsom, and Lake Mojave projectile points (Zier 1984:21). Paleoindian social organization consisted of small groups practicing a highly mobile subsistence strategy with an emphasis on large game mammals such as giant bison, mammoth, camel, and ground sloth (Grayson 1993:71-72). However, associations of large faunal remains with Paleoindian artifacts like those commonly found in the Great Plains are absent in the eastern Great Basin. Sites and isolates attributed to Paleoindian occupation of the area are typically found along the edges of extinct Pleistocene or early Holocene beaches, suggesting a possible lake-edge marsh adaptation (Heizer and Baumhoff 1970; Madsen 1982:213). The relative absence of specialized tools for processing plant resources reinforces existing models of late Pleistocene-subsistence strategies (Black and Metcalf 1986; Schroedl 1991). The characteristic artifacts associated with this period include Clovis, Folsom, Lake Mojave, Great Basin Stemmed projectile points, and Crescents (Beck and Jones 1997; Justice 2002).

### **Archaic Period (Approximately 8,300 to 1,500 B.P.)**

The Archaic Period represents a significant span of time distinguished by a steady transition of lifeways and technologies (Jennings 1978:29). This period is characterized by an increased focus on smaller game and the exploitation of plant resources. The Archaic toolset exhibits a significant diversification in projectile point types and an increased presence of ground stone artifacts (Jennings 1978). Despite these marked differences, the transition between the Paleoindian and Archaic periods is poorly defined in many areas. Archaic cultures expanded across the Great Basin, resulting in a multitude of projectile point forms, sites, and lifeways. Several periods of the Archaic have been defined to illustrate these cultural shifts.

The Wendover Period ranges from approximately 8,300 to 6,000 B.P. as defined by Aikens and Madsen (1986:154), and it roughly corresponds to the Early Archaic Period described for other regions. Sites are found at many different elevations and in a wide variety of environments.

Excavation of dry caves in western Utah recovered basketry, cloth, cordage, digging tools, snares, buckskin, and fire drills (Jennings 1978:41-49). Grinding implements for plant processing and implements such as atlatls and traps for hunting small game are common. These artifact assemblages are indicative of the wide variety of activities engaged in by prehistoric inhabitants, who most likely followed a seasonal round of hunting and gathering. Projectile points common to the Wendover Period are the Elko Series, Pinto Series, Bitterroot Side-notched, and Humboldt Concave-base (Aikens and Madsen 1986; Jennings 1978).

The Black Rock Period ranges from 6,000 to 1,500 B.P. (Aikens and Madsen 1986:154). This range spans the Middle to Late Archaic Period as described in other Great Basin regions. It is initially characterized by a drier environment that resulted in diminishing lake-margin resources. Increasing pressure from population expansion and decreases in available food resources prompted a shift to greater mobility and movement into upland areas to take advantage of resources at higher elevations. Expansion into upland pinyon-juniper communities for the exploitation of mountain sheep, deer, and other animals became necessary (Aikens and Madsen 1986:157-158). The beginning of the Black Rock Period is distinguished technologically by the appearance of new Elko and Gypsum projectile point forms (Aikens and Madsen 1986:158). At around 4,000 B.P., Neoglacial climatic shifts resulted in increased rainfall, flooding springs, and increased marshlands. Subsistence activities shifted to an emphasis on upland areas due to the decrease in available plants and waterfowl from flooded areas (Aikens and Madsen 1986:158). The end of the Black Rock Period is distinguished by the introduction of the bow and arrow. This technology rapidly replaced the atlatl and diminished the importance of the spear. While the projectile point form remained constant in terms of basic form, overall size decreased (Aikens and Madsen 1986:160).

Also emergent at the end of the Black Rock Period were several characteristics of horticultural subsistence. The manufacture of pottery and the introduction of domesticated maize variants accompanied increased sedentism for the multiple horticultural communities that appeared throughout much of Utah, Eastern Nevada, Western Colorado, and Southern Idaho. Designated as the Fremont culture, this tradition flourished between 1,600 and 700 B.P. (Marwitt 1986:161).

### **Formative Period (1,600 to 700 B.P.)**

During the formative period, peoples of the Fremont culture introduced a new, moderately sedentary lifeway to the Great Basin. This period is characterized by a shift away from complete dependence on hunting and gathering as a means of subsistence toward a strategy based on supplementing that lifeway with maize horticulture and the appearance of small villages (Marwitt 1986:161). These villages often consist of clusters of semi-subterranean pit houses, slab or clay-lined storage pits, and occasional masonry structures such as surface dwellings and granaries. Satellite sites, or temporary encampments, are also common in the archaeological record of the Formative Period. Sites such as these are generally found relatively close to the centrally located village sites (Madsen 1982:217). The tool technology of the Formative period reflects the semi-sedentary horticultural lifestyle. Sites from these groups may contain large amounts of earthenware ceramics. Relatively large amounts of basketry and other woven artifacts, such as sandals, are also common in the archaeological record of the Formative Period. Lithic technology changed as well, resulting in the appearance of new projectile point types such



as the Uinta Side-notched, Nawthis Side-notched, Eastgate Expanding-stem, Bull Creek, Cottonwood Triangular, and Parowan Basal-notched series (Holmer and Weder 1980; Jennings 1978).

The Fremont Culture is a label applied to groups exhibiting this different lifestyle who occupied the Utah area from roughly 1,600 to 700 B.P. (Marwitt 1986:161). Although initially characterized as a “culture” with a number of “variants,” the Fremont has more recently been reconceived as a “complex” (Madsen and Simms 1998). Material culture appears to suggest that what archaeologists define as “Fremont” is more of a complex of traits and activities that varied over the entire region. In the eastern Great Basin, the aboriginal people of the Formative Period have typically been separated into five different regional groups or variants (Marwitt 1970). The current Project is located in the identified area of one of these variants, the Great Salt Lake.

### Great Salt Lake Variant

The Great Salt Lake Fremont occupied the Great Salt Lake Basin and surrounding area, including much of present-day northwest Utah with possible extensions into southern Idaho and the Snake River Plain (Marwitt 1986:169). The Great Salt Lake Fremont region extends south to the boundary between the Great Salt Lake Basin and the Utah Lake Basin (Madsen 1989:22). The Great Salt Lake Variant is characterized by the occurrence of Great Salt Lake Gray ceramics, clay figurines, and Rose Spring, Eastgate, and Bear River Side-notched projectile points (Madsen and Simms 1998:300-303). Great Salt Lake Fremont sites are generally small with little substantial architecture, though some do exhibit circular pithouses. Subsistence practices exhibit a greater emphasis on hunting and gathering, as well as a greater use of wetland flora and fauna and lower reliance on maize than other Fremont groups (Dalley 1976:71; Marwitt 1986:168). Caves and rockshelters in the region (Swallow Shelter, Thomas Shelter, and Kimber Shelter) and around the margins of the Great Salt Lake (Promontory Caves, Deadman Cave, and Lakeside Cave) exhibit evidence of short-term Fremont occupations exploiting local resources (Dalley 1976; Madsen 1989:57).

### **Late Prehistoric Period (700 to 150 B.P.)**

The Late Prehistoric Period is marked by the arrival of Numic-speaking populations in the eastern Great Basin and northern portions of the American Southwest, which has been placed at about 1,000 B.P. and somewhat later in northeastern Utah, southern Idaho, and western Wyoming (Butler 1981 and 1983; Frison 1978; Lamb 1958; Steward 1938; Wright 1978). Until recently, there was general consensus that Numic-speaking peoples arrived in their historic territories relatively recently and that historic distribution of these peoples was the result of widespread expansion of Numic-speaking populations from homelands in the southwestern Great Basin (Bettinger and Baumhoff 1982; Carlyle et al. 2000; Kaestle 2003; Kaestle and Smith 2001; Madsen and Rhode 1994:3). As such, there may have been a slight overlap between the Formative and Numic-speaking groups in the region, leading some researchers to offer the arrival of the Numic as a driving factor in the abandonment of the area by the former (see Eshelman et al. 2004:69). Currently, there is little consensus as to when a migration of Numic-speakers occurred as well as how and why it occurred, what the relationship of Numic-speaking

populations to pre-existing populations in the eastern Great Basin and Colorado Plateau was, how settlement patterns and subsistence strategies differed from pre-Numic populations, and whether or not a Numic expansion actually occurred. At this time new culture material, including small triangular and side-notched arrow points, become more common along with a distinctive pottery called “Intermountain Brownware” or “Shoshonean Ware” (Janetski 1986:158; Jennings 1986).

Ethnographically, subsistence activities of Shoshonean groups (bands) involved seasonal movements to specific geographic localities as particular food resources became available throughout the year. The size and structure of a band fluctuated with changes in the types and availability of resources but generally included small, family-sized bands through the spring and summer and large, multi-family groups during the fall and winter months (Steward 1938).

## **History**

The history of northwest Utah can be divided into five major time periods associated with significant events and activities. The first period presented in this discussion is the Protohistoric Period, ranging from approximately 1776 to 1847 and characterized by the earliest exploration of the area by Euroamericans, Spaniards, and the newly arrived Mormon pioneers. The second time period represents the Settlement Period, ranging from 1847 to 1869. The third time period, the Industrial Era, encompasses the time between 1869 and 1928 and includes the development of a vast railroad network and the mining/industrial boom associated with World War I. The fourth period is the Depression Era, ranging between 1929 and 1940 and is characterized by the bust of the local mining and agricultural industries as a result of the stock market crash. The fifth period, World War II and the Post-War Era, ranges from 1941 to the present and includes the economic recovery following the war overseas, the rise of defense-related industries in Utah, and the increase in urbanization.

### **Protohistoric (A.D. [Anno Domini] 1776 to 1849)**

The earliest known exploration of the Great Basin by non-indigenous peoples was the Dominguez-Escalante expedition of 1776 to 1777 in search of a route from Santa Fe, New Mexico, to the California coast (Black and Metcalf 1986:18; Warner 1995: xii). While this expedition only made it as far north as the Traverse Mountains (Point of the Mountain) and did not venture north into the Salt Lake Valley or beyond, their accounts of the Ute peoples around Utah Lake are the only firsthand accounts prior to the 1800s of any aboriginal group in the region (Janetski 1991).

In the years following the Dominguez and Escalante expedition, the area was traveled by trappers and government-sponsored explorers, many who worked as informants on the native peoples' activities. Osborne Russell, Jim Bridger, Louis Vasquez, Etienne Provost, Kit Carson, John C. Fremont, Howard Stansbury, Jedediah Smith, James Beckwourth, Peter Skene Ogden, and Joseph R. Walker all traveled throughout the region from the 1820s through the 1840s (Blanthorn 1998:45-61; Morgan 1995). Although highly biased and skewed, the accounts from the Spaniards, explorers, and trappers are the only accounts of the aboriginal inhabitants and the geographic features of the region before the arrival of the Mormon settlers in 1847.

## **Settlement Period (A.D. 1847 to 1869)**

In 1847, the main group of Mormon pioneers arrived in the Salt Lake Valley. Shortly after, their religious leader, Brigham Young, sent a number of families to explore and settle portions of the territory. The communities of Grantsville and Tooele were settled in 1849 as agricultural and ranching communities, focusing on growing a wide variety of fruit and sugar beets and on raising cattle and sheep (Blanthorn 1998).

## **Industrial Era (A.D. 1869 to 1928)**

The beginnings of the industrial era in northwest Utah can be traced to the discovery of precious metals and minerals in the mountains of the region. Minerals were discovered in the Oquirrh Mountains in the 1860s. Mining districts were established at Camp Floyd, sometimes referred to as Mercur, and Ophir. Both districts, located on the western slopes of the Oquirrh Mountains, produced significant amounts of gold, silver, and lead (May 1978:222). The Camp Floyd district was organized in 1870 (Cundiff 2002a:1). During the 1870s approximately \$56,000 worth of silver was extracted, but by the end of the decade the silver deposits were played out. Gold was found in the district in 1883, which brought an economic resurgence to the area, but by 1913 the ores were exhausted forcing the mines and mills to close (Cundiff 2002a:1). The Ophir Mining District was originally part of Utah's first mining district, the West Mountain District, which was organized in 1863 (Cundiff 2002b:1). The West Mountain District was divided in 1864 and again in 1870, when the Ophir District was created (Cundiff 2002b:1). The Ophir District produced primarily silver, but lead, zinc, and gold were also extracted. The district's boom period was in the 1870s, during which time millions of dollars' worth of ore was extracted. By the end of the century the major mines of the Ophir District had closed (Cundiff 2002c:1).

Although the events discussed above had some impact on the area surrounding the APE, it was not that great. Of more relevance to the area immediately surrounding the APE was the completion of the Transcontinental Railroad in 1869. The joining of the Union Pacific Railroad with the Central Pacific Railroad at Promontory Summit was a monumental undertaking that constitutes one of the most significant accomplishments in American history (Huchel 1999:105). When the railroad was originally built, the route had been constructed north of Great Salt Lake, owing to a high lake cycle and technology at the time did not allow for bridging the lake. The Lucin Cut-Off was completed in 1904 to replace the Old Promontory line, reducing travel time and cost by actually spanning the lake and avoiding difficult stretches of the route across Promontory Summit and a spur of the Hogback Mountains (Huchel 1999:192-197; Blanthorn 1998:106-110). "Railroads changed the economy of Utah. The ability to ship goods both in the state and to and from other states was greatly improved. Railroads created a commercial zone by their demand for services and by providing a shipment area" (Haymond 1994:565). Although not in the Project APE, the Union Pacific Railroad brought economic stimulus to the area. This stimulus resulted in the development (and later abandonment) of several small towns, including Richville.

The period from 1910 to 1920 was a prosperous one for residents of Utah. The increased use of industrial ores during World War I created an economic mini-boom in mining towns. While miners and mining companies were the obvious beneficiaries of this war-time demand, area

ranchers also enjoyed economic prosperity by selling larger quantities of beef to feed the hungry mine workers. Many Utah towns reached the height of their social and economic growth during this boom period.

### **Depression Era (A.D. 1929 to 1940)**

The crash of the stock market in late 1929 heralded the onset of the Great Depression. Like much of the West, with its economy firmly established on resource exploitation, extractive industries, and agriculture, Utah was struck a severe financial blow by the Great Depression (McCormick 1994:136). Many of Utah's mining companies neared collapse as production levels and profitability each fell when the national and international markets dried up (Notarianni 1994). The agricultural industry was also hit hard by the Great Depression. As income decreased, farmers and ranchers could not afford to purchase seed and equipment and maintain livestock. Beef and wool prices reached unprecedented lows. The Taylor Grazing Act, which passed in 1934, was intended to stabilize the economically volatile livestock industry and to stop the misuse of public lands through regulatory control of those lands by the Grazing Service. However, many ranchers could not afford the permit fees to graze their livestock on public lands, which forced many to sell off their herds (Hull and Avery 1980:56).

As the nation continued to languish, the U.S. government established programs of institutional relief. As part of President Franklin Roosevelt's New Deal, various forms of federal aid poured into struggling communities. In general, western states received more financial support than eastern states, with Utah ranking ninth overall in federal aid per capita (Holzapfel 1999:215). In addition to social welfare programs, including both federally run programs as well as those operated by the Mormon Church for the benefit of its members, a wide variety of work relief programs benefitted local residents.

### **World War II and the Post-war Era (A.D. 1941 to Present)**

World War II brought new economic vigor to Utah. The mining industry rebounded as demand levels soared. A strong military-industrial complex developed in the state during the World War II era. The Tooele Army Depot, the Deseret Chemical Depot, and Dugway Proving Grounds (all located in the Tooele Valley, south of the Project area) were established during World War II. Functions at these installations ranged from biological and chemical warfare testing and bomber training, to more mundane activities such as supply storage and equipment repair (Utah State Historical Society 1988:26). By the end of the war, these facilities employed thousands of civilians and military personnel (Utah State Historical Society 1988:26).

Since the 1980s, areas along the Wasatch Front and Oquirrh Mountains have grown at an incredible pace. The economic bases broadened in most sectors, including significant increases in manufacturing, government sectors, retail, tourism, and housing-related industries. The central Utah region has continued to be predominantly agriculturally based, yet small-scale development has increased. The populations of Davis, Utah, Tooele, and Salt Lake counties have grown steadily. The 2010 census data reported approximately 1.9 million of the state's 2.8 million residents live in those four counties (U.S. Census 2010).

## PREVIOUS PROJECTS AND RECORDED CULTURAL RESOURCES

A literature and record search for previously recorded cultural resources sites and previous cultural resources projects located within 1 mile of the Project area was conducted on February 7, 2014 by EPG archaeologist Naia George at the Utah State Historic Preservation Office (SHPO), Utah Division of State History, in Salt Lake City. This search identified 11 cultural resources projects (Table 1) and 1 cultural resources site (42TO3285) within 1 mile of the APE. This site, the historic "Oakley, Idaho Road to Low Pass from Burnt Spring", runs primarily on a north-south trajectory along the west side of the APE, but does not enter the Project area.

The NRHP was also reviewed for listed sites in the vicinity of the Project area. No NRHP listed sites were identified within 1 mile of the Project.

TABLE 1 PREVIOUS CULTURAL RESOURCES PROJECTS WITHIN 1- MILE OF THE PROJECT			
Project No.	Report Title	Author	Organization
U-76-BL-0024b	Cultural Resource Examination for Clearance in Reference to Right-of-Way for Existing Utah Power & Light Co. Power Line (report missing at the SHPO)	Duane Whimpey (1976) (report missing at the SHPO)	BLM (report missing at the SHPO)
U-80-BL-0073b	Summary Report of Inspection for Cultural Resources for the Poverty Point Tram Road R/W	Charles Cartwright (1980)	BLM
U-83-BL-0072b	Summary Report of Inspection for Cultural Resources for the AMAX Water Control Project	Robert Neily (1983)	BLM
U-84-BL-0571b	A Cultural Resource Survey for the AMAX Water Channel and Canal R/W	Robert Neily (1984)	BLM
U-84-BL-0585b	Summary Report of Inspection for Cultural Resources for the Black Knoll Rip-Rap Sale	Douglas S. Dodge (1984)	BLM
U-87-BL-0231b	Summary Report of Inspection for Cultural Resources for the Solaire Salt #3 Gravel Sale Project	Douglas S. Dodge (1987)	BLM
U-94-BL-0141b	Summary Report of Cultural Resources Inspection for the Dead Cow Point Material Pit #U72270 Project	Melvin G. Brewster (1994)	BLM
U-96-BL-0183b	Summary Report of Cultural Resources Inspection for the Dump Closures Project	Doug Melton (1996)	BLM
U-04-UM-1328s	A 564 Acre Cultural Resources Inventory of the Wasatch Regional Landfill, Phase I, Tooele County, UT	Lisa E. Beck and R. Kelly Beck (2005)	SITLA
U-06-HO-1128b	A Cultural Resource Clearance for the Delle Emergency Stabilization and Rehab (ESR) Area, Tooele County, Utah	Jon Baxter (2006)	Bighorn Archaeological Consultants, LLC



TABLE 1 PREVIOUS CULTURAL RESOURCES PROJECTS WITHIN 1- MILE OF THE PROJECT			
Project No.	Report Title	Author	Organization
U-07-HO-0974b,p,s	A Cultural Resource Inventory of the Wasatch Landfill Powerline Project, Tooele County, Utah	Kathleen Lowe and Jim Christiansen (2007)	Bighorn Archaeological Consultants, LLC

## GENERAL LAND OFFICE MAPS REVIEW AND FIELD INVESTIGATION

As part of the records search, a search of General Land Office (GLO) survey plats available at the Bureau of Land Management (BLM) Internet public access site ([www.ut.blm.gov/LandRecords/search\\_plats.cfm](http://www.ut.blm.gov/LandRecords/search_plats.cfm)) was conducted on February 17, 2014. All available GLO maps for the Project area were reviewed for the presence of historic features and transportation routes (GLO 1871; GLO1914). Two maps relevant to the Project area (GLO 1871 and GLO 1914) were reviewed to identify those historic resources (e.g., features, transportation routes, and telecommunications lines) located in the Project area with the potential of being encountered during survey. The review did not identify any historic resources located in the APE. A segment of the historic road "Oakley Idaho Road to Low Pass from Burnt Springs", depicted on the 1871 and 1914 GLO plat maps for Township 1 North, Range 8 West (GLO 1871; GLO1914), was identified and documented (42TO3285) in a previous project (Baxter 2007). This previously recorded segment is located 265 meters (858 feet) west of the APE but was not identified within the boundary of the present Project area.

## METHODS

### Survey Methods

A Class III intensive pedestrian inventory was conducted for the Project's APE, consisting of two contiguous block parcels totaling 650 acres (263 hectares). The blocks were inventoried using a crew of 4 to 5 persons walking parallel transects spaced no more than 15 meters (50 feet) apart. Ground surface visibility was at or near 100 percent over the entire Project area.

For the purposes of this inventory, the criteria set forth in the BLM Guidelines (BLM 2002:6) were used to define sites and isolates (IOs). A site was defined as 10 or more artifacts representing a single artifact class, or at least 15 artifacts representing two artifact classes, that date prior to 1964 within a 10-meter (30-foot) area. IOs were defined as a group of nine or fewer artifacts located within a 10-meter (30-foot) area.

All archaeological sites more than 50 years old encountered during the inventory were documented on Intermountain Antiquities Computer Site Forms (IMACS 1992). Pursuant to Utah SHPO guidelines, all sites were photographed using color digital photography. Photographs were taken of representative and diagnostic artifacts, cultural features, and site overviews. Cultural resources site boundaries, artifact concentrations, test unit locations, and notable natural topographic features were mapped. Permanent site datums, consisting of a 12-inch long, 1/2-inch diameter piece of rebar with a stamped aluminum cap denoting the site number, were placed at each of the sites and were incorporated into the site maps.

Recordation of IOs included the collection of Universal Transverse Mercator (UTM) coordinates, a brief description of any defining attributes or characteristics, and a description of any distinguishing trademarks. IOs also were photographed to aid in further analysis.

All site and isolate locations were documented in the field with a differentially correctable Trimble GeoXT, GeoExplorer 2008 Series Global Positioning System (GPS) unit using North American Datum, 1983 (NAD83) coordinates. After differential correction and plotting, the data is presented in units based on NAD83. GPS data were post-processed using GPS Pathfinder Office version 5.30 software. Maps were created by projecting sites onto geo-referenced 7.5 minute USGS quadrangle maps using ESRI ArcGIS 10 software.

### **National Register of Historic Places Evaluation Criteria**

Cultural resources include archaeological, historical, or architectural sites, districts, buildings, structures, places, and objects. The significance of a cultural resource depends on whether or not it contains data, or the potential for data, of importance to either current archaeological method and theory or regional prehistory or history. Sites are evaluated by applying the criteria outlined in 36 CFR 60.4, which states:

The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

- (A) are associated with events that have made a significant contribution to the broad patterns of our history; or
- (B) are associated with the lives of persons significant in our past; or
- (C) embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- (D) have yielded, or may be likely to yield, information important in prehistory or history.

Recommendations regarding site eligibility for the NRHP were made based on retention of historic integrity and the four criteria outlined above. Based on experience and professional judgment, sites found not to retain integrity and/or meet these criteria were recommended not eligible for the NRHP. Those sites found to retain integrity and meet one or more of the four criteria, as set forth in 36 CFR 60.4, were recommended eligible for the NRHP. Individual site NRHP recommendations, based on the four criteria, are provided in the site discussions.

## **Testing Methods**

As the nature of potential subsurface deposits (artifacts, stained sediments, concentrations of charcoal, FCR, use surfaces, or other cultural features) is the least known parameter of the investigation of archaeological sites, a testing plan was designed and implemented to provide critical information about the subsurface nature of three archaeological sites (42TO5955, 42TO5956, and 42TO5957). Per discussion with the SITLA archaeologist, 1-by-1 meter test units were employed to assess the presence and integrity of subsurface deposits, as well as to obtain a preliminary idea of the nature of the sediments and the relative complexity of the stratigraphy, and to see if there was continuity in the deposition of sediments across each site.

Since the stratigraphic sequences of deposition of both sites was unknown prior to excavation, and to maintain vertical control and to adequately describe, define and identify the associations of artifacts, features, sequences of strata, and intrusive (or non-cultural) elements, excavation was conducted in arbitrary 10-centimeter increments. On completion of each 10-centimeter level, and prior to the excavation of a new level, photographs were taken of all unit surfaces. On completion of each unit, the exposed sediment profiles of the abutting walls were photographed and documented in the Feature 1 (F1) notes, which are on file at EPG's office in Salt Lake City.

Formal 1-by-1-meter test units were excavated with controlled methods to obtain detailed information about stratigraphy and artifact densities at all three sites. All test units were referenced to a specific corner of the unit (e.g., the southeast corner), and consistency was maintained throughout the testing at all sites. All test units were oriented along a north-south trending axis and laid out using compass lines for angle and tape measures for distance. Geographic coordinates were obtained from the southeast corner of each of the units with a differentially correctable Trimble GeoXT GeoExplorer 2008 Series handheld GPS unit, using NAD83. All unit locations are identified on the site maps (Figures 8, 10, and 12), illustrating the precise relationship of each unit to features identified, and to various elements of the APE.

All sediments were removed by hand using the most appropriate tool (shovel or trowel) in a manner that best recovered relevant data. All units were excavated in arbitrary 10-centimeter levels, as natural/cultural levels were not identified. Vertical control was maintained by use of rebar sub-datums (or vertical datums) established at modern ground surface at the highest corner of the excavation unit with depth measured in centimeters below datum.

All sediments were screened through ¼-inch mesh hardware cloth to ensure that smaller artifacts such as fragmented faunal materials and micro-debitage would not escape our efforts. All retrieved artifacts were inventoried and described according to horizontal and vertical location and were analyzed in the field, bagged, labeled, and re-interred during the back-filling process.

As testing is the exploratory act of searching for the presence (or absence) of buried cultural materials and features, sediments were excavated to a depth greater than the occurrence to ensure that any associated occupational surface would be sampled and the stratigraphic context of the occurrence (artifact concentration, activity area, use surface, or other feature) would be clearly defined. Sediments were excavated to a culturally sterile level.

Data recorded for each excavation unit included a description of any cultural remains recovered/observed in each level, stratigraphic profile descriptions and digital photography. An excavation unit form was completed for each unit that includes information on the deposits and changes in stratigraphy, as well as a tabulation of all artifacts encountered. A detailed feature form including all pertinent data and digital photographs were completed for each excavated unit.

A portion of each unit was chosen to be photographed, based on the relative clarity of individual sediments. Because of the varied integrity of the sediments of the excavation units, no standard procedure was used for photographing the same wall or aspect in each test unit. All excavated units were lined with plastic sheeting and re-filled on completion of excavation.

All artifacts (lithics, faunal material, etc.) identified *in situ* or recovered in the screens were separated by material type, logged, and described by unit and level, with more specific provenience data included when present.

As soon as excavations were completed, the SITLA archaeologist was notified by email. This message assessed that Project objectives were achieved with the level of work conducted, and recommended that archaeological work be terminated except for potential archaeological monitoring at the sites if development occurs.

### **Analytical Methods**

All artifacts encountered during these investigations were analyzed and recorded according to standard field techniques, and left *in situ*. Artifacts encountered during testing were analyzed in the field and re-interred in the units from which they were recovered, per discussion with SITLA. Formal artifacts were plotted on sketch maps, counted, measured, and described. Flaked stone tools encountered during the present investigations were also photographed to obtain a visual record of representative types observed in the area. Broad categories such as biface, ground stone, debitage, etc. were used to initially separate the artifacts into general groups based on material type, morphological attributes, and implied function. Each of those categories was then further subdivided into smaller categories as needed.

### **Lithic Analysis**

All artifacts derived from stone sources were categorized as lithic artifacts. This class was further subdivided to include flaked stone tools, cores, lithic debitage, and ground stone. Flaked stone items comprised the largest portion of the artifact assemblages observed during testing, consisting of 331 specimens. Flaked stone tools can be defined as stones from which flakes have been removed as a result of human intent or use (Whittaker 1994; Crabtree 1972; Odell 2003). This category includes both formal and expedient tools such as unifaces, bifaces, projectile points and drills, and it is distinguished from ground stone artifacts. All flaked stone tools were examined macroscopically for signs of edge wear (either use wear or edge grinding) and were sorted by tool type. Toolstone material consisted of locally available chert, quartzite, siltstone, and obsidian of a multitude of qualities and colors.

## Bifaces

Bifaces are tools that have been shaped by the intentional removal of flakes from opposing sides by percussion (Whittaker 1994; Crabtree 1972; Odell 2003). They lack hafting elements (notches or stems) that would identify them as projectile points, and have, therefore, been placed in their own category. The classification system used in the analysis of the assemblages detailed here combines the biface manufacturing stages defined by Wenker (2000) and Whittaker (1994). The stages of biface manufacture are:

- **Stage 1 Bifaces.** Bifaces fitting into this category exhibit only minimal modification and may be indistinguishable from bifacial cores. These bifaces represent the initial stages of raw material procurement and/or testing.
- **Stage 2 Bifaces.** This category also includes those items in the initial stages of thinning, with controlled flaking, around part or all of the tools edge. The flaking is irregular and flake scars usually do not cross the midline of the tool.
- **Stage 3 Bifaces.** These items represent the stages of thinning the item's cross-section without diminishing the outline shape of the tool.
- **Stage 4 Bifaces.** These items are still being thinned, but initial shaping is coming into play, and the item's final shape is started.
- **Stage 5 Bifaces.** These bifaces are completely thinned, and final shaping is being performed, or is complete. Pressure flaking may also be applied. These can be classified as highly symmetrical, exhibiting well-controlled flaking with straight and regular edges.

One biface was observed during these investigations: IO2, T1.

## Lithic Debitage

An inventory of the morphological characteristics of all lithicdebitage was performed on all excavated material. A total of 331 pieces of lithicdebitage comprised primarily of locally available materials were observed and tallied during the testing. The analysis of lithicdebitage focused on the basic features of the flakes themselves. The first step in the analysis process was to determine a flaking stage: primary, secondary, or tertiary. This was determined by the amount of cortex present on the dorsal surface of the artifact. A primary flake retains roughly 95 percent cortex on the dorsal surface, a secondary flake 1 to 94 percent cortex on the dorsal surface, and a tertiary flake has no cortex at all.

The second step in the analysis was to make a determination of the stage of reduction (early, middle, or late) represented by each individual flake in the assemblage. This determination was based on multiple variables, which included but were not limited to platform preparation characteristics, flake size and shape, and the total number and direction of dorsal scars. The criteria used, as well as the method for identifying the stage of reduction follows Wenker (2000), which is a simplified version of Flenniken (2002). For the purposes of this analysis, flakes are defined as follows:



- **Early-Stage** flakes are those that can be classified as having been produced during the initial stages of core reduction by hard-hammer percussion techniques. These flakes typically include broad, simple platforms with little or no platform preparation, a thick transverse cross-section, a low frequency of dorsal flake scars, and quite often have cortex remaining on the dorsal surface.
- **Middle-Stage** flakes can be characterized as having a prepared platform, often multi-faceted, which represents a small segment of a prepared and often dulled (by grinding) bifacial tool edge. Also known as biface-thinning or biface-reduction flakes, these flakes may also exhibit a combination of a thin, transverse cross-section; an expanding, “teardrop” shape with feathered terminations; multiple flake scars originating from varied directions; a lipped platform; and little or no cortex on the dorsal surface.
- **Late-Stage** flakes (i.e., pressure flakes) are usually very small, narrow and elongated flakes with multiple dorsal flake scars. They exhibit platforms prepared by grinding, are multi-faceted, and contain no cortex on the dorsal surface.
- Fragments are those pieces that are either incomplete or do not exhibit the characteristics needed to identify which stage of reduction produced them.

All specimens were examined to determine if there was any edge wear, micro-flaking, or platform preparation visible.

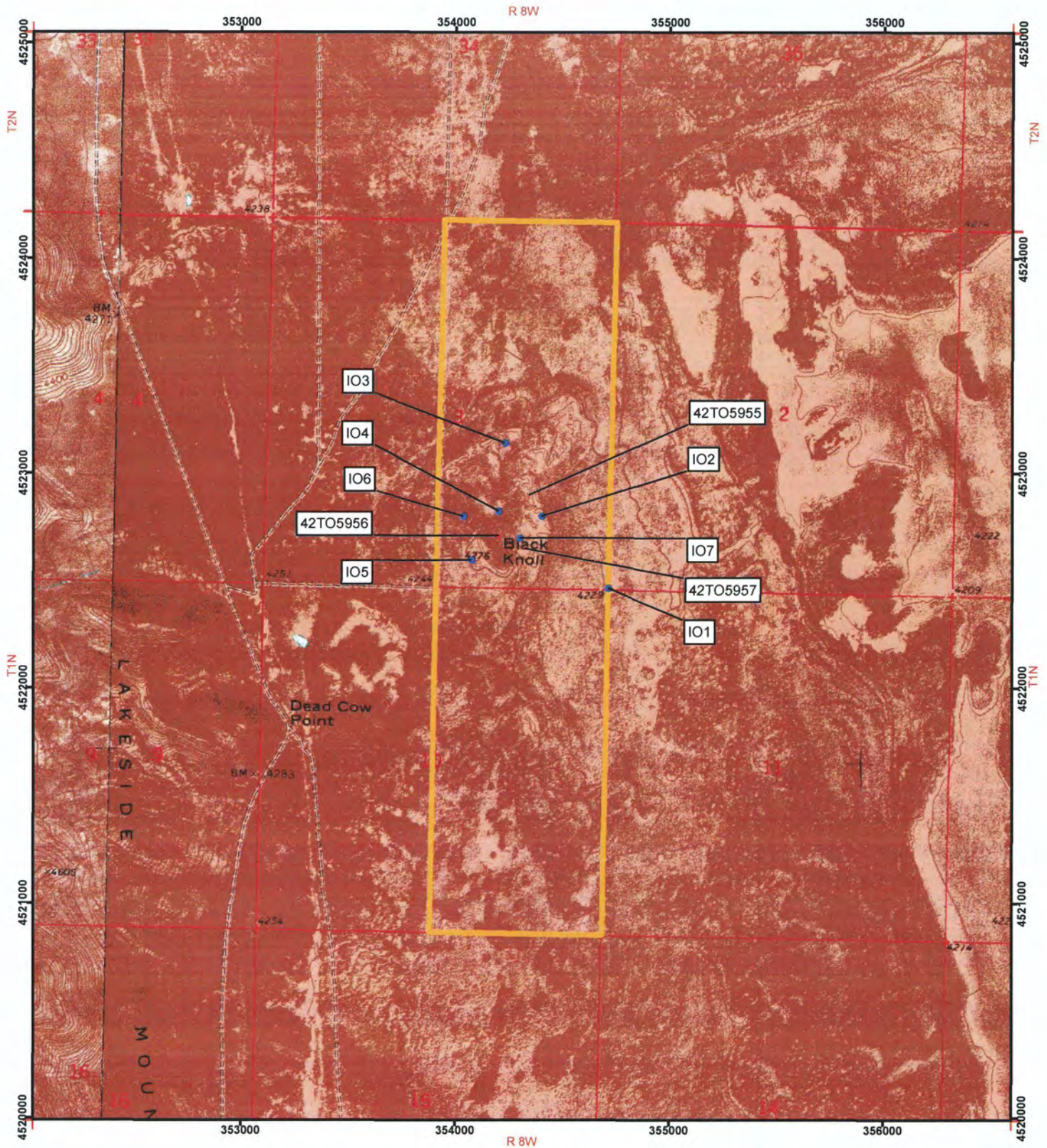
## INVENTORY RESULTS AND RECOMMENDATIONS

Class III cultural resources inventories were completed for the Project by EPG archaeologists on March 5 and 10, 2014, with evaluative testing performed at three sites on March 12, 2014. The purpose of the cultural resources inventory was to locate, record, and assess the significance of all cultural resources located in the Project area. During the pedestrian surveys completed for the Project, three cultural resources sites and seven IOs were encountered and documented. Based on the geographic setting of the sites, evaluative testing was conducted to determine the extent of cultural materials and to analyze the potential for additional, intact cultural deposits. The locations of sites and IOs encountered during this Project are presented in Figure 3.

### Isolated Occurrences

A total of seven IOs were documented and mapped *in situ* during the pedestrian survey (Table 2 and Figure 3). These artifacts did not meet the standards for a site as defined in the *Guidelines for Identifying Cultural Resources* (BLM 2002:6). Recordation consisted of a description of the artifact(s), including tool/object type and measurements, and taking photographs. Object locations were mapped based on UTM data gathered utilizing a differentially correctable Trimble GeoXT, GeoExplorer GPS unit. Diagnostic items (IO1, IO3, IO4, and IO7) are presented in Figures 4, 5, 6, and 7 and are discussed in more detail below.

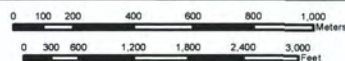




## Legend

### Project Reference

- Isolate
- Cultural Site
- Location of Areas Surveyed



USGS Quadrangle: Poverty Point

1:24,000  
UTM 12 North  
North American 1983



LOCATION OF RECORDED SITES AND ISOLATES

SITLA I-80 BLOCK DEVELOPMENT PROJECT

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TABLE 2 ISOLATED OCCURRENCES			
Isolate Number	Description	UTM Easting	UTM Northing
IO1	1912 U.S. General Land Office Survey marker for T1N R8W	354712	4522465
IO2	Yellow/clear/white semi-translucent chert Stage 2 biface fragment measuring 3.8 by 2.8 by 1.2 centimeters (cm) (T1); 1 gray quartzite mano fragment/Fire-cracked rock (FCR) measuring 3.6 by 2.5 by 1.8 centimeters (T2)	354402	4522802
IO3	Great Salt Lake Grayware sherd measuring 4.8 by 3.5 by 0.5 centimeters	354229	4523142
IO4	Elko Corner-notched projectile point fragment measuring 3.0 by 2.7 by 0.3 centimeters	354199	4522825
IO5	Prehistoric lithic debitage, 1 basalt fragment	354074	4522598
IO6	Prehistoric lithic debitage, 1 Tertiary Early siltstone flake	354035	4522801
IO7	Square-stemmed projectile point measuring 3.8 by 2.5 by 0.4 centimeters	354299	4522700

## IO1

IO1 is a U.S. General Land Office Survey marker for T1N R8W. It is marking the corner of Sections 3, 10, 2, and 11 (Figure 4). It is a stamped metal cap that is 2½ inches in diameter, and is affixed to a rusted iron pipe. The cap is dated 1912. The pipe is almost completely eroded, measuring 9¼ inches long and 1½ inches in diameter. It was found lying on the ground surface, in the general vicinity of the Section corner.



**Figure 4** Close up of IO1, a 1912 U.S. GLO marker



### IO3

IO3 is a grayware body sherd (Figure 5) measuring 4.8 by 3.5 by 0.5 centimeters. It has a light gray to brown exterior that is polished and exhibits smoothing striations. The core has a light gray to buff color, with what appear to be basalt and quartz grain temper. The interior wall is grayish brown and considerably darker than the core and exterior wall, and is smooth. Small basalt and quartz inclusions are visible in the interior wall. Inclusions constitute approximately 30 percent of the core.

This artifact most closely resembles a variety of Great Salt Lake Grayware. Great Salt Lake Grayware is associated with the Bear River and Levee phases of the Great Salt Lake Fremont, which dates between 1,600 and 650 B.P. (Madsen 1977:19-22); suggesting Formative era use of the area.



**Figure 5** Close up of the exterior surface of IO3, a Great Salt Lake Grayware sherd

### IO4

IO4 is a corner-notched projectile point fragment (Figure 6) measuring 3.0 by 2.7 by 0.3 centimeters. It exhibits regular flaking on both surfaces, and is lenticular in cross-section. The tip and base are missing, but corner notches are clearly discernible.

IO4 most closely resembles an Elko Corner-notched projectile point. While a poor temporal marker in the eastern Great Basin, the presence of an Elko Corner-notched projectile point



suggests possible use of the area during the Middle Archaic to Late Archaic Period, between roughly 3,450 and 1,250 B.P (Holmer 1986:102; Justice 2002:304).



**Figure 6** Close up of IO4, an Elko Corner-notched projectile point fragment

## **IO7**

IO7 is an obsidian projectile point (Figure 7) measuring 3.8 by 2.5 by 0.4 centimeters. It exhibits oblique and lateral flaking on both surfaces, and is lenticular in cross-section. It has a squared stem measuring 1.1 centimeters wide, and 0.6 centimeters from the base to the squared shoulders. There is some edge grinding along the stem margins. The tip is missing with a hinge scar present along the break.

IO7 most closely resembles the Pinto Square-stemmed variety. The presence of a Pinto Series projectile point suggests use of the area sometime during the Early-to-Middle Archaic, between ca. 8,300 and 3,000 B.P. (Holmer 1978:66).



Figure 7 Close up of IO7, a Pinto Square-stemmed projectile point

### Cultural Resources Sites

Three cultural resources sites were encountered during the present inventory (Table 3 and Figure 3), consisting of three prehistoric lithic scatters. All encountered sites were evaluated for NRHP eligibility. One site (42TO5956) is recommended not eligible for the NRHP, and two sites (42TO5955 and 42TO5957) are recommended eligible for the NRHP. Both eligible sites will be avoided during development activities. As such, the present Project will have no adverse effect on the sites and no further action will be needed. Site documentation, including IMACS site forms, photographs, site location maps, site sketch maps, and encoding forms are provided in Appendix A.

TABLE 3 CULTURAL RESOURCES SITES IDENTIFIED				
Smithsonian Number	Site Type	NRHP Recommendation	Recordation Type	Project Location
42TO5955	Prehistoric lithic scatter	Eligible	New	Section 3, Black Knoll
42 TO5956	Prehistoric lithic scatter	Not eligible	New	Section 3, Black Knoll
42 TO5957	Prehistoric lithic scatter	Eligible	New	Section 3, Black Knoll

## 42TO5955

Site Type:	Prehistoric lithic scatter
Cultural/Temporal Affiliation:	Unknown Aboriginal
Site Dimensions:	32 by 21 m (672 m <sup>2</sup> )
NRHP Recommendation:	Eligible

### Site Description

Site 42TO5955 consists of a sparse, low-density lithic scatter located in a semi-stabilized dune field south of Rowley and west of the Lakeside Mountains. The site covers an area measuring 32 meters (N-S) by 21 meters (E-W). Surface artifacts consist of 51 pieces of lithic debitage, dominated by tertiary middle and late-stage flakes. Lithic reduction sequences include 2 tertiary early flakes, 15 tertiary middle flakes, 23 tertiary late flakes, and 11 tertiary fragments. Raw materials are of fair quality and include black crypto-crystalline silicates (CCS) and brown quartzite. Artifacts are mostly concentrated in a blowout in the middle of the site, with a maximum artifact density of 5 per square meter. No tools, diagnostic artifacts, staining, FCR, or features were observed.

A single 1-by-1-meter test unit was placed in an artifact concentration in a deflated area of the site (Figure 8) to test for the presence of subsurface deposits. No staining or FCR was evident on the surface. The unit was laid out on a north-south axis with UTMs obtained from the southeast corner (354341 m E 4522895 m N). Excavation was conducted in arbitrary 10 centimeter levels to sterile sediments (through 10 centimeters of artifact-free sediments). Excavations recovered 231 pieces of lithic debitage to a depth of 22 centimeters below the present ground surface. Sediments retain integrity and appear undisturbed. No insect casings or animal burrows (krotovina) were observed. A photograph of the south wall profile of the test unit is presented in Figure 9.

### *Surface*

Vegetation is sparse, consisting of a few pieces of bunch grass. Sediments consist of light gray (10YR 7/2) fine-grained aeolian silt with no pebbles or other inclusions. Sediments are loosely compacted.

### *Level 1: (0-10 centimeters below present ground surface)*

Sediments consist of light gray (10YR 7/2) silt with no inclusions. Sediments are loosely compacted and easily collapsible. Recovered artifacts include 223 flakes, which are dominated by early and middle reduction flakes (Table 4). Raw materials are dominated by brown and gray quartzite and siltstone.

<b>TABLE 4 ANALYSIS OF LITHIC DEBITAGE FROM ARTIFACTS RECOVERED DURING TESTING AT SITE 42TO5955</b>						
	<b>Early</b>	<b>Middle</b>	<b>Late</b>	<b>Fragment</b>	<b>Total</b>	<b>Percent</b>
Primary (greater than 95 percent cortex)	0	0	0	0	0	0
Secondary (1 to 94 percent cortex)	7	0	0	4	11	5
Tertiary (no cortex)	61	33	12	106	212	95
Total	68	33	12	110	223	
Percent	31	15	5	49		100

*Level 2: (10-20 centimeters below present ground surface)*

Sediments are brown (10YR 5/3) fine-grained aeolian sandy silt with no inclusions. Recovered debitage includes four tertiary fragments and three tertiary early (interior core reduction) flakes.

*Level 3: (20-30 centimeters below present ground surface)*

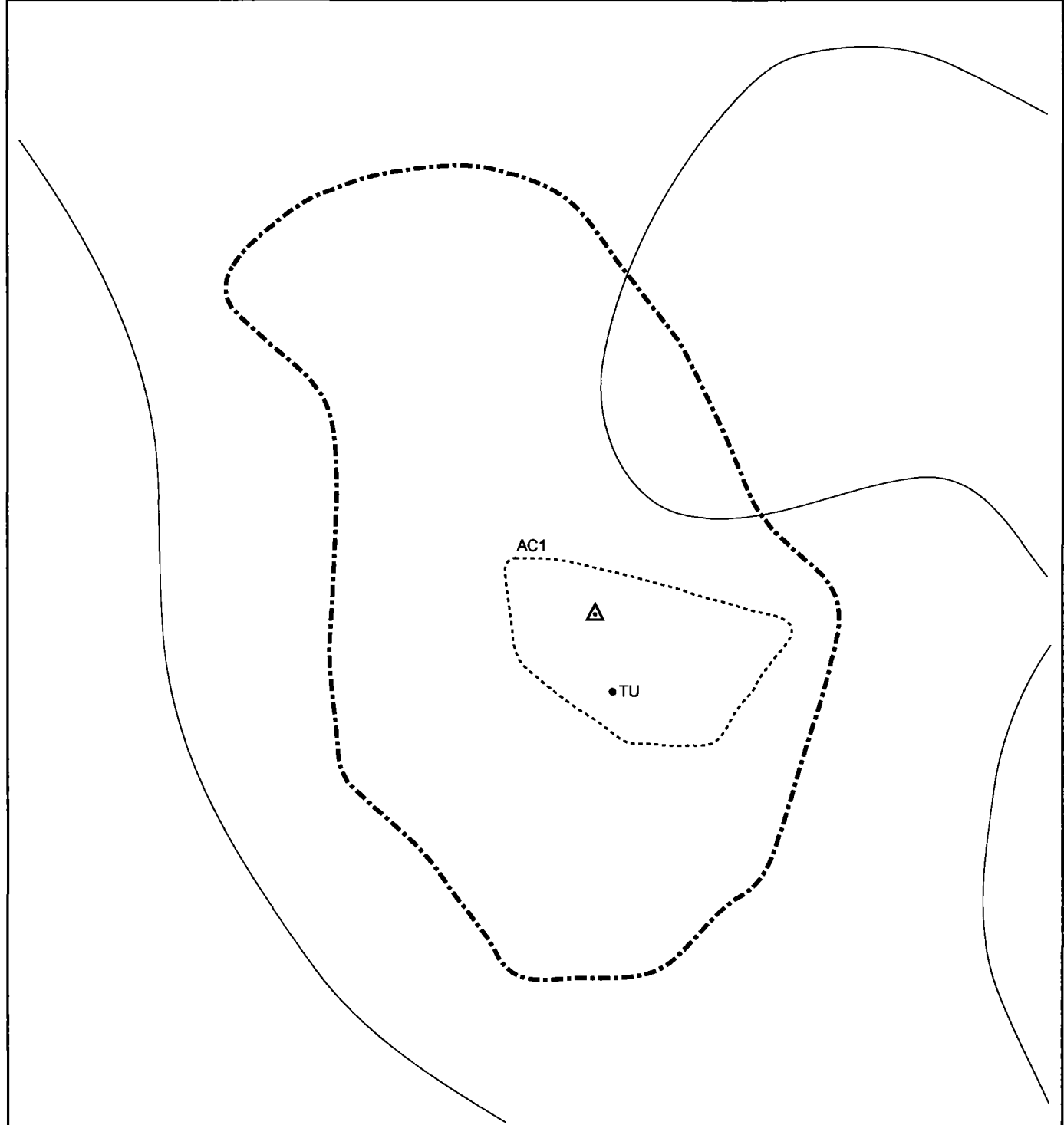
Sediments are brown (10YR 5/3) fine-grained aeolian sandy silt with no inclusions. One tertiary middle (biface thinning) quartzite flake was encountered in the upper 2 centimeters of the level.

*Level 4: (30-40 centimeters below present ground surface)*

Sediments are brown (10YR 5/3) fine-grained aeolian sandy silt with no inclusions. No artifacts were recovered from this level.

Site Interpretation

Site 42TO5955 likely represents a limited-use lithic reduction or tool maintenance area. The presence of all stages of lithic reduction suggests raw materials were brought onto the site and reduced in the manufacture and maintenance of stone tools. The relatively small number of artifacts and the lack of features (e.g., fire pit/hearth, sediment stains, FCR, and midden deposits) suggest the site was likely used by an individual or small group of people for a short period of time. Due to the lack of diagnostic artifacts, a temporal period or cultural affiliation cannot be attributed to this site.



**Site 42TO5955 plan map**

Report No. U-14-EO-0051s

**SITLA I-80 Block Development Project**

0 2.5 5 Meters

0 5 10 15 Feet



**Legend**

 Site Boundary

 Datum

 TU Test Unit

 AC Artifact Concentration

 Contour Line

Survey Date: March 16, 2014



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**Figure 9** Close up of the south wall profile of the Test Unit at 42TO5955 at 40 centimeters below present ground surface

#### National Register Recommendation

Site 42TO5955 contains the potential to provide information important to furthering the understanding of aboriginal occupations in northwest Utah. The materials observed at this site occur in a dunal formation, and the excavation of a test unit indicates cultural materials are present to at least 30 centimeters below the present ground surface. Sediments retain integrity and appear undisturbed. There are likely additional cultural materials present in the deeper sands of the dunes. The site may contain intact subsurface deposits, which could provide important information regarding regional prehistory. As such, this site is recommended eligible for the NRHP under Criterion D.

#### **42TO5956**

Site Type:	Prehistoric lithic scatter
Cultural/Temporal Affiliation:	Unknown Aboriginal
Site Dimensions:	40 by 32 m (1,280 m <sup>2</sup> )
NRHP Recommendation:	Not eligible

## Site Description

Site 42TO5956 consists of a sparse, low-density lithic scatter located in a semi-stabilized dune field south of Rowley and west of the Lakeside Mountains. The site covers an area measuring 40 meters (N-S) by 32 meters (E-W). Surface artifacts consist of 17 pieces of lithic debitage, dominated by middle-stage reduction flakes. Lithic reduction sequences include 1 tertiary early flake, 8 tertiary middle flakes, 2 tertiary late flakes, and 6 tertiary fragments. Raw materials are of fair quality and include gray and black siltstone, sandstone, and CCS. Maximum artifact density is 3 per square meter. No diagnostic artifacts, staining, FCR, or features were observed.

A single 1-by-1-meter test unit was placed 9 meters (roughly 30 feet) southeast of the site datum (Figure 10) to test for the presence of subsurface deposits. No artifact concentrations, sediment staining, or FCR were visible on the surface, so the unit was placed in an area where four pieces of lithic debitage occurred close together. The unit was laid out on a north-south axis with UTM coordinates obtained from the southeast corner (354203 m E 4522710 m N). Excavation was conducted in arbitrary 10 centimeter levels to sterile sediments (through 10-centimeters of artifact-free sediments). Sediments retain integrity and appear undisturbed. No insect casings or animal burrows (krotovina) were observed. Five pieces of lithic debitage were recovered to a depth of 10 centimeters below the present ground surface. A photograph of the north wall profile of the test unit is presented in Figure 11.

### *Surface*

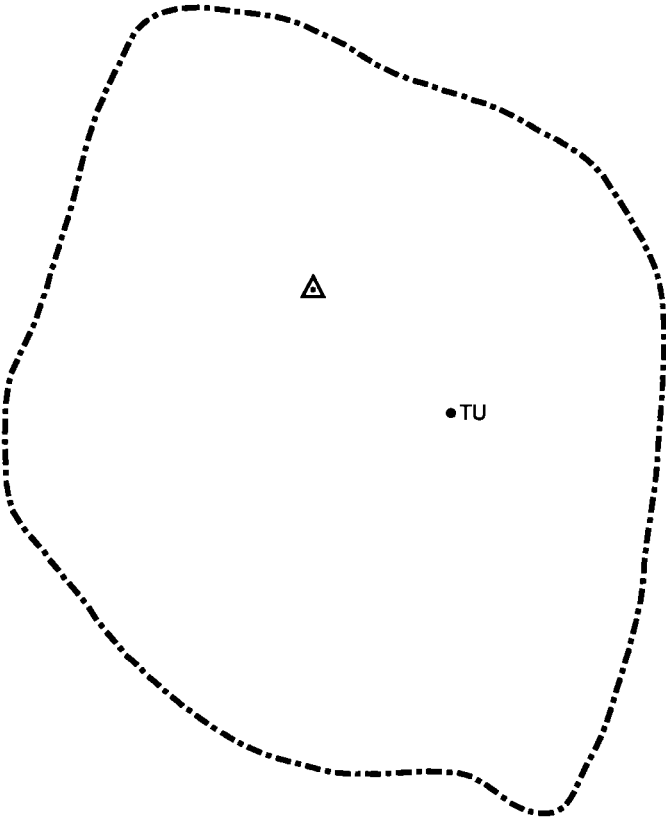
Sediments consist of gray/tan (10YR 7/2) fine-grained aeolian-silt with no pebbles or other inclusions. A small amount of cheat grass and vetch are present. Artifacts include four white chert and gray siltstone tertiary early (interior core reduction) flakes.

### *Level 1: (0-10 centimeters below present ground surface)*

Sediments consist of brown (10YR 5/3) sandy silt with no gravels or other inclusions. Some roots are present in the upper 3 centimeters. The single artifact is a white chert tertiary fragment (4 millimeters in size).

### *Level 2: (10-20 centimeters below present ground surface)*

Sediments consist of brown (10YR 5/3) sandy silt with no gravels or other inclusions. Level is sterile and contains no artifacts.



**Site 42TO5956 plan map**

Report No. U-14-EO-0051s

**SITLA I-80 Block Development Project**

0 5 10 Meters

0 15 30 Feet



**Legend**



Site Boundary



Datum

•TU Test Unit

Survey Date: March 16, 2014

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**Figure 11** Close up of the north wall profile of the Test Unit at 42TO5956 at 20 centimeters below present ground surface

### Site Interpretation

Site 42TO5956 likely represents a limited-use lithic reduction or tool maintenance area. The presence of all stages of lithic reduction suggests raw materials were brought onto the site and reduced in the manufacture and maintenance of stone tools. The relatively small number of artifacts and the lack of features (e.g., fire pit/hearth, sediment stains, FCR, and midden deposits) suggest the site was likely used by an individual or small group of people for a short period of time. Due to the lack of diagnostic artifacts, a temporal period or cultural affiliation cannot be attributed to this site.

### National Register Recommendation

Site 42TO5956 contains no significant artifact concentrations, diagnostics, or features, and has no demonstrated relation to other known sites in the area. Evaluative testing conducted at the site demonstrated that the site contains little or no potential for depth of cultural materials. Sediments retain integrity and appear undisturbed. Therefore, EPG recommends site 42TO5956 not eligible for the NRHP.

## 42TO5957

Site Type:	Prehistoric lithic scatter
Cultural/Temporal Affiliation:	Unknown Aboriginal
Site Dimensions:	17 by 32 m (544 m <sup>2</sup> )
NRHP Recommendation:	Eligible

### Site Description

Site 42TO5957 consists of a sparse, low-density lithic scatter consisting of 18 pieces of lithic debitage. It is located in a semi-stabilized dune field in the alkali flats south of Rowley and west of the Lakeside Mountains. The site covers an area measuring 17 meters (N-S) by 32 meters (E-W). Lithic reduction sequences include 1 tertiary early flake, 4 tertiary middle flakes, 8 tertiary late flakes, and 5 tertiary fragments. Raw materials include gray and brown siltstone, and lithic reduction stages are dominated by middle and late stage flakes. No tools, diagnostic artifacts, staining, FCR, or features were observed.

A single 1-by-1-meter test unit was excavated in a dune blowout, 1.6 meters (5½ feet) northwest of the site datum (Figure 12). No artifact concentrations, sediment staining, or FCR were visible on the surface, so the unit was placed in an area where three pieces of debitage occurred close together. The unit was laid out on a north-south axis with UTMs obtained from the southeast corner (354321 m E 4522656 m N). Excavation was conducted in arbitrary 10-centimeter levels to sterile sediments (through 10 centimeters of artifact-free sediments). Sediments retain integrity and appear undisturbed. No insect casings or animal burrows (krotovina) were observed. Ninety-five (95) pieces of lithic debitage were recovered to a depth of 60 centimeters below the present ground surface. A photograph of the north wall profile of the test unit is presented in Figure 13.

### *Surface*

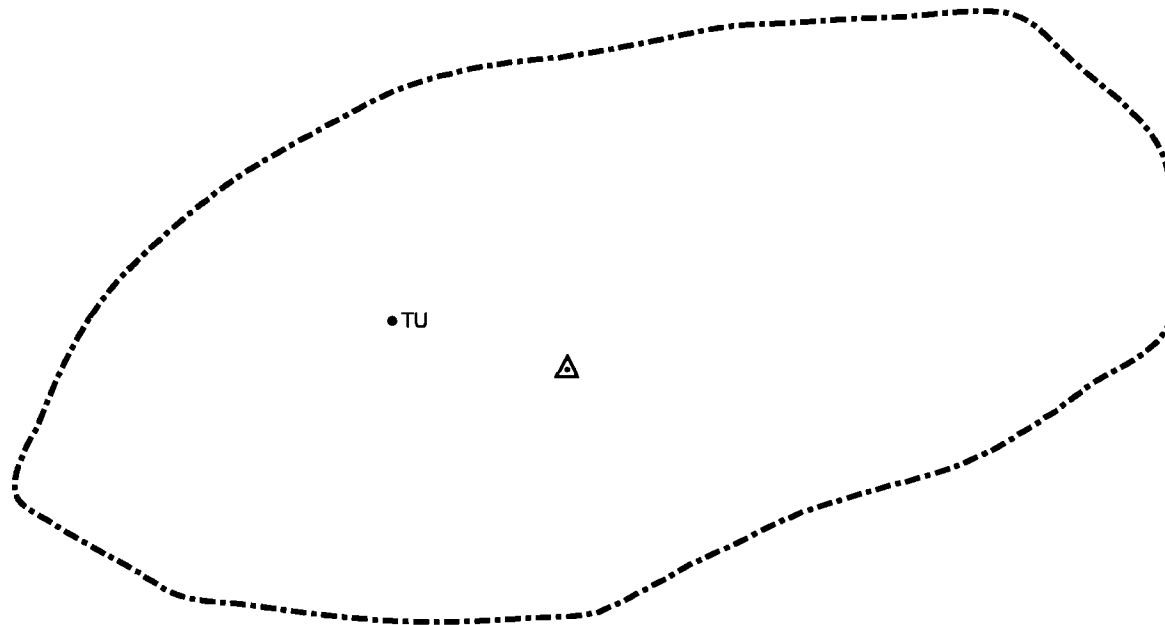
Sediments consist of light gray (10YR 7/2), fine-grained aeolian Bonneville silt with no inclusions. Artifacts consist of two fine-grained siltstone tertiary early (interior core reduction) flakes and one orange-white chert tertiary middle (biface thinning) flake.

### *Level 1: (0-10 centimeters below present ground surface)*

Sediments consist of light gray (10YR 7/2), fine-grained aeolian silt with no rocks or inclusions. Some roots from surface vegetation are present. Artifacts include 5 gray siltstone flakes (4 tertiary early flakes, and 1 tertiary fragment).

### *Level 2: (10-20 centimeters below present ground surface)*

Sediments consist of brown (10YR 5/3) Bonneville silt with no pebbles or other inclusions. Root structures of surface vegetation are still evident. Some sand content begins around 14 centimeters below present ground surface. Artifacts include 13 flakes, all of which are gray siltstone (5 to 43 millimeters): 9 tertiary early (interior core reduction) flakes, 1 tertiary middle (biface thinning) flake, and 3 tertiary fragments.



**Site 42TO5957 plan map**

Report No. U-14-EO-0051s

**SITLA I-80 Block Development Project**

0 2.5 5 Meters

0 5 10 15 Feet



**Legend**



Site Boundary



Datum

•TU Test Unit

— Contour Line

Survey Date: March 16, 2014

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*Level 3: (20-40 centimeters below present ground surface)*

This level was excavated an extra 10 centimeters due to an error in measuring. Sediments consist of brown (10YR 5/3) Bonneville silt with no pebbles or other inclusions. A total of 18 pieces of lithic debitage were recovered from this level, all of which are gray siltstone (but possibly rhyolite). These include 10 tertiary early (interior core reduction) flakes, 2 tertiary middle (biface thinning) flakes, and 5 tertiary fragments (between 5-27 mm in size).

*Level 4: (40-50 centimeters below present ground surface)*

Sediments consist of brown (10YR 5/3) Bonneville silt with no pebbles or other inclusions. A total of 37 flakes were recovered from this level, including 19 tertiary early (interior core reduction) flakes, 5 tertiary middle (biface thinning) flakes, and 13 tertiary fragments, all of which measure between 6 and 38 millimeters. Raw materials include gray siltstone; gray, black, and white quartzite; and rhyolite.

*Level 5: (50-60 centimeters below present ground surface)*

Sediments consist of brown (10YR 5/3) Bonneville silt with no pebbles or other inclusions. A total of 19 flakes were recovered from this level, including 8 tertiary early (interior core reduction) flakes, 3 tertiary middle (biface thinning) flakes, 1 tertiary late (pressure) flake, and 7 tertiary fragments. Flakes range in size from 4 to 38 millimeters. Raw materials include gray siltstone; gray, black, white, and mottled orange-white quartzite; and rhyolite.

*Level 6: (60-70 centimeters below present ground surface)*

Sediments consist of brown (10YR 5/3) Bonneville silt with no pebbles or other inclusions. No artifacts were encountered in this level. As such, excavation ceased.

Site Interpretation

Site 42TO5957 likely represents a limited-use lithic reduction or tool maintenance area. The presence of all stages of lithic reduction suggests raw materials were brought onto the site and reduced in the manufacture and maintenance of stone tools. The relatively small number of artifacts and the lack of features (e.g., fire pit/hearth, sediment stains, FCR, and midden deposits) suggest the site was likely used by an individual or small group of people for a short period of time. Due to the lack of diagnostic artifacts, a temporal period or cultural affiliation cannot be attributed to this site.





**Figure 13** Close up of the north wall profile of the Test Unit at 42TO5957 at 70 centimeters below present ground surface

#### National Register Recommendation

Site 42TO5957 contains the potential to provide information important to furthering the understanding of aboriginal occupations in northwest Utah. Although no diagnostic artifacts, stained sediments, FCR, or features were observed, the materials observed at this site occur in a dunal formation, and the excavation of a test unit indicates that cultural materials are present to at least 60 centimeters below the present ground surface. Sediments retain integrity and appear undisturbed. There are likely additional cultural materials present in the deeper sands of the dunes. The site may contain intact subsurface deposits, which could provide important information regarding regional prehistory. As such, this site is recommended eligible for the NRHP under Criterion D.

#### **PROJECT SUMMARY**

This report has been completed to provide cultural resources clearance for potential future industrial development associated with the SITLA- I-80 Block Development Project. A total of 650 acres (263 hectares) were surveyed for this Project. The surveys resulted in the discovery and documentation of three new cultural resources sites and seven IOs. Two of the new sites (42TO5955 and 42TO5957) are recommended eligible for the NRHP.

These investigations were conducted using techniques considered to be adequate for evaluating cultural resources available for visual inspection and that could be adversely affected by the Project. However, should additional cultural resources be discovered during the course of development activities, a report should be made immediately to the lead archaeologist at SITLA.

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## **Appendix A: Site Forms (Detached)**

## **EXHIBIT E**

### **DOCUMENTATION REGARDING SPECIES OF CONCERN**



United States Department of the Interior  
FISH AND WILDLIFE SERVICE

UTAH FIELD OFFICE  
2369 WEST ORTON CIRCLE, SUITE 50  
WEST VALLEY CITY, UTAH 84119

June 6, 2014

Robert Sowby  
6771 South 900 East  
Midvale, Utah 84047

RE: Property near Rowley Road in Tooele County, Utah

Robert Sowby,

We are writing in response to your inquiry related to listed species, species of special concern, or Endangered Species Act (Act) issues. We have indicated our response below which we believe best meets your request. If you have any questions about your responsibilities under the Act, or require further information, please contact Amy Defreese in my office at (801) 975-3330 ext.128. Thank you for your continued interest in conservation.

- ☐ You requested a list of endangered, threatened, proposed, and/or candidate species, and designated critical habitat which may occur in the area of your project. In an effort to expedite information sharing, we created an Information, Planning, and Conservation System (IPaC) that is available on-line at <http://ecos.fws.gov/ipac/>. IPaC can be used to identify any potential federally threatened or endangered species in your project area by using the "Initial Project Scoping" tool.
- ☒ Based on information from your request, we have not identified any issues that give us concern relative to species or critical habitat listed under the Act. This finding is based on our understanding of the nature of the project, local conditions, and/or current information indicating that no listed species are present. Should the nature of your project change, you may need to contact us for additional information.
- ☒ We recommend that you review your project relative to responsibilities under the Migratory Bird Treaty Act (see information at <http://www.fws.gov/utahfieldoffice/migbirds.html>).
- ☐ We recommend that you review your project relative to guidelines regarding placement of cell towers. Please see the following website for more information <http://www.fws.gov/habitatconservation/communicationtowers.html>.

Sincerely,

Larry Crist  
Utah Field Supervisor

U.S. Fish and Wildlife Service  
Utah Field Office  
2369 West Orton Circle, Suite 50  
West Valley City, Utah 84119

Robert Sowby  
6771 South 900 East  
Midvale, Utah 84047





GARY R. HERBERT  
Governor

SPENCER J. COX  
Lieutenant Governor

# State of Utah

## DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER  
Executive Director

### Division of Wildlife Resources

GREGORY SHEEHAN  
Division Director

June 2, 2014

Robert Sowby  
Hansen, Allen & Luce, Inc.  
6771 South 900 East  
Midvale, Utah 84047

Subject: Species of Concern Near Section 3 of Township 1 North, Range 8 West, SLB&M, Tooele County

Dear Robert Sowby:

I am writing in response to your email dated May 23, 2014 regarding information on species of special concern proximal to the proposed development project located in Section 3 of Township 1 North, Range 8 West, SLB&M, in Tooele County, Utah.

The Utah Division of Wildlife Resources (UDWR) does not have records of occurrence for any threatened, endangered, or sensitive species within the project area noted above. However, within a two-mile radius there are recent records of occurrence for burrowing owl, a species included on the *Utah Sensitive Species List*.

The information provided in this letter is based on data existing in the Utah Division of Wildlife Resources' central database at the time of the request. It should not be regarded as a final statement on the occurrence of any species on or near the designated site, nor should it be considered a substitute for on-the-ground biological surveys. Moreover, because the Utah Division of Wildlife Resources' central database is continually updated, and because data requests are evaluated for the specific type of proposed action, any given response is only appropriate for its respective request.

In addition to the information you requested, other significant wildlife values might also be present on the designated site. Please contact UDWR's habitat manager for the central region, Mark Farmer, at (801) 491-5654 if you have any questions.

Please contact our office at (801) 538-4759 if you require further assistance.

Sincerely,

Sarah Lindsey  
Information Manager  
Utah Natural Heritage Program

cc: Mark Farmer



**EXHIBIT F**

**TRAFFIC IMPACT**



RECEIVED

OCT 23 2014

H A & L

October 20, 2014

Robert Sowby  
Hansen, Allen and Luce, Inc.  
6771 S. 900 E.  
Midvale, UT 84047

Dear Mr. Sowby,

This is the county's response to your letter regarding the status of Rowley Road and future traffic created by Stericycle:

1. Tooele County is the owner of Rowley Road and as such has jurisdiction over it.
2. Tooele County does not intend to restrict the number of trucks serving the proposed Stericycle facility. However, one of the conditions placed on the Stericycle Conditional Use Permit was that "Acceleration and deceleration lanes on Rowley Road be constructed to provide better traffic flow and safety with final road improvement drawings reviewed and approved by the Tooele County Roads Department and final inspection of improvements be done by the Tooele County Roads Department."
3. No traffic study will be required as part of the conditional use permit granted to Stericycle.

If there are further concerns or questions, please contact our office.

Respectfully,

Blaine K. Gehring, ACIP  
Tooele County Planner

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## **APPENDIX A**

### **PLAN OF OPERATIONS**



# PLAN OF OPERATIONS

TOOELE COUNTY, UTAH

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February 24, 2015



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# I. WASTE MANAGEMENT PROCEDURES

## 1.0 DESCRIPTION OF WASTE

### A. Acceptable Wastes

The medical waste processed at the facility is solid waste generated in healthcare or healthcare-related facilities, animal care, and research, pharmaceutical manufacturing and distribution facilities. The facility also processes special waste streams approved by the Division of Solid and Hazardous Waste.

Typical wastes include paper, plastic, cloth, diagnostic cultures, human and animal tissues generated by hospitals, nursing homes, clinics, and other medical, dental and veterinary facilities; and expired and unused pharmaceuticals.

Regulated medical waste is generally defined as any waste that can cause an infectious disease or that reasonably can be suspected of harboring human pathogenic organisms. It is also known as red bag waste, infectious waste, potentially infectious waste, biomedical waste, and biohazardous waste. Regulated medical waste includes single-use disposable items such as needles, syringes, gloves, and laboratory, surgical, emergency room and other supplies, which have been in contact with blood, blood products, bodily fluids, cultures or stocks of infectious agents.

The following wastes are acceptable at the Stericycle facility:

Wastes, including regulated medical wastes that are generated in the diagnosis, treatment, or immunization of humans or animals or related research, in the production/testing of biological materials (vaccines), and in the preparation and administration of chemotherapy waste, including waste defined by federal, state and local laws as medical, biohazardous, biomedical, infectious, and other wastes identified below:

- 1 Biohazardous waste including pathological waste:
- 2 Laboratory waste including:
  - Cultures – medical/pathological
  - Cultures/stocks of infectious agents – research and industrial
  - Vaccines and related waste generated in the production thereof

- Microbiologic specimens and related waste
- 3 Surgical specimens/tissues, contaminated animal parts, tissues, carcasses or body fluids
  - 4 Fluid blood/blood products, containers/equipment and exudates, secretions, body fluids including, but not limited to, isolation waste
  - 5 Sharps waste including, but not limited to:
    - Needles, syringes, blades, needles with attached tubing, disposable surgical instruments
    - Medical/laboratory glassware including slides, pipettes, blood tubes, blood vials, contaminated broken glass
  - 6 Other medical waste as required by the infection control staff, physician, veterinarian or local health officer to be isolated and handled as regulated medical waste.
  - 7 Trace-contaminated chemotherapy (antineoplastic/cytotoxic drugs) waste:
    - Gowns, gloves, masks, barriers, IV tubing, empty bags/bottles, needles and syringes, empty drug vials, spill kits, and other items generated in the preparation and administration of antineoplastic drugs
  - 8 Other Wastes:
    - Expired and unused pharmaceuticals
    - Confidential records / proprietary packaging and products
    - Contraband (e.g. police evidence)
    - Agriculture (APHIS) Waste, including Regulated Garbage from domestic and international sources
    - Outdated, off-specification or unused consumer commodities
    - Recalled or outdated disposable medical equipment or supplies
  - 9 Sharps and I.V. tubing and bags/bottles which are being discarded and are considered incidental to preparation and administration of the drugs.



- 10 Intravenous tubing, bags, bottles, vials and syringes used in chemotherapy preparation and administration that contain only residual amounts of antineoplastic drugs.
- 11 “Municipal solid waste” as defined by UAC R315-302-2 (46) contaminated with potentially infectious materials
- 12 Other non-hazardous waste as approved by the Division of Solid and Hazardous Waste.
- 13 Special wastes (as defined by UAC R315-302-2 include):
  - Furniture contaminated with potentially infectious materials
  - Infectious waste
  - Dead animals

B. Estimated Annual Quantities:

The maximum incineration capacity of the facility is 4,110 pounds per hour averaged. This estimated quantity accounts for up to two incinerators. The estimated annual maximum quantity of waste incinerated at the facility is approximately 18,000 tons per year.

C. Areas Served by Facility:

This facility serves the greater Salt Lake City area as well as the entire state of Utah. As part of Stericycle’s business network, this facility also services various markets throughout North America. The primary market served is Stericycle’s Western Regional system, including but not limited to the Pacific Coast and Intermountain States.

D. Non-conforming Waste:

Non-conforming waste will not be accepted for treatment and includes:

1. Chemical materials which are regulated as hazardous waste under RCRA or UAC Subsection 19-6-102 (10) and Section R315-2-3;
2. Complete human remains (e.g., that include head and/or torso), cadavers, and fetal remains; (Stericycle will not accept recognizable fetal remains);;
3. Compressed gas cylinders and canisters (including aerosol cans);
4. Radioactive materials (as outlined in Section 3);

5. Explosive materials;
6. Bulk cytotoxic materials;
7. Full or partially full I.V. bottles/bags and vials of chemotherapy agents that constitute a hazardous waste;
8. Compressed gas cylinders/canisters, and aerosol cans;

E. Waste Tracking:

Stericycle, Inc. currently employs a tracking system in which waste containers are labeled with the generators' unique codes and tracked.

F. Waste Screening Procedures and Policies:

Waste acceptance, screening procedures and guidelines are outlined in Section III-*Waste Acceptance Protocol*.

## 2.0 WASTE HANDLING AND STORAGE

A. Container Management:

1. Waste Receiving/Storage:

Collection and transport vehicles arriving at the facility are directed either to an unloading dock or to a holding area.

Waste received will be disposed within 30 days from the day of pickup as listed on the shipping manifest.

2. Requirements to control pests and disease vectors are outlined in Section XII.

B. Container Management Practices:

1. Container Flow in Management Area:

Incoming waste containers are removed from vehicles onto the dock allowing adequate aisle space for workers to move about the receiving area and to allow for periodic cleaning.

2. Container Handling:

Containers are loaded into the incinerator using loaders, forklifts, conveyors, and/or manually. Containers and/or lids may be

washed out above the incinerator feed system, within a designated container wash area, or using a container wash system.

3. Decanting of Containers:

Containers and bags of waste may be decanted/consolidated into other containers (e.g., macro bins) for subsequent management either on site or at another facility following transport.

C. Removal of Liquids:

The discharge of liquid and semi-liquid wastes other than hazardous waste, laboratory waste or microbiological specimens to a public sewage system, is acceptable if performed in a manner which does not pose an occupational hazard per the state and or local sewer authority, and OSHA standards.

Removal of liquids as necessary, due to spills or leakage of medical waste containers, is accomplished according to Section IX-*Contingency Plan*.

D. Waste Transportation:

Vehicles used to transport regulated medical waste shall comply with USDOT and applicable local transportation requirements. For personnel training requirements, see Section V.

E. Alternative Waste Handling or Disposal

When the facility is not able to incinerate waste, during periods of outage and as needed to maintain compliance with applicable storage requirements, arrangements will be made for handling and disposal at other Stericycle locations or industry partners that are approved for such management, including arrangements for transport and delivery of waste for treatment to those facilities.

## **II. ASH ANALYSIS AND MANAGEMENT PLAN**

### **1.0 SCOPE**

This plan applies to the Tooele County facility so long as it generates bottom ash and/or fly ash.

### **2.0 REQUIREMENTS**

2.1 Characterize and manage ash waste that is determined to be a hazardous waste in accordance with RCRA.

2.2 For Personnel Training requirements see Section V.

### **3.0 ASH ANALYSIS**

Ash generated on site, with the potential to be RCRA regulated, shall be characterized to determine whether it is a hazardous waste.

Ash analysis shall be repeated if there is a change in process affecting the waste stream.

Bottom Ash analysis shall be conducted annually.

Ash analysis shall be conducted by a certified laboratory.

### **4.0 SAMPLE COLLECTION, PRESERVATION, AND HANDLING**

Ash samples shall be collected as required by SW 846 or other approved methods.

### **5.0 MANAGEMENT OF ASH IDENTIFIED AS CHARACTERISTICALLY HAZARDOUS**

All required personal protective equipment must be worn. This includes safety glasses, gloves and any PPE required for the specific waste.

#### Handling:

Ash is to be placed in designated collection containers (e.g., one-yard Helios Bags or other compliant container) to await disposal.

Collection containers shall be handled as outlined in the Fugitive Dust Control Plan, Section X, for the minimization of aerosolized particulate.

Collection containers shall only accumulate in those areas designated as Satellite Accumulation Areas.

When collection containers are full, they are to be sealed and transferred to the Waste Management Area.

Storage:

Collection containers shall be stored in the Waste Management Area.

Transport/Disposal:

Facilities receiving waste from Stericycle shall have all the appropriate permits as required by Federal and State regulations.

## **6.0 REFERENCES**

US Code of Federal Regulations, Title 40, Part 261.

US Code of Federal Regulations, Title 40, Section 262.34 (c)(i) and (c)(ii)



### **III. WASTE ACCEPTANCE PROTOCOL**

#### **1.0 WASTE ACCEPTED FOR TREATMENT**

Section I, Waste Management Procedures, lists wastes that are accepted for treatment.

#### **2.0 NON-CONFORMING WASTE NOT ACCEPTED**

Prohibited waste is listed in Section I, Waste Management Procedures. Prohibited waste screening requirements are outlined below:

##### **2.1. Radioactive Waste:**

2.1.1. Prior to treatment, all containers will be screened using a radiation monitor. Any container reflecting a level above 50  $\mu\text{R/hr}$  will be rejected from treatment.

2.1.2. If radiation is detected at regulated levels, the container is isolated, logged, and procedures for notification of proper authorities and further appropriate handling are initiated.

##### **2.2 Hazardous Waste:**

2.2.1 Hazardous waste, as defined under Utah Administrative Code (UAC) R315-301-2 (30), and PCBs, as defined UAC R315-301-2 (53), will be rejected from treatment and arrangements will be made to return the waste to the generator or forward it to a proper treatment, storage, and/or disposal facility.

#### **3.0 PACKAGING OF WASTE**

Regulated medical waste is received in containers approved by the US Department of Transportation and/or that are appropriate for the specific waste streams.

Regulated medical waste received for treatment will be packaged in either reusable plastic containers, in single-use containers that can be incinerated, or other approved containers.

#### **4.0 REUSABLE WASTE CONTAINERS**

Infection control requirements for reusable containers are outlined in Section XIII.

## **5.0 WASTE TRACKING**

### **5.1 System for Tracking Waste:**

Waste shipments received at the facility via a medical waste transporter must be accompanied by a shipping/tracking document (electronic or paper).

Barcodes and optical scanners or “readers” may be used to record tracking data.

## **6.0 ACCEPTANCE OF WASTE AT THE FACILITY**

Wastes that are non-conforming are rejected from treatment.

## IV. INSPECTION PROCEDURES

### 1.0 INTRODUCTION

Records of inspections shall be maintained in the site operating record as required. Inspection items may be performed and records kept as part of the plant maintenance, transportation, and/or safety programs.

Inspection forms when required will note the inspection date and the inspector's name or initials.

Deficiencies found that require corrective action will be noted. An inspection may also note other observations and/or recommendations for corrective action. If a repair is immediately correctable (such as by replacing a sign, or getting another fire extinguisher) the corrective action may be noted on the form. Corrections made prior to completing the inspection need not be noted as a deficiency. If an item is not applicable, it will be noted on the form along with the reason, if required.

As site conditions change, inspection procedures and items will change.

### 2.0 FREQUENCY OF INSPECTIONS

The following specifies the minimum frequency of inspection for each required item.

**2.1 Daily:** Daily inspections are not required to be recorded and may be performed by multiple personnel.

- Inspect loading and unloading areas
- Inspect liquid-waste tank system for leaks
- Inspect above ground-piping for leaks
- Inspect sumps and/or secondary containment
- Visually inspect incinerator temperature-monitoring instrumentation
- Inspect temperature settings of refrigerated trailers when in use

**2.2 Weekly**

- Perform a facility walk through of areas around the incinerator, container storage, and air-pollution control system.
- Inspect emergency eyewash and showers
- Inspect containers and related containment systems

### **2.3 Monthly**

- Check radiation screening system for proper operation
- Inspect fire extinguishers

### **2.4 Quarterly**

- Inspect perimeter lights, notice signs, and security fence
- Inspect spill kits
- Check operation of the HMIWI chart recorder
- Check calibration and operation of the weight scale system

### **2.5 Annual**

- Check calibration and operation of the radiation-monitoring system
- Check facility emergency signals and conduct an evacuation drill

## **3.0 AREAS OF INSPECTION**

Inspection criteria are noted in the table, below. The following outlines some of the items that will be checked during the inspections.

### **3.1 Containers**

Fly ash bags and waste containers are inspected for proper labeling and closure, cracks, tears, leaks, spills, and stacking stability.

### **3.2 Wastewater Storage Tank**

The wastewater tank receives wastewater from the facility processes.

### **3.3 Incinerator**

The inspection schedules for the incinerator are included in this section. See tables, below.

### **3.4 Sumps and Secondary Containment Areas**

The sumps are located under the incinerator, ash quench tank and in the storage area.

If a sump contains any material that would compromise its function, it will be cleared as needed to prevent overflow.

### 3.5 Other Areas

Safety and security inspections are made of the fence, locks, fire extinguishers, alarms, emergency eyewashes and showers.

## 4.0 CORRECTIVE ACTION

The status of items being inspected will be noted on the inspection logs. A blank will not be used to indicate an acceptable status. A work order number may be referenced as necessary if additional corrective-action work needs to be done. Corrective actions will be completed in a timely manner.

## 5.0 EXAMPLE INSPECTION MATRIX

The matrix contained in this section is only an example. The forms may be changed as site conditions change. Additionally, they may be electronic or exist in some other format.

Example Daily Inspection	
General	Suggested Inspection
Loaded refrigerated trailers	Operable, correct temperature
North loading/unloading area	Leaks, spills
South loading/unloading area	Leaks, spills
Sump under incinerator	Operational, free of obstructive material
Sump under bottom ash (quench tank)	Operational, free of obstructive material
<b>Incinerator Monitoring Instrumentation</b>	
Secondary Combustion Chamber Temperature	Good working order, recording properly
Primary Combustion Chamber Temperature	Good working order, out of tolerance, recording properly
Bag house	Good working order
Incinerator Temperature Chart Recorder	Good working order, out of tolerance, recording properly

Example Weekly Inspection	
Inspection Item	Suggested Inspection
<b>System Walk Through</b>	
Containers (reusable) in Process Area	Operational, good working order, proper labels, as applicable
Storage Area – Containers (fly ash)	Closed, bulging, leaking, proper placement, labels
Eyewashes	Operable
Showers	Operable



Example Monthly Inspection	
Inspection Item	Suggested Inspection Outcomes to be Indicated
Radiation Monitoring System	Operable
Fire Extinguishers	Tagged, charged, in-place, damage

Example Quarterly Inspection	
Inspection Item	Suggested Inspection Outcomes to be Indicated
<b>Safety and Security</b>	
Exterior Wall	Gate closed, no breach in exterior wall that would allow unauthorized entry
Warning Signs	Legible, visible and secured
Perimeter Lighting	All lights working
Spill Kits	Inspect and restore if necessary
<b>Instrumentation</b>	
HMIWI Chart Recorder	Operable
Weight Scale System	Calibrated and check Data Acquisition System (DAS) Signal

Example Annual Inspection	
Inspection Item	Suggested Inspection Outcomes to be Indicated
Radiation Monitoring System	Operable, calibrated
Evacuation Drill	Check alarms and for proper response

## **V. PERSONNEL TRAINING**

### **1.0 INTRODUCTION AND OVERVIEW**

This section addresses training requirements for waste management activities at the facility. Training is provided via introductory training programs for new hires and continuing training programs for facility personnel.

Both introductory and continuing training may be provided via online platforms or in classroom settings. Online training sessions are followed by quizzes which require 100% competency to complete.

During the first 180 days of employment, new hires may work under supervision of a trained employee until classroom or online training is completed, unless otherwise noted in Table 1.

Annually, a contingency exercise or drill will be conducted that includes implementation of the Contingency Plan, a written evaluation of employees' response to the drill, and a headcount of employees that participated in the drill.

### **2.0 SCOPE OF TRAINING PROGRAM**

#### **2.1 Stericycle Employees**

Stericycle employees are categorized as: Plant Workers, Maintenance Technicians, Drivers, Supervisors and Managers.

#### **2.2 Non Stericycle Employees – Temporary Employment Agency**

Temporary employees are utilized on an as-needed basis. Temporary employees are typically hired for shorter periods of time (e.g., less than 6 days or less than 3 months).

#### **2.3 Contractors (3<sup>rd</sup> Party)**

Contract workers receive training prior to beginning unsupervised on-site work involving waste. A contractor representative may sign an acknowledgment for required Stericycle training prior to beginning on-site work involving waste.

#### **2.4 Non-Waste Workers, Visitors, Inspectors, etc**

Visitors, inspectors, and non-waste workers are escorted as necessary during the course of their site visit.

Visitors, inspectors, and non-waste workers shall not be directly involved in waste handling or waste management activities.

### **3.0 PERSONNEL TRAINING RECORDS**

Training required by this plan is documented either electronically (in the True North, or equivalent, database) or in manual training record files.

Training records of current personnel must be kept until closure of the facility. Training records on former employees must be kept for at least three years from the date the employee last worked at the facility.

## **VI. FACILITY SECURITY**

### **1.0 24-HOUR SURVEILLANCE SYSTEM**

The facility is occupied 24 hours per day during normal operations. The facility is monitored by employees or by using security cameras.

### **2.0 BARRIER**

The facility is surrounded on the perimeter with a fence or natural barrier. The main gate is electrically controlled and can be opened or closed from the front office or by code. All visitors and trucks are logged by name, and date of entrance.

During non-business hours, the main gate and front door will be locked. Visitors arriving during non-business hours will be able to communicate with the facility (e.g., a plant supervisor) by telephone or radio.

### **3.0 MEANS TO CONTROL ENTRY**

All non-Stericycle vehicles must stop at the gate to sign in and obtain docking or contact information. Trucks will be checked to ensure they are scheduled and then routed to the appropriate area.

Local law enforcement will be called for any trespassing.

### **4.0 WARNING SIGNS**

At entry points to the facility, notifications will be posted. Example:  
**UNAUTHORIZED PERSONNEL KEEP OUT. VISITORS MUST SIGN IN AT THE FRONT OFFICE (or FRONT DESK).**

# **VII. PREPAREDNESS AND PREVENTION PLAN**

## **1.0 INTRODUCTION**

This Preparedness and Prevention Plan outlines the equipment and procedures in place at the Stericycle, Inc. facility to prevent and respond to emergencies at the facility. These emergencies include fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents.

## **2.0 EQUIPMENT**

### **2.1 Internal Communications**

The communications system at the plant includes telephone and audible alarms. Telephones are in the buildings, with the greatest concentration in the office building. All personnel involved will have access to a phone or the internal alarm system during operations.

### **2.2 External Communications**

The plant is equipped with a standard telecommunications system that is connected to the public phone system by standard lines. Many employees also have cellular telephones. Outside emergency calls can be made by dialing the emergency number 911 using any phone.

### **2.3 Emergency Equipment**

All facility communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment, where required, will be tested and maintained as necessary to assure its proper operation in time of emergency.

### **2.4 Spill Control Equipment**

Spill kits are located in the dry storage area, incinerator area, and in the Air Pollution Control area. Spill kits vary in content based on storage location.

### **2.5 Personal Protective Equipment (PPE)**

Required PPE is made available to employees.

### **2.6 Water for Fire Control**

A water system is available for fire control within the facility. The fire water pump system is in full compliance with the requirements of NFPA 20.

### **3.0 TESTING AND MAINTENANCE OF EQUIPMENT**

Emergency eyewashes, showers, fire extinguishers, sumps, spill kits, alarms, and other emergency equipment are inspected regularly. If problems are found, the equipment is tagged out of service and a requisition is placed with maintenance for immediate repair. All equipment will be maintained as necessary to assure its proper operation in time of emergency.

### **4.0 AISLE SPACE REQUIREMENTS**

All areas of the plant are accessible by fire protection equipment around the perimeter plant area. Container placement and aisle space in the waste management area (dry storage area) will be maintained at two feet between the stored containers and any stationary items in the adjacent driveway area in the building.

### **5.0 PREVENTIVE PROCEDURES, STRUCTURES, AND EQUIPMENT**

#### **5.1 Unloading Operations**

The unloading areas for trailers of containers are provided with dock levelers to minimize the potential for mishandling containers due to uneven surfaces or trailer movement. Lighting devices are provided to illuminate the transport vehicle cargo areas during unloading and loading. Containers are off-loaded by handcarts, forklifts, conveyors or by other material handling equipment or means.

#### **5.2 Runoff**

The process operations are contained within facility structure with appropriately designed containment. No waste or process water is expected to migrate beyond these areas. Waste containers are stored in the building or on trailers. No runoff from the waste processing or storage areas is expected. The site drainage is to the southwest.

#### **5.3 Equipment and Power Failure**

Equipment failure is monitored by instrumentation. Detection of an abnormal operating condition or process parameter initiates a waste feed lockout or controlled shutdown of the equipment. In the event of a loss of external power, the facility generator will be started to provide power to critical process equipment.



## **6.0 PREVENTION OF REACTION OF IGNITABLE, REACTIVE AND INCOMPATIBLE WASTES**

Stericycle utilizes a strict waste acceptance policy. See Section I, Waste Management Procedures, and Section III, Waste Acceptance Protocol. Ignitable, reactive or incompatible wastes are not received for treatment. If an ignitable, reactive, or incompatible waste is generated incidental to operations, it will be stored and labeled as required by 40 CFR 262.34(a)(3) until transported to a permitted treatment, storage, and disposal facility. Precautions for segregating incompatible or reactive materials (e.g., strong acids and bases) will be employed, and materials will be safeguarded from flame, spark, or other ignition sources when ignitable.

## **VIII. SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN**

The Stericycle Tooele County facility is not required to have a Spill Prevention Control and Countermeasures Plan. The plant has an aggregate above-ground storage capacity less than 1,320 gallons.

For requirements, policies and practices applicable to the Stericycle Tooele County facility related to spill prevention, inspection, and spill response, refer to Sections IV, V, VII, and IX of this Plan of Operations.

## IX. CONTINGENCY PLAN

### 1.0 EMERGENCY RESPONSE PLAN (ERP)

#### *Contact Information*

One or more of the following key management members may be contacted in the event of an emergency:

Name TBD	Phone # TBD	Facility or Plant Manager
Name TBD	Phone # TBD	Transportation Manager
Name TBD	Phone # TBD	Region Operations Director
Name TBD	Phone # TBD	Area Safety Manager
Name TBD	Phone # TBD	Environmental Quality Manager

#### *Emergency Telephone Numbers*

In case of fire, explosion, personal injury, law enforcement, or any other emergency: **Call 911**

**To outsource clean up and spill reporting to government entities call (or similar contractors):**

Chemtrec for Spills	Hotline:	800-424-9300
ERTS for Spills (per SH-P 002)	Hotline:	800-210-6804

**For Major Medical Waste Spills (not including in-facility spills),** deemed unmanageable, should be reported to the Utah Department of Environmental Quality.

Utah Department of Environmental Quality	Hotline (during business hours)	801-536-0200
	Hotline (after hours for timely response)	801-536-4123

**Medical responses are initiated by the Emergency Coordinator via the following facilities:**

Serious Emergency Care	Mountain West Medical Center 2055 North Main Street Tooele County, UT 84074	911 435-843-3600
	Airmed (Thru Dispatch)	911
	Mountain West Ambulance Transport, Tooele County, UT	911 (435) 882-1900
Urgent Night/Weekend Care	Urgent Care of Tooele Valley 1244 N. Main, Suite 201 Tooele UT 84074	(435) 882-3968 Mon-Sun 9AM -10PM

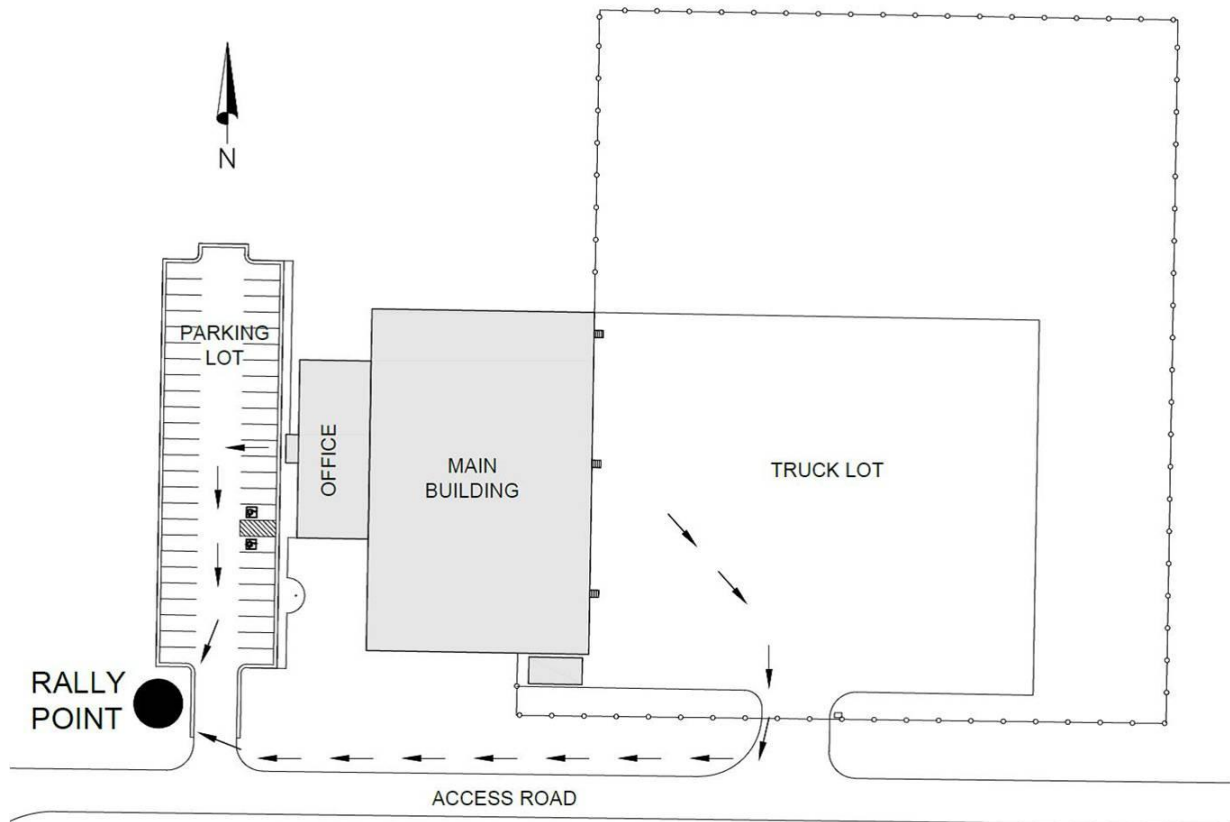
Non urgent weekday care	Intermountain InstaCare 777 N Main St., Tooele, Utah 84074	(435) 228-1200 9 AM – 9 PM
	Mountain West Family Practice 2356 North 400 East, Suite 201, Tooele, Utah	(435) 882-2350 M-F 8 AM – 9 PM

## 2.0 EVACUATION PLAN AND INFORMATION

### A. Evacuation Instructions

1. The facility shall be evacuated according to the following steps:
  - a. Announcement of evacuation both by alarm and oral instructions
  - b. Facility personnel will evacuate via the routes and exits per the evacuation plan. (Note: Personnel exiting through the yard gate will use the manual open switch in the event of a loss of power during an evacuation.)
  - c. Personnel will move to the rally point located in the southwest corner of the property
2. The Emergency Coordinator Responsibilities:
  - a. The Emergency Coordinator will conduct a role call. All employees shall be accounted for by each supervisor.
  - b. Emergency Coordinator will use this information to determine missing persons
  - c. Emergency Coordinator will direct effort to account for any missing personnel.
  - d. Emergency Coordinator will share headcount information with emergency responders
  - e. Following an evacuation, personnel will not return to work until the “all clear” is given by the Emergency Coordinator.
3. Evacuation Plans/Maps
  - a. Posted in the facility
  - b. Exits and routes are indicated
  - c. Rally point is indicated.
  - d. Other emergency equipment is indicated on the posted maps, e.g. fire extinguishers, eye wash, spill kits, first aid kits, shelters, hydrants, gas and utility shut off

## EVACUATION MAP



### **3.0 CONTINGENCY PLAN**

#### **A. Implementing this Contingency Plan**

1. This plan shall be implemented immediately in the event of the following contingencies:
  - a. Fires
  - b. Explosions
  - c. Releases
2. Contingency Plan Procedure
  - a. Any employee, contractor, or other worker upon discovery of a fire, explosion, or release at the facility shall implement this Contingency Plan
  - b. Following discovery of a fire, explosion or release, the discoverer shall notify an individual on the list of Emergency Coordinators. (See page 21.)
3. Access to Corporate Resources
  - a. All employees shall have access to Stericycle resources for emergency response
4. Arrangements with local response organizations
  - a. Tooele County Fire Department (key entry and/or gate entry access will be arranged, as necessary)
  - b. Tooele County Health Department (annual inspections and permitting)

#### **B. Copies of Contingency Plan**

1. The Permittee shall keep a copy of this Contingency Plan in the facility office.

#### **C. Amendment of this Contingency Plan**

1. The plan shall be reviewed and amended, as necessary, under any of the following circumstances:
  - a. The permit or facility is modified affecting this Contingency Plan.
  - b. The emergency names (emergency coordinators) or their telephone numbers change.



## D. Emergency Equipment

1. Below lists the facility emergency equipment and provides a brief outline of their capabilities, location in the facility, or use:

Emergency Equipment	Capabilities, Location, or Use	
Eye Wash Shower Stations	Shower and eye wash	One Each in each bay
First Aid Kits	Portable	1-Office area 2-Breakroom
Fire Suppression	Wet system – heat activated	
Fire Extinguishers	“ABC” & 1 “C” -Electrical	Indicated on Evacuation Chart
Evacuation Alarm	Audible	Plant
Spill Kits	For spills of RMW, aqua ammonia, and caustic soda	Kits with absorbent, containment
PPE (Respiratory)	Full Face and Universal Cartridges (includes Ammonia)	Accessible for plant employees
PPE (Hands)	Gloves	Latex for RMW; nitrile for chemicals
PPE (Body)	1. Tyvek with hood, boots, tape 2. Heat Suits: with hood	For use during shutdown maintenance
PPE (Head)	Helmets (hard hats)	In pollution control area

## E. Emergency Coordinator Duties

1. *For imminent or actual emergencies:* Activate internal facility alarm or communication systems, notify and evacuate facility personnel. Notify appropriate response agencies if their help is needed.
2. *For a release, fire, or explosion:* As reasonably possible, identify the character, exact source, amount, and areal extent of any released materials.
  - a. *For threats to human health and/or environment within and/or outside of the facility:* Emergency Coordinator shall respond and report as outlined in this plan.
  - b. *For threats to the larger local area:* If the Emergency Coordinator’s assessment indicates that evacuation of nearby areas may be advisable, the Emergency Coordinator shall immediately notify appropriate authorities. The Emergency Coordinator shall be available to help appropriate officials decide whether local areas should be evacuated.

## 4.0 SPILL RESPONSE

### A. General Response to Spills and Releases:

1. Notify supervisor and those in the area
2. Determine need for evacuation.
3. Don PPE as appropriate
4. Assess extent of the spill
5. Contain release from unauthorized discharges
6. Remove and/or containerize spill material – using appropriate materials and/or tools
7. Sanitize the area and tools used (e.g., disinfectant may be used) as necessary
8. Doff and dispose PPE
9. Remove and appropriately process and/or manage spill cleanup material in accordance with applicable requirements
10. Determine reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, continue, or spread (e.g., stopping affected processes and operations)
11. Determine reporting requirements and provide required reports

### B. Regulated Medical Waste (*BioHazardous – Pathological, Pharmaceutical, Trace Chemotherapy*) in addition to the General Response, above:

1. RMW spills contained within the facility are not reportable

### C. Releases (Chemical Hazardous Material) and/or Fires

1. Secure area to prevent employee exposure, as necessary.
2. Containment: Dike area to prevent liquid from entering drainage systems. Diking materials include absorbent, pigs and pads.
3. Neutralize materials where necessary, e.g. ammonia (vinegar); caustic soda (water and/or vinegar); HCl (sodium bicarbonate)
4. Determine whether spilled material is or has become a hazardous waste.
5. Ensure that, in the affected area(s) of the facility, materials that may be incompatible with the released material are kept from contact
6. Releases that are contained within a building or secondary containment system need not be reported.
7. If the spilled material is or becomes a hazardous waste, a record of the spill shall be noted in the operating record, including, the time, date, and details of any incident that requires implementing this Contingency Plan. Within 15 days after the incident, a written report on the incident shall be submitted to the Utah Division of Solid and Hazardous Waste. The report shall include the items listed in Section 6.0, below.

**D. Chemical Releases OUTSIDE the facility** *in addition to the General Response, above:*

1. Spill Cleanup Determination: The Emergency Response Manager and Facility Manager will need to determine if the spill can be contained and fully recovered without leaching into waterways or subsurface levels. If not the spill must be managed by external contracted resources
2. 3<sup>rd</sup> Party Contractor Managed Spill Clean Up:
  - a. Contact CHEMTREC and/or ERTS (or similar contractors) to report the spill, as necessary. Chemtrec may assist and coordinate the emergency response and manage the required spill reporting to governmental entities. ERTS may arrange for and execute the onsite cleanup activities for Stericycle.
3. Provide for treating, storing, or disposing of recovered waste, contaminated soil or surface water, or any other material that results from a release, fire, or explosion.
4. If the resulting material is determined to be a hazardous waste, the recovered material shall be managed as a hazardous waste.

**E. Compressed Gas Tank Releases** *in addition to the General Response, above, as applicable:*

1. This procedure applies to fixed tanks used for refuel or process supply purposes. Currently there are no plans for compressed gas tanks at the Tooele County, UT facility that are above or below ground, and that are used for refuel processes.
2. Use cryogenic PPE, as appropriate

## **5.0 COORDINATION AGREEMENTS**

Arrangements with Emergency Response Contractors:

The facility has agreements with, the following Treatment, Storage, and Disposal Facility:

Clean Harbors Environmental Services, Inc.  
Grassy Mountain  
3 Miles East 7 Miles North of Knolls  
Clive, UT 84029  
(801) 323-8900

## **6.0 REQUIRED REPORTS**

As required in the event of an applicable contingency, the facility shall immediately notify the Utah Department of Environmental Quality (Division of Solid and Hazardous Waste).

The report will include:

- Name and telephone number of reporter;
- Name and address of facility;
- Time and type of incident, e.g., discharge, fire;
- Name and quantity of material(s) involved, to the extent available;
- The extent of injuries, if any; and
- The possible hazards to human health or the environment, outside the facility.

The facility will record Contingency Plan incidents in the operating record, as required.

Where required, the facility will submit a written report to the Executive Secretary within 15 days after an incident that required implementation of the Contingency Plan. The report will include:

- Name, address, and telephone number of the owner or operator;
- Name, address, and telephone number of the facility;
- Date, time, and type of incident;
- Name and quantity of material(s) involved;
- The extent of injuries, if any;
- An assessment of actual or potential hazard to health or the environment, and
- Estimated quantity and disposition of recovered material that resulted from the incident.

Contained spills or discharges that do not threaten human health need not be reported.

As required by 40 CFR §302.6, spills on site involving reportable quantities (RQ) will be reported to the National Response Center at 800-424-8802. As required, they will also be reported to the Utah Division of Solid and Hazardous Waste, Tooele County Health Department, and the U.S. EPA, Region VIII.

As required, reports to the Director will be sent to:

Director  
Utah Division of Solid and Hazardous Waste  
P.O. Box 144880  
Salt Lake City, Utah 84114-4880

Required reports to EPA Region VIII will be submitted to:

Regional Administrator  
U.S. EPA - Region 8  
1595 Wynkoop Street  
Denver, CO 80202-1129

Required reports to Tooele County Health Department will be submitted to:

Tooele County Health Department  
151 North Main Street  
Tooele, UT 84074

Immediate reporting of certain events to the Utah Department of Environmental Quality, as outlined in this plan, shall be made to the following:

Utah Division of Solid and Hazardous Waste  
(801) 536-0200 (during office hours); or

Utah Department of Environmental Quality  
(801) 536-4123 (24-hour answering service)

## **X. FUGITIVE DUST CONTROL PLAN**

### **1.0 INTRODUCTION**

This Fugitive Dust Control Plan outlines the procedures and systems for the facility in order to satisfy specific requirements contained in Utah Administrative Code in Rule R315-302 for fugitive dust and for wind-blown litter.

### **2.0 FUGITIVE DUST SOURCES AND CONTROL STRATEGIES**

The facility has been designed with paved areas and an enclosed operational area in order to minimize the sources of fugitive dust and to contain and prevent windblown litter.

The potential fugitive dust sources at the facility include:

- Parking lot and access roadway
- Bottom Ash System
- Fly Ash System

Provided below is a summary of their respective control strategies.

### **3.0 PARKING LOT AND ACCESS ROADWAY**

The parking lot and the access roadway are the primary potential source of fugitive dust at the facility. Dust may be generated on-site or carried on-site with the delivery trucks. Stericycle minimizes the potential for fugitive dust generation from the parking lot and access roadway via:

- Periodic cleaning and/or vacuuming, as needed, to minimize the buildup of dust, debris, road salt, sand, crushed slag, and/or trash.
- Loading and off-loading of vehicles in an enclosed dock and processing area.

### **4.0 BOTTOM ASH**

Bottom ash is a potential source of fugitive dust at the facility. Ash from the primary chamber drops into a pit where it is quenched and loaded into a roll-off or other storage and transfer vessel. The chance for fugitive dust generation is minimal due to the water content of the ash and management within the building during normal operations. Stericycle further minimizes the potential for fugitive dust generation from bottom ash by:

- Periodic cleaning of the processing area, as needed, to minimize the buildup of ash, dust, debris, and/or trash.



## **5.0 FLY ASH**

Fly ash is a potential source of fugitive dust at the facility. The chance for fugitive dust generation is minimal due to storage and management within the building during normal operations. Stericycle further minimizes the potential for fugitive dust generation from fly ash by:

- Periodic cleaning of the processing area, as needed, to minimize the buildup of ash, dust, debris, and/or trash.

## **6.0 RECORDKEEPING AND REPORTING**

There are no recordkeeping and reporting requirements in this plan associated with fugitive dust control measures.

## **XI. INDUSTRIAL SAFETY PROGRAM**

It is the intent of the facility to comply with applicable OSHA regulations, as well as applicable Federal, State, and Local agency regulations pertaining to Industrial Safety.

The facility is committed to providing a safe and healthful work environment. An appropriate industrial safety program is an integral part of the facility operational practices.

## **XII. CONTROL OF DISEASE VECTORS**

### **1.0 INTRODUCTION**

**1.1 Scope:** To establish and maintain a safe, effective, and environmentally sound program to prevent or control pests and disease vectors that may adversely impact human health.

**1.2 Definition:**

*Disease Vector:* Any rodents, flies, mosquitoes, or other animals, including insects, capable of transmitting disease to humans.

**1.3 Responsibilities:** Stericycle personnel will follow the procedures outlined in this section.

### **2.0 FACILITY/GROUNDS SANITATION**

**2.1** Effective sanitation measures and proper policing of grounds are of primary importance in disease vector control. With proper sanitation, less dependence needs to be placed on other measures. Fermenting or decaying organic matter is an attraction for disease vectors. Therefore, the elimination of sources of attraction for disease vectors is essential. Proper disposal of wastes, including medical and liquid wastes, reduces the attraction of disease vectors to the facility and grounds.

**2.2** The container management area is cleaned and decontaminated as required to maintain sanitary and clean conditions.

### **3.0 MEDICAL WASTE RECEIVED BY THE FACILITY**

**3.1** Medical Waste transported to the facility shall be in enclosed vehicles. Waste received by the facility shall be in containers with tight fitting lids and lined with tied bags.

**3.2** Prevention of Entry: Medical waste shall be containerized and covered with a tight fitted lid until processed.

## **4.0 HARBORAGE ELIMINATION**

**4.1** As harborages are eliminated, populations of disease vectors are reduced. The reduction of cracks and crevices are reduced. The reduction of cracks and crevices and general elimination of harborages is very important in disease vector control. Typical harborages include the following:

- (a) Standing water.
- (b) Holes for plumbing and electrical lines, as well as electrical and fuse boxes.
- (c) Old and torn down insulation
- (d) Areas between walls
- (e) Soiled sumps or basins

## **5.0 CONTAINER AND VEHICLE WASHING**

### **5.1 Container Washing.**

The reusable containers are disinfected prior to reuse. Reusable containers are disinfected using one of the following methods:

- (a) Exposing the container to wash water at a minimum of 180 degrees F.
  - 1. The use of a commercial cleaning agent such as Quaternary Ammonium Compounds or Chlorine (bleach)
- (b) Following disinfection, reusable containers are visually inspected for cleanliness.

### **5.2 Transport Cargo Area Sanitizing.**

- (a) Vehicle Cargo areas are to be decontaminated as required to maintain sanitary and clean conditions. Prior to any vehicle leaving the disposal site after unloading, it is necessary to decontaminate the cargo area if there are visible signs of soiling or leakage. One of the following methods shall be used to disinfect the cargo areas of transport vehicles:

Temperature: Exposing the cargo area surfaces to hot wash water at a minimum of 180 degrees F.

Commercial cleaning agents: Quaternary ammonium compounds or chlorine (bleach).

## **6.0 CHEMICAL CONTROL**

Some aspects of chemical control may include:

### **6.1 Bait stations**

- (a) 3<sup>rd</sup> party use for rodent control measures / abatement program

### **6.2 Insect repellent**

- (a) 3<sup>rd</sup> party use for insect control measures / abatement program

## **XIII. INFECTION CONTROL**

### **1.0 TRAINING**

Facility employees are trained initially and updated annually as described in Section V (Personnel Training). Infection control is a central topic of courses such as, Bloodborne Pathogens (BBP), Hazardous Materials Management, personal hygiene, and personal protective equipment (PPE).

### **2.0 VACCINATIONS**

Facility employees who have a potential risk of exposure to bloodborne pathogens are given the opportunity to receive the Hepatitis B vaccination series free of charge. The Hepatitis B vaccination is also offered after potential exposures (e.g., a sharps-type BBP injury exposure).

### **3.0 PERSONAL PROTECTIVE EQUIPMENT (PPE)**

Facility plant and transportation employees are required to wear long pants, a shirt or coveralls, and steel-toed shoes/boots. A clean uniform is worn daily. A laundry service is used; employees do not take their uniforms home to launder.

PPE, including but not limited to face shields, safety glasses, latex gloves, puncture-resistant gloves, fluid-resistant aprons, leather aprons, and rubber boots are also provided on a task-specific basis in order to ensure exposure protection. Tyvek (or equivalent) suits that have hoods and boots are also available for use if conditions require such protection.

### **4.0 REUSABLE CONTAINERS**

Rigid reusable containers are available to Stericycle customers as a means of reducing exposure to blood borne pathogens. Reusable containers reduce the risk from leaking, soiled and/or mis-packaged boxes. Reusable containers also reduce the risk of needle-stick and sharps-type injuries.

The reusable containers are disinfected after each use. Reusable containers are disinfected as outlined in 5.1, Section XII, Control of Disease Vectors.



## **5.0 INCINERATION PROCESS**

To achieve pathogen destruction during the incineration process, all waste material is typically exposed to temperatures greater than 1,400 degrees F in the primary chamber of the incinerator. At this temperature, bloodborne pathogens are destroyed.

## **6.0 VEHICLE DECONTAMINATION**

The cargo area of transport vehicles is to be decontaminated as outlined in 5.2, Section XII, Control of Disease Vectors.

## **XIV. CLOSURE/ FINANCIAL ASSURANCE PLAN**

### **1.0 CLOSURE INTRODUCTION**

This closure plan applies to the Stericycle, Inc. Incineration Facility in Tooele County, Utah. The closure plan was prepared in accordance with the requirements of R315-302-3. The closure plan assumes a worst-case cost scenario which would occur when the maximum waste inventory is stored on-site and a third-party contractor is hired to conduct the closure. The maximum inventory on-site includes all waste items and materials which Stericycle, Inc. may have stored in the facility. The closure plan addresses the shipment offsite for treatment/disposal of the waste items and materials as well as decontamination of the process area and equipment, and all sample analyses.

This section also contains information required under R315-309 regarding financial assurance.

Decontamination of storage areas, process areas, floors, walls, and internal structures will be performed. Decontamination techniques following removal of waste inventory will utilize a combination of flushing and steam cleaning to effectively remove contaminants. Where necessary, the surface areas will be manually scrubbed or steamed and the liquid generated from this process will be collected by vacuum, sumps, and/or pumps to convey the liquid into tanks or other approved containers. The collected liquids residues will then be characterized, and if necessary, sent for treatment/disposal at state and/or EPA approved facilities.

### **2.0 CLOSURE SCHEDULE AND NOTIFICATION OF CLOSURE**

At least 60 days prior to the initiation of closure activities, Stericycle, Inc. will notify the Utah Division of Solid and Hazardous Waste that closure activities will begin on a date specified in the notice.

A detailed schedule identifying the time frame for closing the individual units at the facility will be submitted with the notification of closure. Per R315-302(3)(d), if it is determined that an amendment of the closure plan is required, a closure plan amendment will also be submitted with the notification for closure. If an amendment is submitted, closure activities will not commence until the amendment has been reviewed and approved by the Utah Division of Solid and Hazardous Waste.

### **3.0 HEALTH AND SAFETY**

Those involved in closure activities will follow the facility procedures for the protection of worker health and safety. For the purpose of this closure plan, levels of worker protection are defined as follows:

#### Level B Protection

Self-contained breathing apparatus  
Air lines and tanks  
Steel-toe, leather boots  
Boot covers  
Tyvek coveralls  
Chemically resistant gloves  
Hardhat  
Eye protection

#### Level C Protection

Air purifying respirator and cartridges  
Steel-toe, leather boots  
Boot covers  
Tyvek or cotton coveralls  
Chemically resistant gloves  
Hardhat  
Eye protection

Level D protection includes the standard health and safety equipment for construction activities.

### **4.0 CLEANUP LEVEL**

Stericycle, Inc. intends to decontaminate all the process equipment to non-contaminated levels as required by the State of Utah at the time of facility closure.

All areas of the incineration facility including the incinerator, gas cleaning train and storage areas, concrete floors, and building walls are to be decontaminated to the levels required by the State of Utah at the time of closure.

### **5.0 START OF CLOSURE**

Closure of the facility will begin on the closure date specified in the notification letter to the State of Utah. An early step in closure of the facility will be removal of waste inventory. Before final decontamination of a specific unit begins, all waste will be incinerated on-site, and/or sent to an approved medical waste treatment facility.

### **6.0 CLOSURE PROCEDURES**

The closure/decontamination procedures shall include, but not necessarily be limited to, the following activities for each type of process equipment:

#### **6.1 Shutdown and Cleaning of the Incinerator**

All incoming waste deliveries will be terminated. Waste inventories will be processed and/or sent to an approved medical waste facility. After the final charge of the incinerator, the unit will continue operating until the waste inside the primary chamber has combusted for a minimum of 2 hours. The APC equipment will continue operating until the combustion process has been completed.

When the incinerator has had the opportunity to cool down, the incinerator will be locked out for final cleaning of the primary and secondary chambers.

Any bottom ash in the quench tank will be removed. The bottom ash will be disposed of in an approved disposal facility following applicable waste characterization requirements.

## **6.2 Preparing the Incinerator for Decommissioning**

Once the final clean out has occurred, the incinerator will be disconnected from the gas feed system. The hydraulic systems will be cycled to place the equipment in the proper position and the hydraulics will be dismantled. The hydraulic oils will be collected and disposed/recycled appropriately. The air systems will be disconnected. The electrical systems will be disconnected rendering the incinerator and APC equipment inoperable.

## **6.3 Cleaning and Decommissioning the APC**

A third-party company permitted to perform such operations will clean the APC equipment. The contractor will provide a certification that the equipment has been properly decontaminated and all residual materials have been disposed of in accordance with applicable regulations.

The Filter Fabric Bag House will be pulsed to remove as much fly ash as possible. The baghouse hopper will be emptied with the resulting fly ash being treated and disposed of by an EPA approved TSDF. All electrical equipment for operation of the incinerator will be de-energized and locked out.

Once the APC equipment has been decontaminated, waste disposal will occur.

## **6.4 Decommissioning the Incinerator**

- Usable parts such as burners, blowers, control systems, thermocouples, etc. may be removed from the incinerator prior to dismantling the primary and secondary chambers.
- The stacks and associated breeching will be lowered to the ground with a crane or alternative equipment.
- Depending upon the final disposal options, the refractory will be removed and characterized. Removed scrap metal may be sent to a recycler.
- The charging platform, hydraulic cylinders, and charging door will be separated from the primary chamber.
- The ash plows in the primary chamber will be removed and recycled or disposed of.
- The refractory in the primary chamber will be removed and tested as described above.
- The ash dragon will be removed and reused or recycled.

- The quench water will be removed, characterized and disposed of accordingly.

## **6.5 Area Cleaning**

The concrete pad and surrounding area will be cleaned.

Gas lines and electrical lines to the incinerator will be removed back to the gas meter and the electrical panel.

Residual materials such as sodium bicarbonate, hydraulic fluids, caustic soda, etc. will be utilized or disposed of at an approved facility.

## **7.0 SAMPLING AND ANALYSIS**

Sampling and analytical testing during the closure performance period shall conform to applicable requirements.

## **8.0 CLOSURE COST ESTIMATES**

The total cost to close the facility using third party cost in 2015 dollars is estimated to be \$500,000.

## **9.0 POST-CLOSURE PLAN**

As discussed above, Stericycle, Inc. will fully decontaminate all waste management units of the facility to non-contaminated status except where noted. Contaminated items that cannot be decontaminated will be disposed of at an approved hazardous waste or medical waste facility as appropriate. It is therefore not anticipated that any post-closure monitoring of the site will be required. In addition, this site is not used for land-based or water-based disposal, as such, a post-closure plan is not required under Utah Department of Environmental Quality regulation R315-302-3(1).

## **10.0 CLOSURE COSTS AND FINANCIAL ASSURANCE**

To satisfy financial assurance closure cost requirements, Stericycle, Inc will establish financial assurance in accordance with R315-309. The mechanism for compliance with financial assurance requirements will be selected consistent with the options presented in R315-309 and the relevant proof will be submitted prior to the facility receiving waste.

## **11.0 FINAL INSPECTION BY REGULATOR AGENCIES**

A final inspection will be scheduled with regulatory agencies upon final closure of the facility. Upon completion of closure activities, a professional engineer registered in the state of Utah will submit certification that the facility was closed in accordance with the closure plan.



## **APPENDIX B**

### **SITE ENGINEERING DRAWINGS**

FILE NAME: H:\Projects\370 - Stericycle\01.130 - Site Plan & CUP\CAD\Working Drawings\STRC Site Plan Feb 2015.dwg  
FILE DATE: 2/20/2015 RBS

10.07



PROJECT ENGINEER

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DRAFTED	RBS	2	
CHECKED		1	
DATE	FEB 2015	NO.	DATE

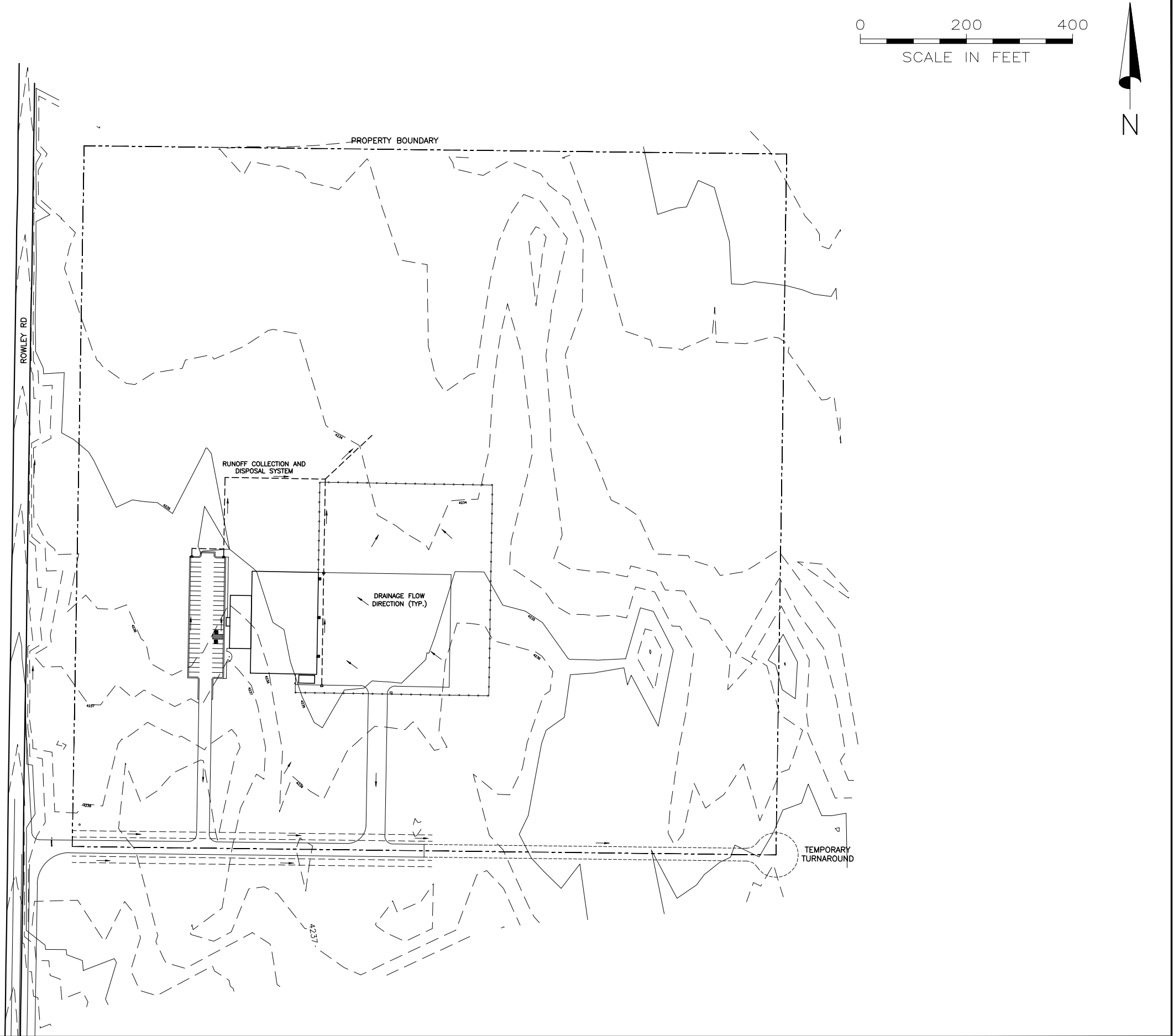
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SCALE  
1"=200'

STERICYCLE, INC.

TOOELE COUNTY FACILITY  
PLOT PLAN MAP

SHEET  
1  
370.01.130



FILE NAME: H:\Projects\370 - Stericycle\01.130 - Site Plan & CUP\CAD\Working Drawings\STRC Site Plan Feb 2015.dwg  
FILE DATE: 2/20/2015 RBS

10/07



PROJECT ENGINEER

DESIGNED	GLJ/RBS	3	
DRAFTED	RBS	2	
CHECKED		1	
DATE	FEB 2015	NO.	DATE

REVISIONS

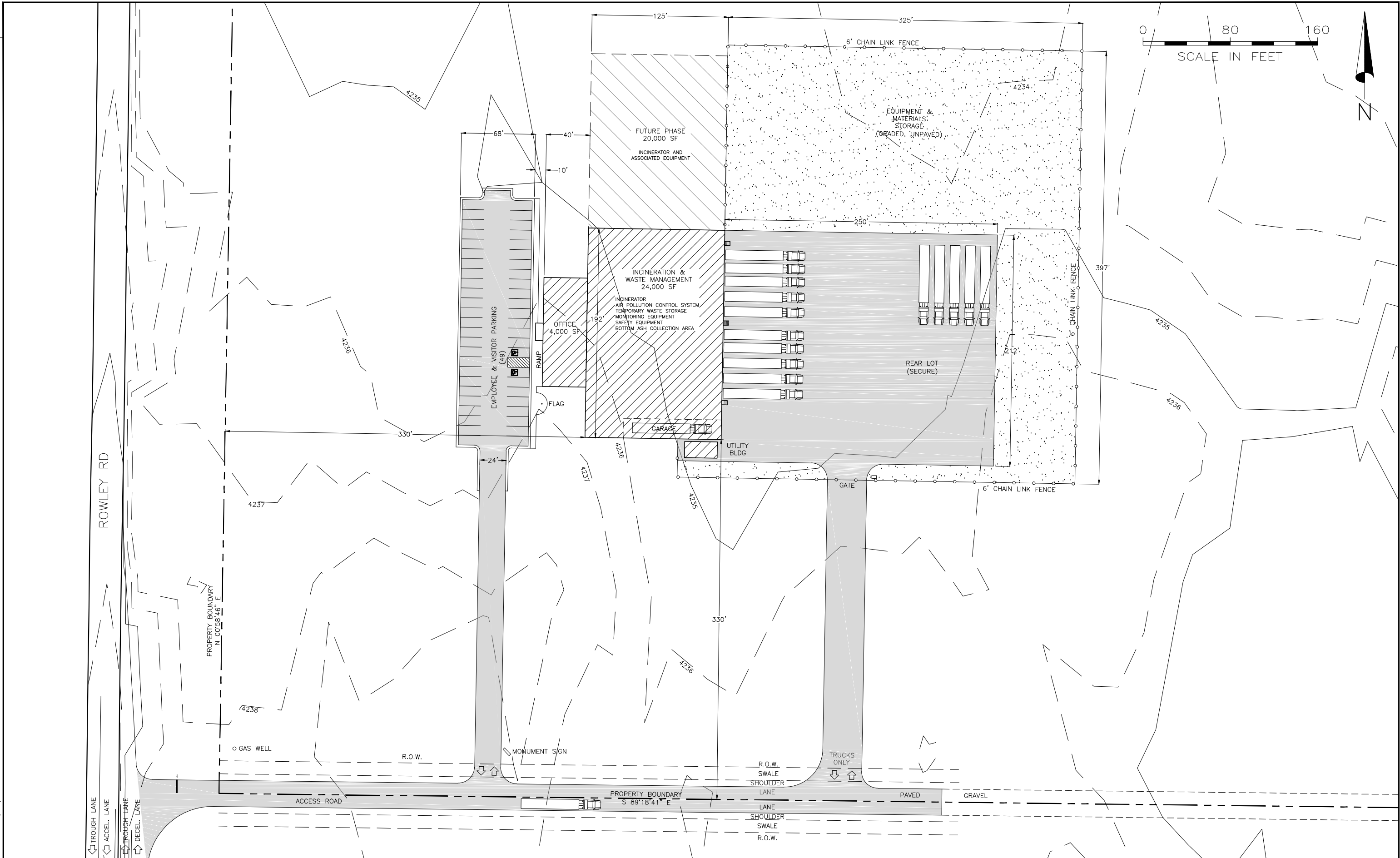
BY APVD.

SCALE  
1"=80'

STERICYCLE, INC.

TOOELE COUNTY FACILITY  
SITE PLAN

SHEET  
2  
370.01.130



## **APPENDIX C**

### **INCINERATION PROCESS AND AIR POLLUTION CONTROL SYSTEM**

Stericycle, inc.  
Medical Waste Incinerator  
Tooele County, UT



# **Engineering Report and Process Description with Plans, Specifications and Calculations**

**Stericycle, Inc.**

**137589-PR-003**

**AMFW Contract No. 186-137589-02**

Rev	Date	By	Reviewed	Reviewed	Reviewed	Remarks
A	2/16/2015	B. Beckstrom	D. Leavitt			To client for information / planning
B	2/17/2015	B. Beckstrom	D. Leavitt			For information / planning
C	2/17/2015	B. Beckstrom	D. Leavitt			For information / planning
D	2/19/2015	B. Beckstrom	D. Leavitt			For information / planning
E	2/25/2015	B. Beckstrom	D. Leavitt			For information / planning
F						

Stericycle, inc.  
Medical Waste Incinerator  
Tooele County, UT



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### **APPENDICES:**

**A - BLOCK FLOW DIAGRAM**



Stericycle, inc.  
Medical Waste Incinerator  
Tooele County, UT



## **1. BACKGROUND**

Stericycle, Inc. (Stericycle) currently operates a commercial medical waste incineration facility in North Salt Lake City, UT utilizing stepped hearth incinerator technology. Currently, Stericycle is in the planning stage to construct a new state-of-the-art incineration facility in Tooele County, UT. Stericycle requested Amec Foster Wheeler (AMECFW) to provide engineering support to assist in preparing permit submittals for the new facility.

## **2. PROCESS DESCRIPTION**

The incineration portion of the proposed facility will consist of a 2-stage stepped hearth primary combustion chamber followed by a secondary combustion chamber (SCC).

Given the proposed location of this facility, in the arid conditions of Tooele County, UT, reducing the amount of make-up water required by the plant and the amount of waste water produced by the plant is important.

To reduce the amount of make-up water required by the process, it was decided to complete the process design including a Waste Heat Recovery Boiler. The Waste Heat Recovery Boiler cools the SCC flue gas by extracting heat to generate steam which can be used and collected as condensate and returned to the boiler, thereby significantly reducing the need for make-up water in the process. The block flow diagram of the process (Drawing Number 137589-0000-D-PR50-022) is in Appendix A.

The following is a description of this process.

The incinerator system is designed to thermally treat approximately 2000 lb/hr (24 tons/day) of waste and generates by-product streams of steam, sterile bottom ash, bag house fly-ash solids, waste gray water, and a treated off-gas from the stack. The steam by-product may be used for miscellaneous plant heating requirements. The associated gas cleaning train (i.e., air pollution control system (APCS)) consists of components to enable the discharged off-gas to meet all necessary regulatory requirements regarding stack emissions.

### **2.1 Process Plant System Components**

The incinerator system includes the following process components:

- Waste Receiving and Feeding
- Step Hearth Furnace (Primary Combustion Chamber)
- Secondary Combustion Chamber
- Selective Non-Catalytic Reduction System (SNCR)
- Waste Heat Boiler
- Evaporative Cooler

- Dry Sorbent Injection
- Activated Carbon Injection
- Bag House and Ash Handling
- Saturator
- Wet Gas Scrubber
- Induced Draft Fan
- Inline Heater
- Carbon Bed (or equivalent)
- Stack and Stack Flue Gas Monitoring

## 2.2 Waste Receiving and Feeding

Medical waste is delivered to the plant by truck in single-use plastic containers and recyclable enclosed bins which are unloaded and either placed in the storage area for later processing, or set out near the feed apron to be processed directly. The plastic containers are placed directly into the feed apron loading bin. The recyclable bins are opened, the contents emptied into the feed apron loading bin, and the containers manually rinsed out, recovered, and placed in the return load-out area.

## 2.3 Incineration System

- Step Hearth Furnace (Primary Combustion Chamber)
- Secondary Combustion Chamber

A two-stage incineration system first burns and/or thermally sanitizes waste in a Step Hearth Furnace (i.e., the Primary Combustion Chamber) which is followed by the Secondary Combustion Chamber to fully combust the resulting off gas at temperatures of approximately 1800°F to 2000°F. The furnaces reduce the waste feed volume, by over 70%, on a weight basis (over 95 % on a volume basis), to a hot ash that discharges from the Step Hearth Furnace into the Wet Ash Conveyor Quench Tank where it is water quenched. The quenched ash is recovered periodically from the Quench Tank using the Wet Ash Conveyor.

Combustion air for the furnace is drawn from the process area using Forced Draft (F.D.) Fans. Flue gas is drawn from the Secondary Combustion Chamber through the Waste Heat Boiler followed by the APCS using the Induced Draft (I.D.) Fan prior to being discharged to atmosphere through the stack.

## 2.4 Waste Heat Recovery and Particulate Capture

- Selective Non-catalytic Reduction (SNCR) of NO<sub>x</sub>
- Waste Heat Boiler
- Evaporative Cooler
- Dry Sorbent (i.e., Sodium Bicarbonate, Lime, or Equivalent) Injection
- Powdered Activated Carbon Injection

Stericycle, inc.  
Medical Waste Incinerator  
Tooele County, UT



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- Bag House and Ash Handling

Aqueous ammonia or urea is injected into the flue gas exiting the secondary chamber via an atomizing water spray nozzle, where the conditions are suitable for the selective non-catalytic reduction of NO<sub>x</sub> (SNCR).

The flue gas flows through the firetubes of the waste heat boiler. As the flue gas cools, shellside water is heated and boiled to steam.

Heat recovery in the Waste Heat Boiler is subsequently followed by quenching the flue gas stream in the Evaporative Cooler. This is accomplished by spraying water into the Evaporative Cooler to quench the flue gas temperature to about 350°F by evaporation of the water spray. The cooled flue gas with entrained dry particulate exits the Evaporative Cooler through a side discharge duct.

Powdered sodium bicarbonate, lime, or equivalent (dry sorbent) and powdered activated carbon are sequentially injected into the flue gas duct that connects the Evaporative Cooler with the Bag House. The dry sorbent and activated carbon are carried with the flue gas into the Bag House and are captured, along with the flyash particulate from the incinerator on the Bag House fabric filters. The dry sorbent captures and absorbs hydrogen chloride, sulfur dioxide, and other acid gases from the flue gas. The activated carbon also captures and adsorbs dioxins and furans. The Bag House removes these entrained particulates from the flue gas. Captured solids are discharged out the bottom of the Bag House through rotary air locks into receiving containers designed for dust containment (tote bags, drums, etc.). The containers of fly ash and dry sorbent/carbon solids are secured and shipped to an approved landfill. The flue gas passes through the fabric filter and exits the Bag House to proceed to subsequent stages of air pollutant removal.

## 2.5 Gas Saturation and Scrubbing

- Saturator
- Wet Gas Scrubber
- Scrubber Recirculation
- NaOH Feed

Flue gas from the Bag House at approximately 350°F flows into the Saturator where the gas contacts recirculated scrubbing water to cool the flue gas to the water saturation temperature – approximately 144°F. The cooling is accomplished by evaporation of part of the saturation water. Most of the saturation water remains as liquid and disengages from the flue gas to drain through the interconnecting duct into the Wet Gas Scrubber.

The water-saturated flue gas also flows through the interconnecting duct into the lower side of the Wet Gas Scrubber. The Wet Gas Scrubber contains a packed section

above the gas inlet. The saturated flue gas flows upward through the packing where it contacts cooled recirculated scrubbing water. A solution of sodium hydroxide or equivalent is periodically added to the recirculating scrubber water to maintain moderately alkaline conditions in the scrubber water. The alkaline scrubbing water absorbs residual acid gas constituents in the flue gas. The scrubber water flows out the bottom of the Wet Gas Scrubber to the suction of the Scrubber Water Recirculation Pump. The absorbed acid gas constituents react with the sodium hydroxide or equivalent in the scrubber water to produce dissolved salt constituents in the water. The recirculated scrubber water flows through an air cooled heat exchanger before reentering the scrubber. The cooled scrubber water cools the flue gas by about 10 F and condenses water vapor from the flue gas stream.

A small flow of the recirculating scrubber water is purged periodically to the Gray Water Holding Tank. The contents of the Gray Water Holding Tank are periodically pumped into a tanker truck to be hauled away for off-site water treatment and/or disposal.

## 2.6 Gas Discharge to Atmosphere

- Induced Draft Fan
- Inline Heater
- Carbon Bed (or equivalent)
- Stack and Stack Flue Gas Monitoring

Scrubbed flue gas exits the top of the Wet Scrubber, then flows to the Induced Draft (ID) fan which is the motive driver for the flow of flue gas from the incinerator to the stack. The ID Fan pulls the flue gas from the exit of the Wet Scrubber and discharges it to the In-line Reheater. The ID Fan also imparts some heating to the flue gas to help the inline heater to ensure that condensation is reduced within the Carbon Bed.

The Inline Reheater further raises the temperature of the flue gas above the water saturation – typically 10-20°F above the inlet temperature of the flue gas. Heat is provided by indirect heating using steam from the Waste Heat Boiler.

The heated flue gas is then pushed through the Carbon Bed (or equivalent) to remove any traces of dioxins/furans and/or mercury. From the Carbon Bed, the flue gas flows to the stack.

The stack height is specified to achieve the required discharge requirements set by the State of Utah. Additionally, access ports are available for testing and/or monitoring of pollutant levels in the discharged flue gas.

## 2.7 Auxiliary Process Plant Systems

- Refuse Handling
- Ash Handling

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- Chemical Feed

Ash conveyed out with the Wet Ash Conveyor is dumped into the concrete and cement-lined Ash Pit.

At the ash pit, mechanical conveyance, such as drag hoes, conveyors and /or similar mechanisms are used to transfer the ash into containers for removal to a commercial landfill.

Dry sorbent and powdered activated carbon will be fed to the APCS. Sodium hydroxide (or equivalent) will be fed to the wet scrubber.

## 2.8 Utility Systems

- Raw Water
- Waste Water
- Natural Gas
- Compressed Air for Instrument Air

Water needed for potable consumption for employees, and for process use, will be hauled from off-site and stored in tanks, and supplied by pumping systems

Waste water generated at the site is minimized by using it to cool the flue gas stream in the evaporative cooler upstream of the baghouse, and by cooling the solid ash stream before disposal in the secure landfill. Waste water can also be further reduced by evaporation using steam from the waste heat boiler. Any excess waste water will be trucked off-site for disposal. Evaporated waste water may be recovered via condensation and used as process water feed.

Natural Gas is supplied to the site by pipeline from the area natural gas supplier. The pressure is reduced at the site and is used primarily for firing in the Step Hearth Incinerator and Secondary Combustion Chamber. It is additionally used for building heating and culinary water heating.

The Compressed Air System consists of two air compressors. One compressor feeds the single air receiver, pre-filters, dryers and after filters. The clean, dry air feeds all instruments plus all plant air users. The other compressor is mainly used to supply dry air to the flue gas cleaning system. This air is primarily used to atomize the spray into the Evaporative Cooler and for utility stations, but can also supplement the instrument air from the other compressor.

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**APPENDIX A**

**BLOCK FLOW DIAGRAM**

Dwg. # 137589-0000-D-PR50-0022





**BLOCK FLOW DIAGRAM  
WASTE HEAT BOILER OPTION  
STERICYCLE, INC.  
MEDICAL WASTE INCINERATOR  
TOOELE COUNTY, UTAH**

THESE PROCESS DATA ARE FOR DESIGN PURPOSES ONLY.  
WHILE USEFUL AS A GUIDE TO OPERATION, THEY DO NOT  
NECESSARILY REPRESENT EXACT OPERATING CONDITIONS



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DATE:

PROJECT No.

186-137589-02

DRAWING No.

137589-0000-D-PR50-0022

REV. No.

[illegible]

## **APPENDIX D**

### **AIR QUALITY PERMIT SUBMITTAL DOCUMENTATION**



**FEB 26 2015**

February 26, 2015

Bryce Bird  
Director  
Utah Division of Air Quality  
P.O. Box 144820  
Salt Lake City, UT 84114-4820

**Subject: Stericycle, Inc. – Tooele County NOI Application Submittal**

Dear Mr. Bird:

Stericycle, Inc. (Stericycle) is proposing to construct a hospital, medical, and infectious waste incinerator (HMIWI) facility in Tooele County, Utah (Tooele facility). The incinerator operation will be subject to the U.S. Environmental Protection Agency's (U.S. EPA's) Standards of Performance for New Stationary Sources: Hospital/Medical/Infectious Waste Incinerators codified at 40 CFR Part 60, Subpart Ec as amended on October 6, 2009.

Stericycle is submitting this Notice of Intent (NOI) application in accordance with Settlement Agreement No. 2013051501 and in accordance with the completed NOI checklist provided by the Utah Division of Air Quality (UDAQ) (attached).

Thank you for your attention to this submittal. If you have any questions, please contact me at (801) 936-1260, ext. 17.

Sincerely,  
**Stericycle, Inc.**

A handwritten signature in blue ink that reads "Jay Vance".

Jay Vance  
Environmental Quality Manager

cc: Jon Black – UDAQ  
Al Burson – Stericycle  
Dale Rich – Stericycle  
Lindsey Kroos – ALL4

FEB 26 2015

DIVISION OF AIR QUALITY

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# NOTICE OF INTENT APPLICATION STERICYCLE, INC.

## TOOELE COUNTY, UTAH FACILITY

---

**Submitted By:**



**Stericycle – Tooele County**  
9250 Rowley Road  
Tooele County, Utah 84029

**Submitted To:**



**Utah Department of Environmental Quality**  
**Division of Air Quality**  
P.O. Box 144820  
Salt Lake City, Utah 84114-4820

**Prepared by:**

**Stericycle, Inc. and**



*Kristin M Gordon*  
Kristin M Gordon  
2015.02.22  
16:37:17 -06'00'

**Submitted: February 2015**

## **APPENDIX E**

# **GEOTECHNICAL INVESTIGATION**



**GEOTECHNICAL INVESTIGATION  
PROPOSED STERICYCLE FACILITY  
9250 ROWLEY ROAD  
TOOELE COUNTY, UTAH**

**PREPARED FOR:**

**HANSEN ALLEN & LUCE, INC.  
6771 SOUTH 900 EAST  
MIDVALE, UTAH 84047**

**ATTENTION: GORDON JONES**

**PROJECT NO. 1140262**

**JANUARY 12, 2015**



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### FIGURES

LOCATIONS OF EXPLORATORY BORINGS  
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CONSOLIDATION TEST RESULTS  
SUMMARY OF LABORATORY TEST RESULTS

FIGURE 1  
FIGURES 2-4  
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## EXECUTIVE SUMMARY

1. The subsurface soil encountered at the site consists of approximately 2 to 3 ½ feet of silty sand overlying clay in Borings B-7, B-8, B-9 and B-A1 through B-A6. Clay was generally encountered at the ground surface in the other boring, however, there were some sand layers in the upper clay in many of these borings. Silty sand was encountered below the clay at depths ranging from approximately 7 to 12 feet and extends the full depth of Borings B-1, B-2, B-4, B-7, B-8 and Borings B-A2 through B-A6. Clay was encountered below the silty sand in Borings B-3, B-5, B-6, B-9 and B-A1 at depths ranging from approximately 19 to 26 ½ feet. Boring B-A1 extended the maximum depth and encountered silty sand below the lower clay at a depth of approximately 39 feet and the sand extended the full depth of this boring, approximately 47 feet.
2. Subsurface water was encountered in the borings at depths ranging from approximately 9 ½ to 15 feet. Slotted PVC pipe was installed in the borings to facilitate future measurement of the water level. Fluctuation of the water level can be expected over time. An evaluation of such water level fluctuations is beyond the scope of this report.
3. The site is suitable for the proposed construction. The buildings may be supported on spread footings bearing on the undisturbed natural soil or on compacted structural fill. Footings bearing on natural undisturbed soil may be designed for a net allowable bearing pressure of 1,200 pounds per square foot (psf). Footings bearing on at least 2 and 4 feet of structural fill may be designed for net allowable bearing pressures of 2,000 and 3,500 psf, respectively.
4. The upper soil consists predominantly of clay in many areas of the site and can result in construction equipment access difficulties when the clay is very moist to wet such as in the winter and spring or at times of prolonged rainfall. Placement of 1 to 2 feet of gravel will improve access for construction equipment when the upper soil is very moist to wet.
5. Sulfate resistant cement is recommended for concrete placed in contact with the natural soil because of the high sulfate content of the soil.
6. Geotechnical information related to foundations, subgrade preparation, pavement and materials is included in the report.

## SCOPE

This report presents the results of a geotechnical investigation for the proposed Stericycle facility to be constructed at approximately 9250 Rowley Road in Tooele County, Utah. The report presents the subsurface conditions encountered and recommendations for foundations and pavement. The study was conducted in general accordance with our proposal dated July 15, 2014.

Field exploration was conducted to obtain information on the subsurface conditions. Samples obtained from the field investigation were tested in the laboratory to determine physical and engineering characteristics of the on-site soil. Information obtained from the field study and laboratory was used to define conditions at the site for our engineering analysis and to develop recommendations for the proposed foundations and pavement.

This report has been prepared to summarize the data obtained during the study and to present our conclusions and recommendations based on the proposed construction and the subsurface conditions encountered. Design parameters and a discussion of geotechnical engineering considerations related to construction are included in the report.

## SITE CONDITIONS

At the time of our field study there were no permanent structures or pavement on the site.

The ground surface is relatively flat and generally slopes gently down toward the northeast. There are raised areas of sand dunes through the central and western portions of the property (See Figure 1).

Vegetation at the site consists of grass and brush.

There is undeveloped land similar to this site on the surrounding properties. Rowley Road borders the west edge of the property and is a two-lane, asphalt-paved road. There is a landfill in the distance southwest of the site.

## **FIELD STUDY**

The field study was conducted on December 15, 16 and 17, 2014. Nine borings were drilled throughout the site and six additional borings were drilled in the area originally planned for the proposed building. Three borings were drilled for percolation testing purposes in the southeast portion of the property. The approximate locations of the borings are presented on Figure 1. The borings were drilled using 8-inch diameter hollow-stem auger powered by a truck-mounted drill rig. The borings were logged and soil samples obtained by an engineer from AGECEC. Logs of the subsurface conditions encountered in the borings are graphically shown on Figures 2, 3 and 4 with legend and notes on Figure 5.

## **PERCOLATION TESTING**

Percolation tests were performed at the locations indicated on Figure 1. Percolation Test 1, 2 and 3 were performed in borings drilled to depths of approximately 6, 5 and 4 feet, respectively. The soil in the bottom approximately 2 feet of each of the borings was sampled and the samples tested for the percent passing the No. 200 sieve. Results of the tests indicate 35, 12 and 24 percent passing the No. 200 sieve for percolation test Borings 1, 2 and 3, respectively.

Each of the percolation test borings had slotted 1 ½ inch diameter PVC pipe installed in them. The borings were backfilled with sand and the boring filled with water the day prior to testing. Percolation tests were performed by placing water in each of the borings, with the depth of water in percolation Borings 1, 2 and 3 at approximately 1.7, 1.4 and 1.6 feet

below the ground surface, respectively. The tests were performed several times to obtain relatively consistent percolation rate measurements. Percolation rates of 4.3, 0.2 and 8.3 minutes per inch were measured for the percolation tests in Borings 1, 2 and 3, respectively.

## **SUBSURFACE CONDITIONS**

The subsurface soil encountered at the site consists of approximately 2 to 3½ feet of silty sand overlying clay in Borings B-7, B-8, B-9 and B-A1 through B-A6. Clay was generally encountered at the ground surface in the other boring, however, there were some sand layers in the upper clay in many of these borings. Silty sand was encountered below the clay at depths ranging from approximately 7 to 12 feet and extends the full depth of Borings B-1, B-2, B-4, B-7, B-8 and Borings B-A2 through B-A6. Clay was encountered below the silty sand in Borings B-3, B-5, B-6, B-9 and B-A1 at depths ranging from approximately 19 to 26½ feet. Boring B-A1 extended the maximum depth and encountered silty sand below the lower clay at a depth of approximately 39 feet and the sand extended the full depth of this boring, approximately 47 feet.

A description of the various soils encountered in the borings follows:

Lean Clay - The clay contains occasional silt and sand layers with more numerous sand layers in the upper several feet of some borings. The clay is very soft at depth and medium stiff to very stiff above the water level. The clay is moist to wet, brown to gray and contains some cemented particles.

Laboratory tests performed on samples of the clay indicate it has natural moisture contents ranging from 34 to 42 percent and natural dry densities ranging from 77 to 85 pounds per cubic foot (pcf). Results of consolidation tests performed on samples of the clay indicate that it will compress a small to moderate amount with the addition of light to moderate loads. Results of the consolidation tests are

presented on Figures 6 and 7. Unconfined compressive strengths of 2,185 and 2,865 pounds per square foot (psf) were measured for samples of the clay.

Silty Sand - The sand contains occasional clay and silt layers. It medium to very dense, moist to wet and brown to gray.

Laboratory tests performed on samples of the silty sand indicate it has natural moisture contents ranging from 7 to 18 percent and natural dry densities ranging from 85 to 113 pcf.

Laboratory test results are summarized on Table I and included on the boring logs.

## **SUBSURFACE WATER**

Subsurface water was encountered in the borings at depths ranging from approximately 9 ½ to 15 feet below the ground surface based on measurements taken on December 18, 2014. Slotted PVC pipe was installed in the borings to facilitate future measurement of the water level. Fluctuation of the water level can be expected over time. An evaluation of such water level fluctuations is beyond the scope of this report.

## **PROPOSED CONSTRUCTION**

We understand that the proposed building will be a tall, single-story structure with slab-on-grade floor. We have assumed maximum column loads of 100 kips and maximum wall loads of 4 kips per lineal foot.

We understand that some truck access areas and parking for both trucks and employees will be constructed at the site. We have assumed traffic for the employee parking area to consist predominantly of car traffic. Three pavement sections were calculated for truck traffic areas assuming 5, 10 and 20 semis per day.



If the proposed construction, anticipated building loads or traffic is significantly different from what is described, we should be notified so that we can reevaluate the recommendations given.

## RECOMMENDATIONS

Based on the subsoil conditions encountered, laboratory test results, and the proposed construction, the following recommendations are given:

### A. Site Grading

We anticipate that there will be relatively small amounts of cut and fill when developing the site.

Significant settlement can be expected from the load of the fill due to the underlying compressible clay if the site is raised more than approximately 3 feet. If the site will be raised more than 3 feet over large areas, the fill should be placed at least 2 to 3 months prior to construction of the elements of building that may be sensitive to differential settlement and the settlement should be monitored to determine if a longer or shorter waiting period is appropriate. The rate of settlement could be increased by surcharging the site with a greater thickness of fill.

#### 1. Subgrade Preparation

Prior to placing grading fill or base course, unsuitable fill, organics, topsoil, debris and other deleterious materials should be removed. The subgrade should be proof-rolled to identify soft areas. Soft areas should be removed and replaced with granular fill.

The upper soil in some areas of the site consists of clay and will be easily disturbed when it is very moist to wet such as in the winter or spring or at times of prolonged rainfall or irrigation. Placement of 1 to 2 feet of gravel will improve site access when the subgrade consists of very moist to wet clay and may be needed to facilitate pavement construction.

## 2. Excavation

Excavation at the site can be accomplished with typical excavation equipment. A flat cutting edge should be used when excavating for foundations to reduce disturbance of the bearing material. Low ground pressure equipment or equipment supported outside of excavation areas may be needed for excavations extending down to the very moist to wet clay.

Excavations extending below the free-water level should be dewatered. The water level should be maintained below the base of excavations during initial fill placement. Free-draining gravel should be used as fill below the original free-water level. Consideration should be given to using a support fabric between the free-draining gravel and the natural soil.

## 3. Compaction

Compaction of materials placed at the site should equal or exceed the minimum densities as indicated below when compared to the maximum dry density as determined by ASTM D 1557.

Fill To Support	Compaction
Foundations	≥ 95%
Concrete Flatwork and Pavement	≥ 90%
Landscaping	≥ 85%
Retaining Wall Backfill	85 - 90%

To facilitate the compaction process, the fill should be compacted at a moisture content within 2 percent of the optimum moisture content.

The base course should be compacted to at least 95 percent of the maximum dry density as determined by ASTM D 1557.

Fill and pavement materials placed for the project should be frequently tested for compaction.

#### 4. Materials

Materials placed as fill to support foundations should be non-expansive granular soil. The natural sand exclusive of organics, debris and other deleterious material is suitable for use as structural fill if it meets the criteria given below for imported structural fill. The natural clay is not recommended for use as structural fill, but may be considered for use as site grading fill outside the proposed building area or as utility trench or wall backfill if the organics, debris and other deleterious materials are removed or it may be used in landscape areas. The moisture of the soil used as fill should be adjusted to within 2 percent of optimum. Drying of the soil may not be practical during cold or wet periods of the year.

Listed below are materials recommended for imported structural fill.

Fill to Support	Recommendations
Footings	Non-expansive granular soil Passing No.200 Sieve < 35% Liquid Limit < 30% Maximum size 4 inches
Floor Slab (Upper 4 inches)	Sand and/or Gravel, Passing No. 200 Sieve < 5% Maximum size 2 inches
Slab Support	Non-expansive granular soil Passing No. 200 Sieve < 50% Liquid Limit < 30% Maximum size 6 inches

5. Drainage

The ground surface surrounding the proposed building should be sloped away from the building in all directions. Roof downspouts and drains should discharge beyond the limits of backfill.

The collection and diversion of drainage away from the pavement surface is important to the satisfactory performance of the pavement section. Proper drainage should be provided.

If truck docks or floors extend below original grade they should be provided with a perimeter drain.

**B. Foundations**

1. Bearing Material

With the proposed construction and the subsurface conditions encountered, the proposed building may be supported on spread footings bearing on the undisturbed natural soil or on compacted structural fill. If structural fill is placed below footings, the structural fill should extend down to the undisturbed natural soil and out away from the edge of the footings at least a distance equal to the depth of fill beneath footings.

Unsuitable fill, topsoil, organics, debris and other deleterious materials should be removed from below the proposed footing areas.

2. Bearing Pressure

Spread footings bearing on the natural undisturbed soil or on compacted structural fill may be designed using a net allowable bearing pressure of 1,200 psf. Footings bearing on at least 2 and 4 feet of structural fill may be designed for net allowable bearing pressures of 2,000 and 3,500 psf, respectively.

Footings should have a minimum width of 2 feet and a minimum depth of embedment of 1 foot.

3. Temporary Loading Conditions

The allowable bearing pressure may be increased by one-half for temporary loading conditions such as wind or seismic loads.

4. Settlement

Based on the subsoil conditions encountered and the assumed building loads, we estimate total and differential settlements will be less than 1 inch and  $\frac{3}{4}$  inch, respectively, for footings designed as indicated above. This assumes that the site grading fill has been placed well in advance of building construction.

5. Frost Depth

Exterior footings and footings beneath unheated areas should be placed at least 30 inches below grade for frost protection.

6. Foundation Base

The base of footing excavations should be cleared of loose or deleterious material prior to structural fill or concrete placement.

7. Construction Observation

A representative of the geotechnical engineer should observe footing excavations prior to structural fill or concrete placement.

**C. Concrete Slab-on-Grade**

1. Slab Support

Concrete slabs may be supported on the undisturbed natural soil or on compacted structural fill.

Unsuitable fill, topsoil, organics, debris and other deleterious materials should be removed from below proposed slab areas.

2. Underslab Sand and/or Gravel

A 4-inch layer of free draining sand and/or gravel (less than 5 percent passing the No. 200 sieve) should be placed below the concrete slabs for ease of construction and to promote even curing of the slab concrete.

3. Vapor Barrier

A vapor barrier should be placed under the concrete floor if the floor will receive an impermeable floor covering. The barrier will reduce the amount of water vapor passing through the slab to the floor covering.

**D. Lateral Earth Pressures**

1. Lateral Resistance for Footings

Lateral resistance for spread footings placed on the natural soil or on compacted structural fill is controlled by sliding resistance between the footing and the foundation soils. A friction value of 0.35 may be used in design for ultimate lateral resistance.

2. Subgrade Walls and Retaining Structures

The following equivalent fluid weights are given for design of subgrade walls and retaining structures. The active condition is where the wall moves away



from the soil. The passive condition is where the wall moves into the soil and the at-rest condition is where the wall does not move. The values listed below assume a horizontal surface adjacent the wall.

Soil Type	Active	At-Rest	Passive
Clay & Silt	50 pcf	65 pcf	250 pcf
Sand & Gravel	40 pcf	55 pcf	300 pcf

### 3. Seismic Conditions

Under seismic conditions, the equivalent fluid weight should be increased by 18 pcf for the active condition and 3 pcf for the at-rest condition and decreased by 18 pcf for the passive condition. This assumes a peak ground acceleration of 0.21g which represents a 2 percent probability of exceedance in a 50-year period (IBC, 2012).

### 4. Safety Factors

The values recommended above for active and passive conditions assume mobilization of the soil to achieve the soil strength. Conventional safety factors used for structural analysis for such items as overturning and sliding resistance should be used in design.

## E. **Seismicity, Liquefaction and Faulting**

### 1. Seismicity

Listed below is a summary of the site parameters for the International Building Code 2012:

- |    |   |       |
|----|---|-------|
| a. | Site Class  | E     |
| b. | Short Period Spectral Response Acceleration, $S_s$      | 0.56g |
| c. | One Second Period Spectral Response Acceleration, $S_1$ | 0.20g |

2. Liquefaction

The sand below the water level is sufficiently dense that liquefaction is not considered a significant hazard at this site.

3. Faulting

The closest mapped fault trace to the site associated with a potentially active fault zone is the Stansbury fault zone located approximately 11 ½ miles to the south (Black and others, 2003).

**F. Water Soluble Sulfates**

One sample of the natural soil was tested in the laboratory for water soluble sulfate content. Results of the test indicate 0.32 percent water soluble sulfate in the sample tested. Based on the results of test and published literature, Type V sulfate resistant cement, a maximum water-cementitious material ratio of 0.45 and a minimum compressive strength of 4,500 pounds per square inch are recommended for concrete placed in contact with natural soil.

**G. Pavement**

Based on the subsoil conditions encountered, laboratory test results and the assumed traffic as indicated in the Proposed Construction section of the report, the following pavement support recommendations are given:

1. Subgrade Support

The near surface soil consists predominantly of clay. We have assumed a CBR value of 2 ½ percent which assumes a clay subgrade.

2. Pavement Thickness

Based on the subsoil conditions, assumed traffic, a design life of 20 years for flexible pavement and 30 years for rigid pavement, and methods presented

by the Utah Department of Transportation, the following pavement sections are calculated for various traffic alternatives.

Traffic	Rigid Pavement	Flexible Pavement		
	Portland Cement Concrete Thickness	Asphaltic Concrete Thickness	Base Course Thickness	Granular Borrow Thickness
Passenger vehicles, occasional delivery trucks, 5 garbage trucks per week	— 5"	3" —	6" —	— —
5 semis/day	— 5 ½ "	3 ½ " —	6" —	14" —
10 semis/day	— 6 ½ "	4" —	6" —	14" —
20 semis/day	— 7 ½ "	4 ½ " —	6" —	16" —

Other pavement sections could be provided using different combinations of pavement materials and traffic loads.

### 3. Pavement Materials and Construction

#### a. Flexible Pavement (Asphaltic Concrete)

The pavement materials should meet the specifications for the applicable jurisdiction for gradation and quality. Other materials may be considered for use in the pavement section. The use of other materials may result in the need for different pavement material thicknesses.

b. Rigid Pavement (Portland Cement Concrete)

The pavement thickness assumes that the pavement will have aggregate interlock joints and that a concrete shoulder or curb will be provided.

Pavement materials should meet the specifications for the applicable jurisdiction. The pavement thicknesses indicated above assume that the concrete will have a 28-day compressive strength of 4,000 pounds per square inch. Concrete should be air entrained with approximately 6 percent air. Maximum allowable slump will depend on the method of placement but should not exceed 4 inches.

4. Jointing

Joints for concrete pavement should be laid out in a square or rectangular pattern. Joint spacings should not exceed 30 times the thickness of the slab. The joint spacings indicated should accommodate the contraction of the concrete and under these conditions steel reinforcing will not be required. The depth of joints should be approximately one-fourth of the slab thickness.

**H. Preconstruction Meeting**

A preconstruction meeting should be held with representatives of the owner, project architect, geotechnical engineer, general contractor, earthwork contractor and other members of the design team to review construction plans, specifications, methods and schedule.

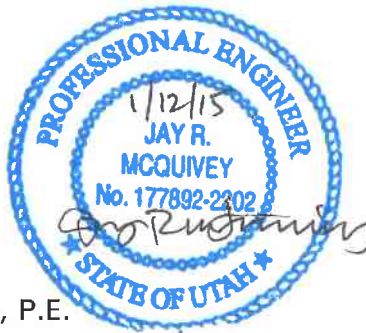
## LIMITATIONS

This report has been prepared in accordance with generally accepted soil and foundation engineering practices in the area for the use of the client for design purposes. The conclusions and recommendations included within the report are based on the information obtained from the borings drilled and the data obtained from laboratory testing. Variations in the subsurface conditions may not become evident until excavation or additional exploration is conducted. If the subsurface conditions or groundwater level is found to be significantly different from what is described above, we should be notified to reevaluate the recommendations given.

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, INC.

*Douglas R. Hawkes* by rs

Douglas R. Hawkes, P.E., P.G.



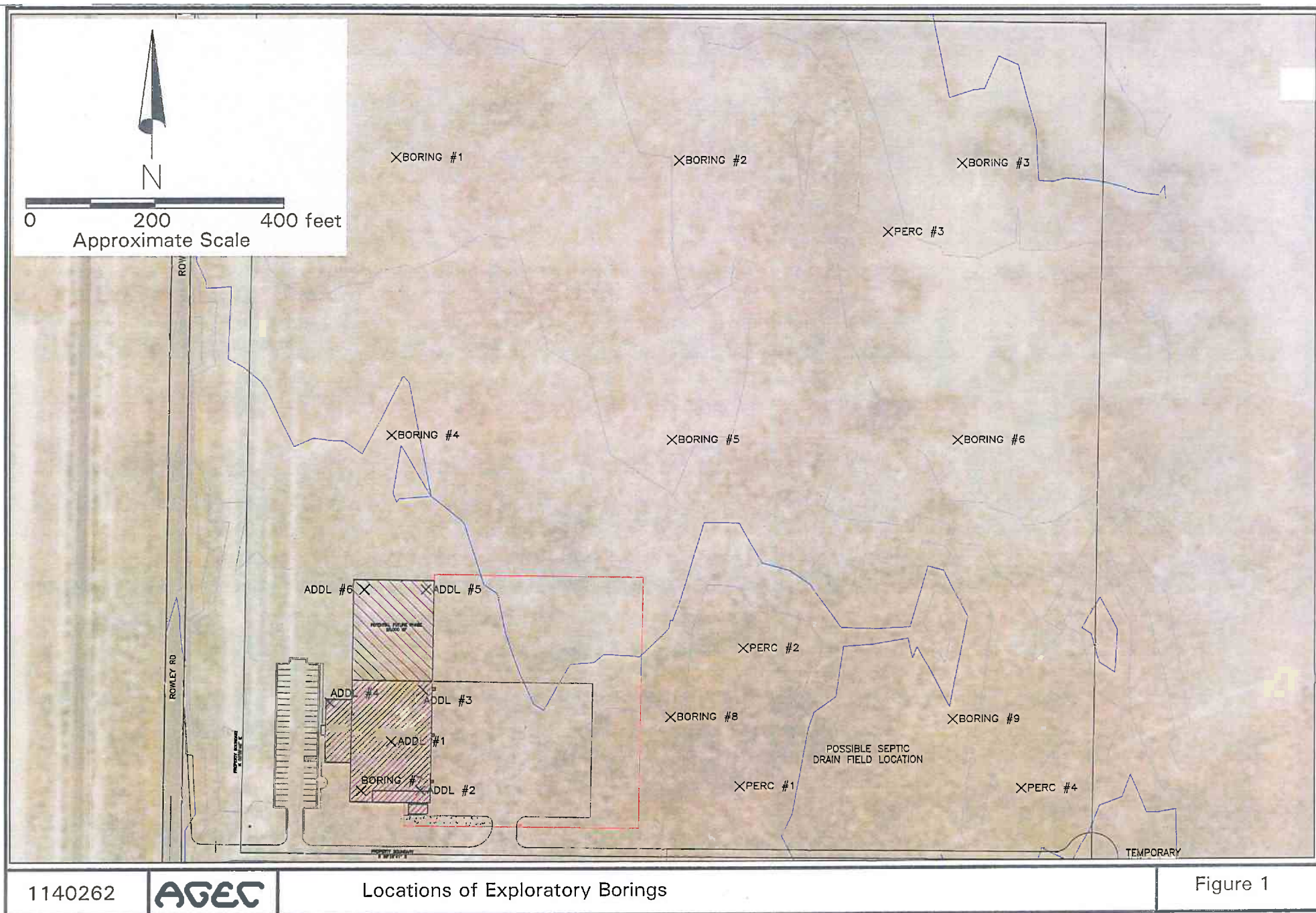
Reviewed by Jay R. McQuivey, P.E.

DRH/rs

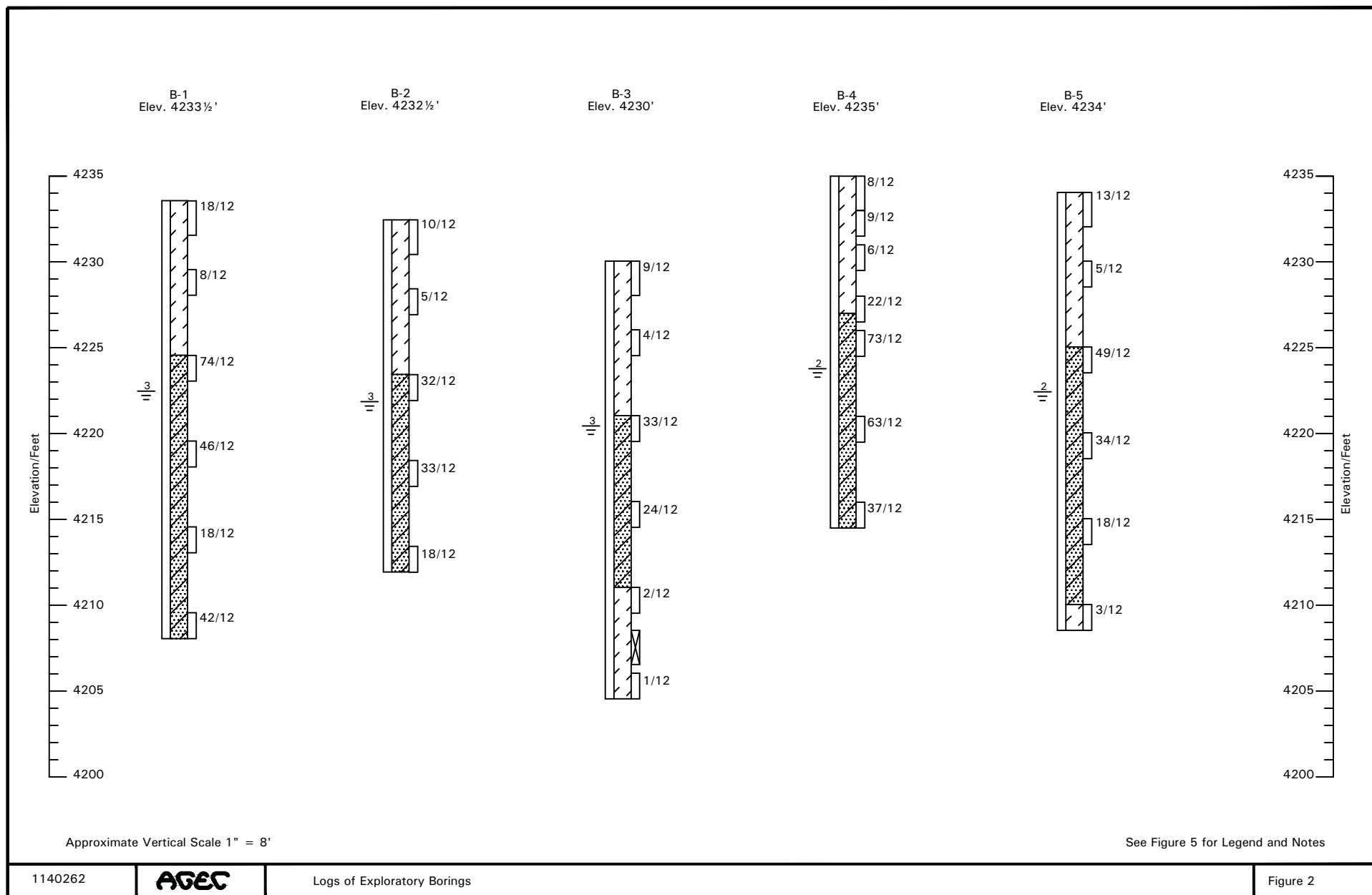
## REFERENCES

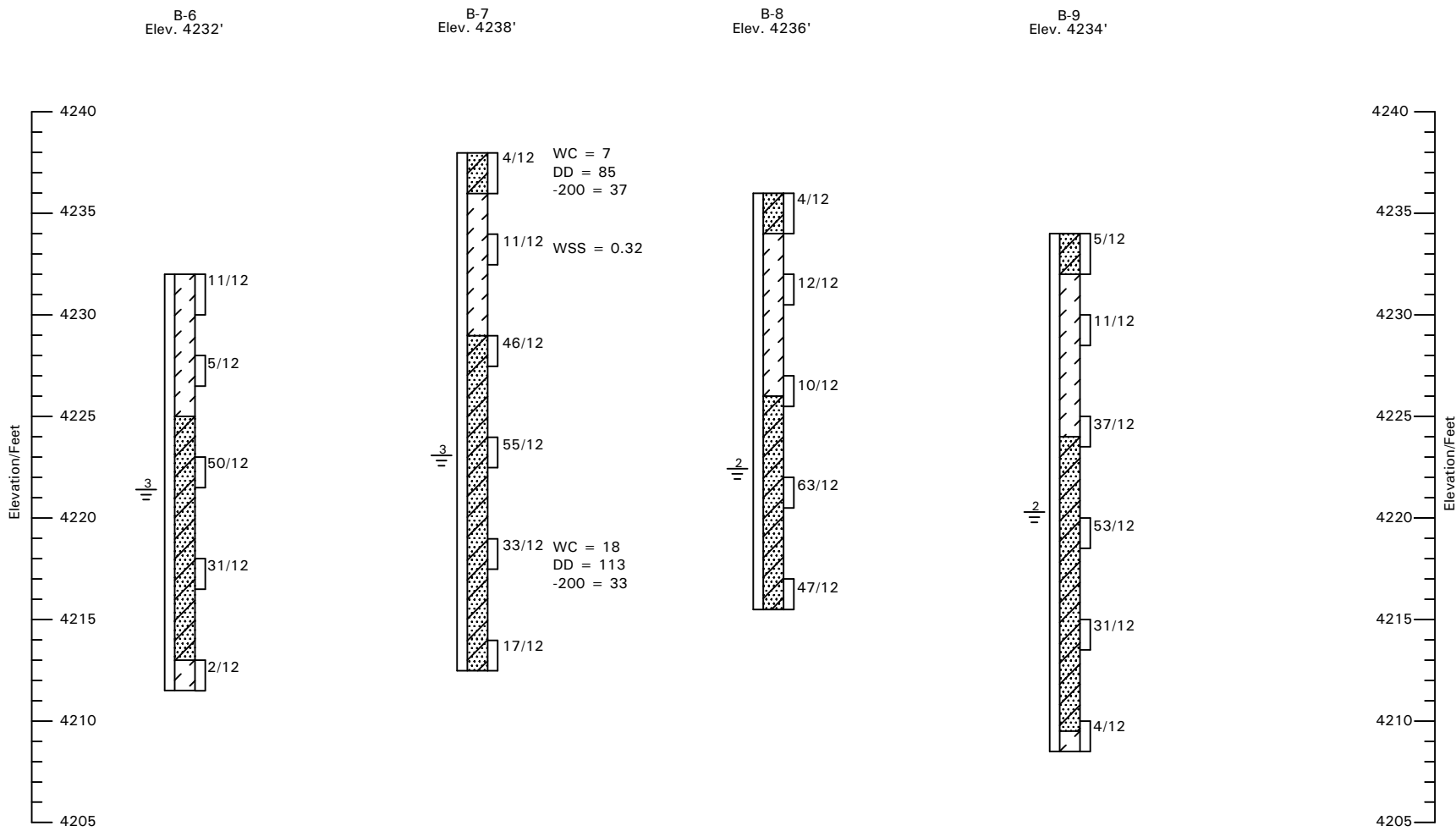
Black, B.D., Hecker, S., Hylland, M.D., Christenson, G.E., and McDonald, G.N., 2003; Quaternary fault and fold database and map of Utah; Utah Geological Survey Map 193DM.

International Building Code, 2012; International Code Council, Inc. Falls Church, Virginia.



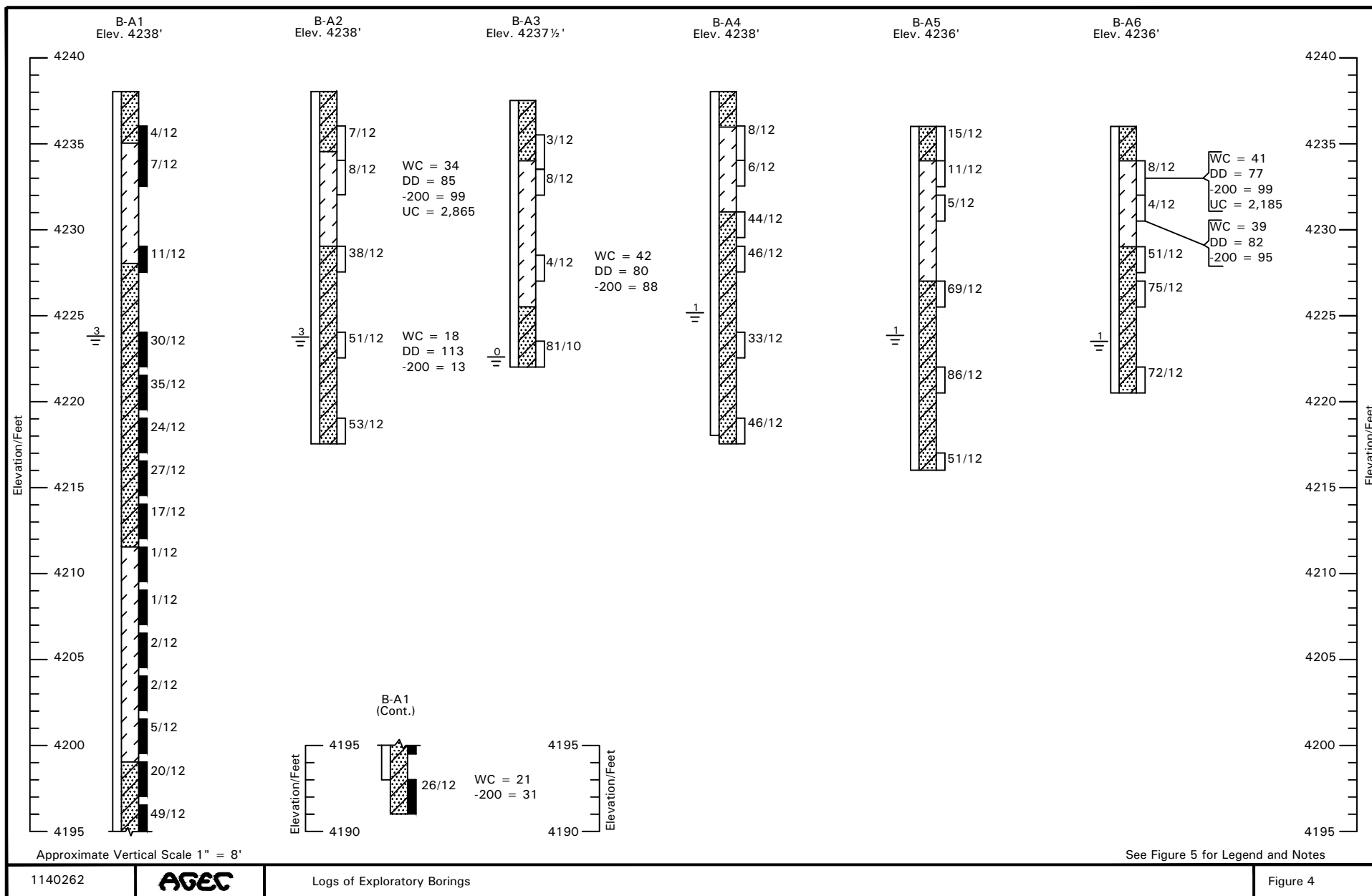








Approximate Vertical Scale 1" = 8'


See Figure 5 for Legend and Notes





LEGEND:


 Lean Clay (CL); occasional silt and sand layers, more numerous sand layers in the upper several feet of some borings, very soft at depth, medium stiff to very stiff above the water level, moist to wet, brown to gray, some cemented particles.


 Silty Sand (SM); occasional clay and silt layers, medium to very dense, moist to wet, brown to gray.

 10/12 California drive sample taken. The symbol 10/12 indicates that 10 blows from a 140 pound automatic hammer falling 30 inches were required to drive the sampler 12 inches.

 10/12 Standard Penetration Test. The symbol 10/12 indicates that 10 blows from a 140 pound automatic hammer falling 30 inches were required to drive the sampler 12 inches.

 Indicates a Shelby tube sample taken.

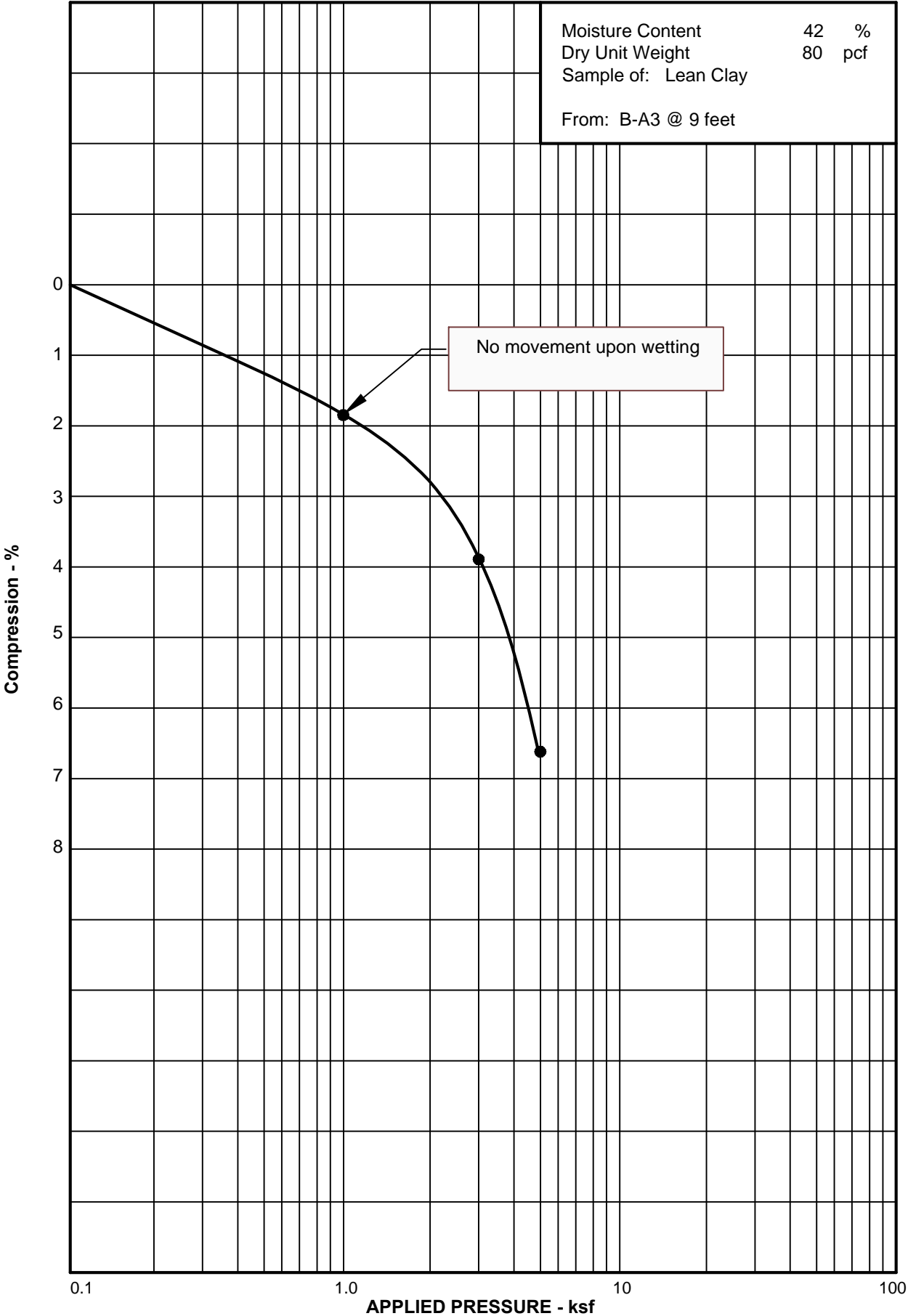
 Indicates slotted 1 1/2 inch PVC pipe installed in the boring to the depth shown.

 Indicates the depth to free water and the number of days after drilling the measurement was taken.

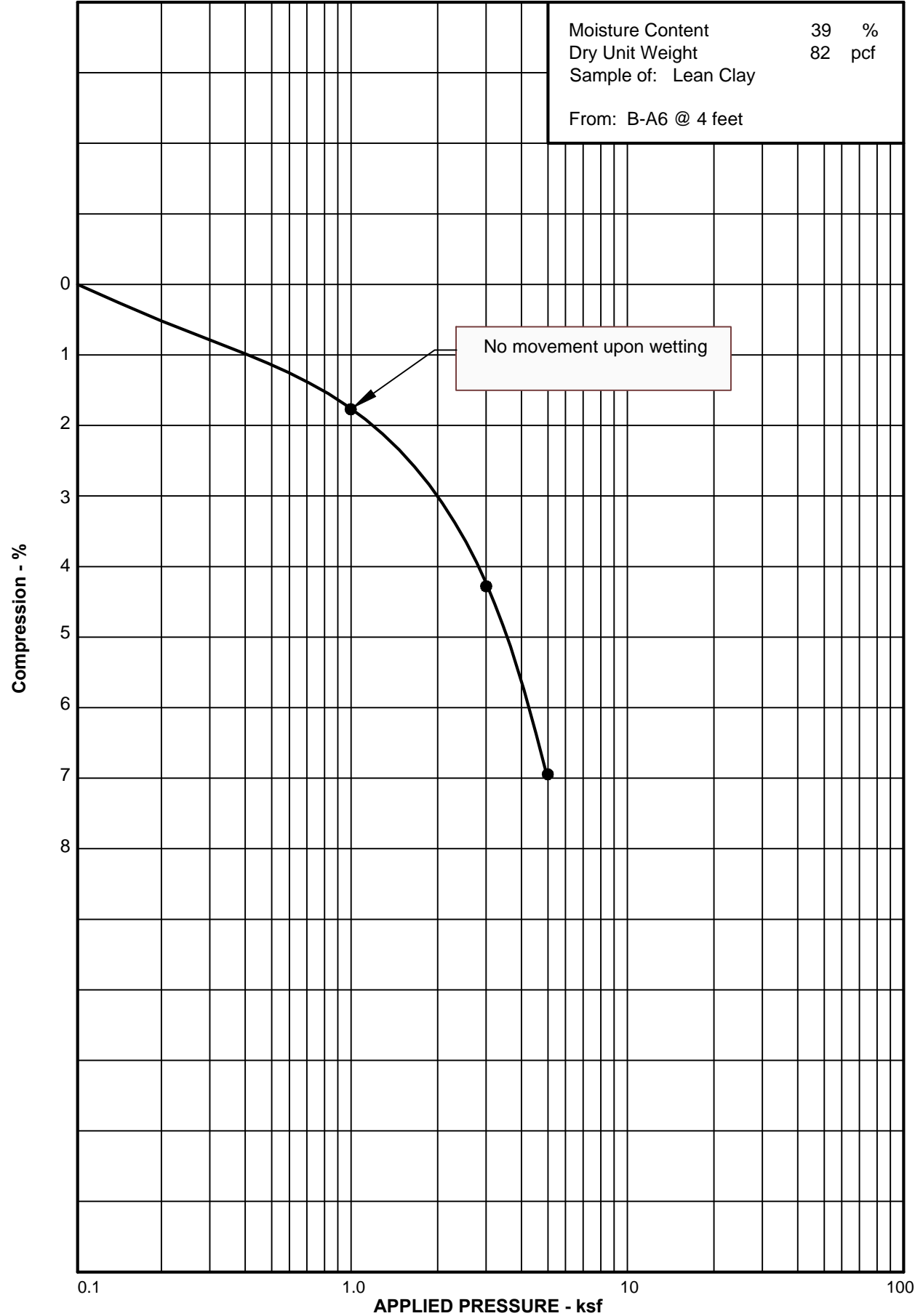
NOTES:

1. Borings were drilled on December 15, 16 and 17, 2014 with 8-inch diameter hollowstem auger.
2. Locations of borings were provided by the surveyor.
3. Elevations of borings were provided by the surveyor.
4. The boring locations and elevations should be considered accurate only to the degree implied by the method used.
5. The lines between the materials shown on the boring logs represent the approximate boundaries between material types and the transitions may be gradual.
6. Water level readings shown on the logs were made at the time and under the conditions indicated. Fluctuations in the water level may occur with time.
7. WC = Water Content (%);  
DD = Dry Density (pcf);  
-200 = Percent Passing No. 200 Sieve;  
UC = Unconfined Compressive Strength (psf);  
WSS = Water Soluble Sulfates (%).

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TABLE I  
SUMMARY OF LABORATORY TEST RESULTS

PROJECT NUMBER 1140262

[illegible]



## **APPENDIX F**

### **HYDROLOGIC ANALYSIS**

## Groundwater Hydrology

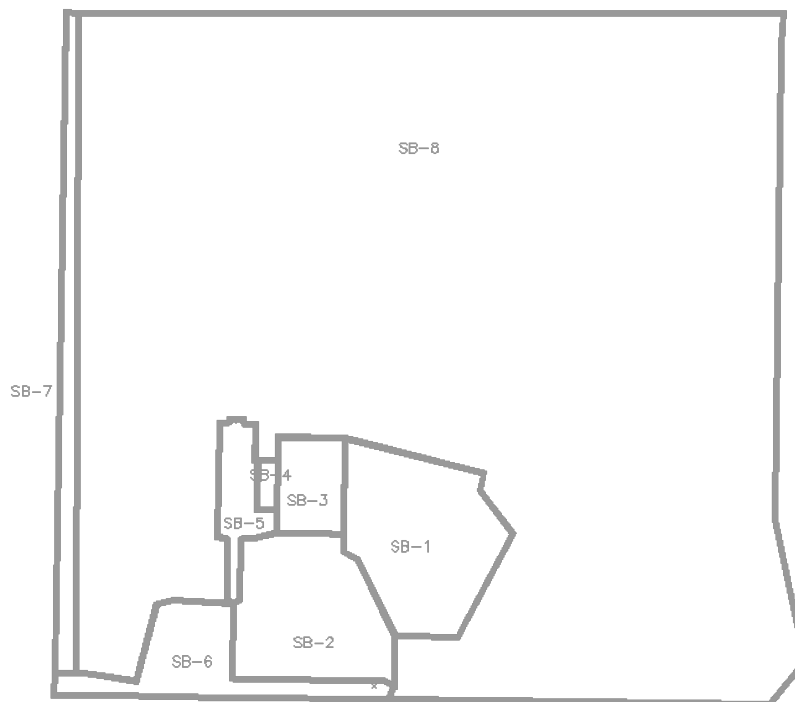
Typical of valleys surrounding the Great Salt Lake, groundwater in the vicinity of the site flows toward the Great Salt Lake (Stolp and Brooks 2009; Stolp and Lambert 1999). Local groundwater is assumed to recharge in the Lakeside Mountains and flow east toward the lake. Groundwater in this area is not known to be hydraulically connected to groundwater in Tooele Valley.

## Surface Hydrology (R315-302-1(2)(c), R315-306-2(1))

Subbasins were delineated from surface topography (including proposed grading and structures) and characterized according to TR-55 (NRCS 1986). See Figure F-1. The soils on site are of hydrologic soil group C (Trickler et al. 2000; NRCS 2014). Desert shrub is the typical cover type; a curve number of 81 was selected for desert shrub in fair condition (NRCS 1986, Table 2-2d). Directly connected impervious areas were measured and included as a percentage of the total subbasin area. Lag time was computed per Chapter 3 of TR-55 (NRCS 1986). Subbasins SB-1 through SB-5 are considered to be the active area of the site.

Runoff was simulated using Hydrologic Engineering Center's Hydrologic Modeling System v4.0 (HEC-HMS, <http://www.hec.usace.army.mil/software/hec-hms/>). Precipitation data were obtained from NOAA Atlas 14 (Bonnin et al. 2004; NOAA 2014) and modeled with an SCS Type 2 distribution with 24 hr duration.

Results are shown in Tables F1 through F4. Note that no run-on is expected (see Appendix G).



**Figure F-1: Subbasin Boundaries**

**Table F1: 25 yr, 24 hr Runoff**

<b>Parameter</b>	<b>Value for Entire Site</b>	<b>Value for Active Areas</b>
Precipitation (in.)	2.07	2.07
Peak runoff flow (cfs)	18.9	4.8
Runoff volume (ac-ft)	2.8	0.6

**Table F2: 100 yr, 24 hr Runoff**

<b>Parameter</b>	<b>Value for Entire Site</b>	<b>Value for Active Areas</b>
Precipitation (in.)	2.52	2.52
Peak runoff flow (cfs)	27.8	6.3
Runoff volume (ac-ft)	4.0	0.7

**Table F3: 25 yr, 24 hr Run-on**

<b>Parameter</b>	<b>Value</b>
Precipitation (in.)	2.07
Peak run-on flow (cfs)	0.0
Run-on volume (ac-ft)	0.0

**Table F4: 100 yr, 24 hr Run-on**

<b>Parameter</b>	<b>Value</b>
Precipitation (in.)	2.52
Peak run-on flow (cfs)	0.0
Run-on volume (ac-ft)	0.0



**NOAA Atlas 14, Volume 1, Version 5**  
**Location name: Utah, US\***  
**Latitude: 40.8500°, Longitude: -112.7311°**  
**Elevation: 4229 ft\***  
\* source: Google Maps



### POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

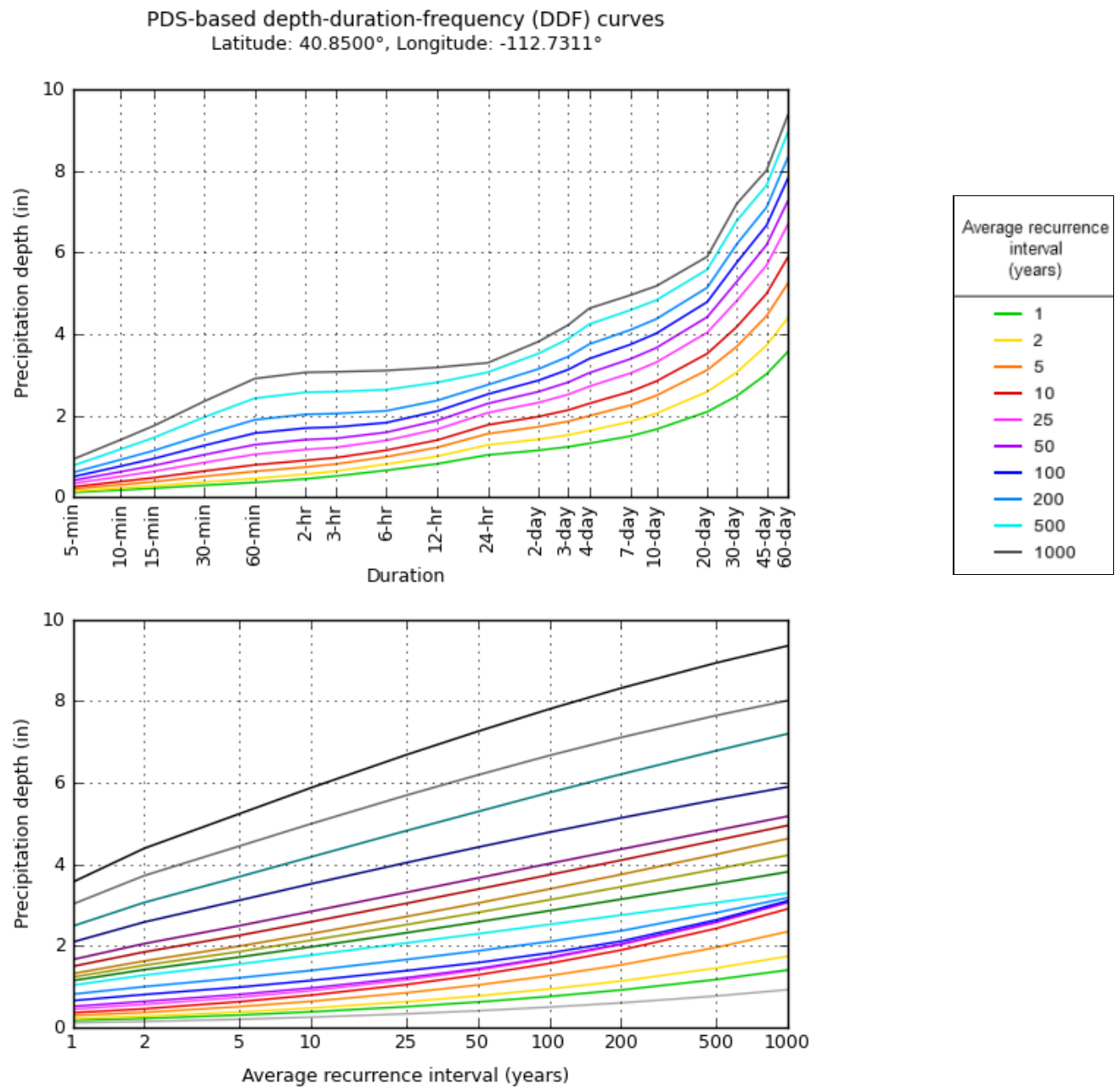
[PF\\_tabular](#) | [PF\\_graphical](#) | [Maps & aerals](#)

### PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches) <sup>1</sup>										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	<b>0.115</b> (0.100-0.134)	<b>0.146</b> (0.128-0.170)	<b>0.201</b> (0.175-0.234)	<b>0.252</b> (0.217-0.293)	<b>0.334</b> (0.281-0.391)	<b>0.409</b> (0.335-0.483)	<b>0.499</b> (0.396-0.595)	<b>0.603</b> (0.461-0.733)	<b>0.771</b> (0.560-0.958)	<b>0.925</b> (0.643-1.17)
10-min	<b>0.175</b> (0.152-0.204)	<b>0.222</b> (0.194-0.258)	<b>0.305</b> (0.266-0.355)	<b>0.383</b> (0.329-0.445)	<b>0.508</b> (0.427-0.595)	<b>0.623</b> (0.509-0.735)	<b>0.759</b> (0.602-0.905)	<b>0.919</b> (0.702-1.11)	<b>1.17</b> (0.853-1.46)	<b>1.41</b> (0.979-1.78)
15-min	<b>0.217</b> (0.188-0.252)	<b>0.275</b> (0.240-0.320)	<b>0.378</b> (0.330-0.441)	<b>0.475</b> (0.408-0.552)	<b>0.630</b> (0.529-0.737)	<b>0.772</b> (0.631-0.911)	<b>0.942</b> (0.747-1.12)	<b>1.14</b> (0.870-1.38)	<b>1.46</b> (1.06-1.81)	<b>1.75</b> (1.21-2.21)
30-min	<b>0.292</b> (0.253-0.340)	<b>0.369</b> (0.323-0.431)	<b>0.510</b> (0.444-0.593)	<b>0.640</b> (0.550-0.744)	<b>0.848</b> (0.713-0.993)	<b>1.04</b> (0.850-1.23)	<b>1.27</b> (1.00-1.51)	<b>1.53</b> (1.17-1.86)	<b>1.96</b> (1.42-2.43)	<b>2.35</b> (1.63-2.98)
60-min	<b>0.361</b> (0.313-0.420)	<b>0.457</b> (0.400-0.533)	<b>0.631</b> (0.550-0.734)	<b>0.791</b> (0.680-0.920)	<b>1.05</b> (0.882-1.23)	<b>1.29</b> (1.05-1.52)	<b>1.57</b> (1.24-1.87)	<b>1.90</b> (1.45-2.30)	<b>2.43</b> (1.76-3.01)	<b>2.91</b> (2.02-3.68)
2-hr	<b>0.448</b> (0.401-0.511)	<b>0.564</b> (0.503-0.644)	<b>0.738</b> (0.655-0.842)	<b>0.901</b> (0.792-1.03)	<b>1.17</b> (1.00-1.34)	<b>1.41</b> (1.18-1.63)	<b>1.69</b> (1.38-1.99)	<b>2.03</b> (1.59-2.43)	<b>2.57</b> (1.91-3.15)	<b>3.06</b> (2.17-3.84)
3-hr	<b>0.516</b> (0.467-0.578)	<b>0.638</b> (0.576-0.718)	<b>0.810</b> (0.729-0.909)	<b>0.966</b> (0.863-1.08)	<b>1.22</b> (1.07-1.37)	<b>1.44</b> (1.24-1.64)	<b>1.72</b> (1.44-2.01)	<b>2.05</b> (1.66-2.45)	<b>2.59</b> (2.01-3.19)	<b>3.07</b> (2.29-3.88)
6-hr	<b>0.657</b> (0.604-0.721)	<b>0.808</b> (0.742-0.886)	<b>0.988</b> (0.906-1.08)	<b>1.15</b> (1.05-1.26)	<b>1.39</b> (1.25-1.54)	<b>1.59</b> (1.41-1.77)	<b>1.83</b> (1.59-2.06)	<b>2.12</b> (1.80-2.48)	<b>2.63</b> (2.17-3.22)	<b>3.10</b> (2.49-3.92)
12-hr	<b>0.816</b> (0.752-0.889)	<b>1.00</b> (0.921-1.09)	<b>1.22</b> (1.12-1.33)	<b>1.40</b> (1.28-1.53)	<b>1.66</b> (1.51-1.83)	<b>1.88</b> (1.68-2.08)	<b>2.11</b> (1.85-2.36)	<b>2.37</b> (2.04-2.69)	<b>2.81</b> (2.36-3.26)	<b>3.18</b> (2.61-3.96)
24-hr	<b>1.03</b> (0.935-1.15)	<b>1.28</b> (1.16-1.43)	<b>1.55</b> (1.40-1.73)	<b>1.77</b> (1.59-1.98)	<b>2.07</b> (1.85-2.31)	<b>2.29</b> (2.05-2.56)	<b>2.52</b> (2.25-2.82)	<b>2.75</b> (2.44-3.09)	<b>3.06</b> (2.68-3.44)	<b>3.29</b> (2.86-4.00)
2-day	<b>1.15</b> (1.04-1.28)	<b>1.42</b> (1.28-1.58)	<b>1.73</b> (1.56-1.92)	<b>1.98</b> (1.78-2.20)	<b>2.32</b> (2.08-2.58)	<b>2.59</b> (2.31-2.89)	<b>2.86</b> (2.54-3.20)	<b>3.14</b> (2.77-3.52)	<b>3.52</b> (3.07-3.97)	<b>3.81</b> (3.30-4.32)
3-day	<b>1.23</b> (1.12-1.37)	<b>1.52</b> (1.38-1.69)	<b>1.86</b> (1.68-2.06)	<b>2.13</b> (1.93-2.37)	<b>2.52</b> (2.26-2.80)	<b>2.82</b> (2.52-3.13)	<b>3.13</b> (2.78-3.49)	<b>3.45</b> (3.04-3.85)	<b>3.88</b> (3.39-4.37)	<b>4.22</b> (3.65-4.78)
4-day	<b>1.32</b> (1.20-1.46)	<b>1.63</b> (1.48-1.81)	<b>1.99</b> (1.81-2.21)	<b>2.30</b> (2.08-2.55)	<b>2.71</b> (2.45-3.01)	<b>3.05</b> (2.73-3.38)	<b>3.39</b> (3.02-3.77)	<b>3.75</b> (3.31-4.18)	<b>4.24</b> (3.70-4.77)	<b>4.63</b> (4.00-5.23)
7-day	<b>1.50</b> (1.36-1.66)	<b>1.85</b> (1.68-2.05)	<b>2.26</b> (2.04-2.50)	<b>2.59</b> (2.34-2.87)	<b>3.04</b> (2.74-3.37)	<b>3.39</b> (3.04-3.76)	<b>3.74</b> (3.34-4.16)	<b>4.10</b> (3.64-4.57)	<b>4.58</b> (4.03-5.14)	<b>4.95</b> (4.32-5.58)
10-day	<b>1.66</b> (1.51-1.84)	<b>2.06</b> (1.87-2.27)	<b>2.49</b> (2.26-2.76)	<b>2.84</b> (2.57-3.14)	<b>3.31</b> (2.98-3.65)	<b>3.66</b> (3.29-4.05)	<b>4.02</b> (3.59-4.45)	<b>4.37</b> (3.89-4.86)	<b>4.83</b> (4.26-5.39)	<b>5.18</b> (4.53-5.81)
20-day	<b>2.09</b> (1.91-2.30)	<b>2.58</b> (2.36-2.84)	<b>3.12</b> (2.84-3.42)	<b>3.52</b> (3.20-3.86)	<b>4.04</b> (3.67-4.43)	<b>4.42</b> (4.00-4.84)	<b>4.79</b> (4.32-5.26)	<b>5.14</b> (4.62-5.66)	<b>5.58</b> (4.99-6.17)	<b>5.90</b> (5.26-6.55)
30-day	<b>2.48</b> (2.26-2.73)	<b>3.06</b> (2.79-3.37)	<b>3.69</b> (3.37-4.06)	<b>4.18</b> (3.80-4.59)	<b>4.82</b> (4.37-5.29)	<b>5.29</b> (4.78-5.81)	<b>5.76</b> (5.18-6.34)	<b>6.21</b> (5.56-6.86)	<b>6.78</b> (6.03-7.54)	<b>7.20</b> (6.36-8.04)
45-day	<b>3.02</b> (2.77-3.30)	<b>3.72</b> (3.42-4.07)	<b>4.45</b> (4.08-4.85)	<b>4.99</b> (4.57-5.44)	<b>5.69</b> (5.20-6.20)	<b>6.19</b> (5.65-6.75)	<b>6.67</b> (6.07-7.28)	<b>7.11</b> (6.45-7.78)	<b>7.65</b> (6.91-8.40)	<b>8.02</b> (7.22-8.84)
60-day	<b>3.56</b> (3.25-3.91)	<b>4.39</b> (4.01-4.82)	<b>5.24</b> (4.78-5.74)	<b>5.88</b> (5.36-6.43)	<b>6.68</b> (6.07-7.31)	<b>7.26</b> (6.58-7.95)	<b>7.81</b> (7.06-8.57)	<b>8.32</b> (7.49-9.16)	<b>8.94</b> (8.02-9.88)	<b>9.36</b> (8.36-10.4)

<sup>1</sup> Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

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**PF graphical**

Duration	
5-min	2-day
10-min	3-day
15-min	4-day
30-min	7-day
60-min	10-day
2-hr	20-day
3-hr	30-day
6-hr	45-day
12-hr	60-day
24-hr	

[Back to Top](#)

## Maps & aeriels

### Small scale terrain



### Large scale terrain



**Large scale map**



**Large scale aerial**



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[Office of Hydrologic Development](#)  
 1325 East West Highway  
 Silver Spring, MD 20910  
 Questions?: [HDSC.Questions@noaa.gov](mailto:HDSC.Questions@noaa.gov)

[Disclaimer](#)



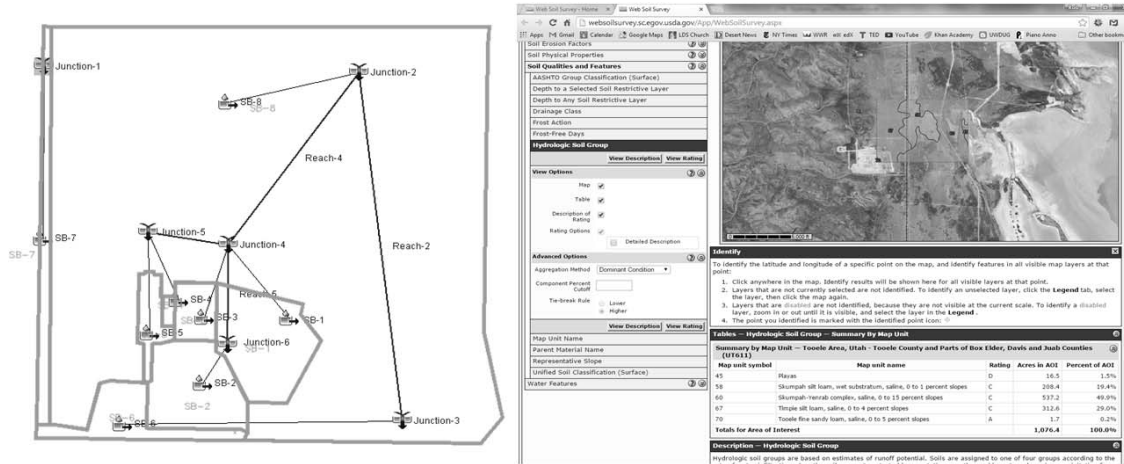
Stericycle, Inc.  
Tooele County Facility Hydrologic Analysis

1/13/2015 RBS



Calculations follow TR-55: Urban Hydrology for Small Watersheds (USDA, NRCS), 1986

Subbasin	Area (ft <sup>2</sup> )	Area (mi <sup>2</sup> )	Soil Group	CN	Note	% DCIA	SHEET FLOW					SHALLOW CONCENTRATED FLOW				CHANNEL FLOW					t <sub>c</sub> (min)	t <sub>lag</sub> (min)
							L	S (ft/ft)	N	P <sub>2</sub> (in.)	T <sub>1</sub> (min)	L	S (ft/ft)	V (ft/s)	T <sub>1</sub> (min)	L	S (ft/ft)	n	V (ft/s)	T <sub>1</sub> (min)		
SB-1	93,990	0.0034	C	81	Sagebrush, fair cover, TR-55 Table 2-2d	49	150	0.010	0.130	1.28	25.2	150	0.010	1.6	1.5	200	0.010	0.012	7.8	0.4	27.2	16.3
SB-2	82,458	0.0030	C	81	Sagebrush, fair cover, TR-55 Table 2-2d	6	100	0.010	0.130	1.28	18.2	100	0.010	1.6	1.0	50	0.010	0.035	2.7	0.3	19.6	11.7
SB-3	25,919	0.0009	C	98	Building roof	100	50	0.120	0.011	1.28	0.5	0	0.010	1.6	0.0	120	0.010	0.012	7.8	0.3	0.8	0.5
SB-4	4,000	0.0001	C	98	Building roof	100	40	0.120	0.011	2.28	0.3	0	0.010	1.6	0.0	60	0.010	0.012	7.8	0.1	0.5	0.3
SB-5	23,134	0.0008	C	81	Sagebrush, fair cover, TR-55 Table 2-2d	94	20	0.020	0.011	3.28	0.3	50	0.010	1.6	0.5	200	0.010	0.012	7.8	0.4	1.3	0.8
SB-6	51,357	0.0018	C	81	Sagebrush, fair cover, TR-55 Table 2-2d	28	50	0.020	0.011	4.28	0.6	100	0.008	1.4	1.2	500	0.008	0.035	2.4	3.5	5.2	3.1
SB-7	46,384	0.0017	C	81	Sagebrush, fair cover, TR-55 Table 2-2d	50	50	0.020	0.011	5.28	0.5	100	0.005	1.1	1.5	1200	0.005	0.035	1.9	10.5	12.5	7.5
SB-8	1,662,920	0.0596	C	81	Sagebrush, fair cover, TR-55 Table 2-2d	0	300	0.005	0.130	6.28	26.2	1000	0.005	1.1	14.6	700	0.005	0.035	1.9	6.2	46.9	28.1



Global Summary Results for Run "100 yr"

Project: STRC Model Simulation Run: 100 yr

Start of Run: 01Jan2000, 00:00 Basin Model: Basin 1  
End of Run: 03Jan2000, 00:00 Meteorologic Model: 100 yr 24 hr  
Compute Time: 10Feb2015, 11:40:31 Control Specifications: Control 1

Show Elements: All Elements Volume Units: IN AC-FT Sorting: Alphabetic

Hydrologic Element	Drainage Area (MI <sup>2</sup> )	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
Junction-1	0.0017	1.8	01Jan2000, 12:00	0.2
Junction-2	0.0696	26.2	01Jan2000, 12:15	3.9
Junction-3	0.0018	1.6	01Jan2000, 12:00	0.1
Junction-4	0.0082	6.3	01Jan2000, 12:00	0.7
Junction-5	0.0009	1.3	01Jan2000, 12:00	0.1
Junction-6	0.0030	1.6	01Jan2000, 12:00	0.2
Reach-2	0.0018	1.4	01Jan2000, 12:15	0.1
Reach-3	0.0009	1.3	01Jan2000, 12:00	0.1
Reach-4	0.0082	5.7	01Jan2000, 12:15	0.7
Reach-5	0.0030	1.6	01Jan2000, 12:00	0.2
SB-1	0.0034	2.4	01Jan2000, 12:15	0.3
SB-2	0.0030	1.6	01Jan2000, 12:00	0.2
SB-3	0.0009	1.3	01Jan2000, 12:00	0.1
SB-4	0.0001	0.1	01Jan2000, 12:00	0.0
SB-5	0.0008	1.2	01Jan2000, 12:00	0.1
SB-6	0.0018	1.6	01Jan2000, 12:00	0.1
SB-7	0.0017	1.8	01Jan2000, 12:00	0.2
SB-8	0.0596	19.2	01Jan2000, 12:30	3.0

Global Summary Results for Run "25 yr"

Project: STRC Model Simulation Run: 25 yr

Start of Run: 01Jan2000, 00:00 Basin Model: Basin 1  
End of Run: 03Jan2000, 00:00 Meteorologic Model: 25 yr 24 hr  
Compute Time: 10Feb2015, 11:39:24 Control Specifications: Control 1

Show Elements: All Elements Volume Units: IN AC-FT Sorting: Alphabetic

Hydrologic Element	Drainage Area (MI <sup>2</sup> )	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
Junction-1	0.0017	1.4	01Jan2000, 12:00	0.1
Junction-2	0.0696	17.6	01Jan2000, 12:15	2.7
Junction-3	0.0018	1.2	01Jan2000, 12:00	0.1
Junction-4	0.0082	4.8	01Jan2000, 12:00	0.6
Junction-5	0.0009	1.1	01Jan2000, 12:00	0.1
Junction-6	0.0030	1.1	01Jan2000, 12:00	0.1
Reach-2	0.0018	1.0	01Jan2000, 12:15	0.1
Reach-3	0.0009	1.0	01Jan2000, 12:00	0.1
Reach-4	0.0082	4.4	01Jan2000, 12:15	0.6
Reach-5	0.0030	1.0	01Jan2000, 12:00	0.1
SB-1	0.0034	1.8	01Jan2000, 12:15	0.2
SB-2	0.0030	1.1	01Jan2000, 12:00	0.1
SB-3	0.0009	1.1	01Jan2000, 12:00	0.1
SB-4	0.0001	0.1	01Jan2000, 12:00	0.0
SB-5	0.0008	0.9	01Jan2000, 12:00	0.1
SB-6	0.0018	1.2	01Jan2000, 12:00	0.1
SB-7	0.0017	1.4	01Jan2000, 12:00	0.1
SB-8	0.0596	12.6	01Jan2000, 12:30	2.1

## **APPENDIX G**

### **RUN-ON AND RUNOFF CONTROL SYSTEMS**

### **Runoff Control System (R315-310-7(2)(c))**

As specified in R315-306-2(9), “an incinerator must collect and treat all runoff from the active areas of the site that may result from a 25-year storm event.”

The runoff control system has been designed with 25 yr capacity. For the developed area of the site, the design flow is 4.8 cfs and the design volume is 0.6 ac-ft as presented in Appendix F. Design calculations and drawings are presented in the following pages.

Runoff will be collected and discharged within the 40-acre site. The building will be equipped with roof drains and downspouts connected to the runoff control systems on either side of the building. Curb, gutter, and inlets will collect runoff from the front lot. Runoff from the front lot will be piped along the north side of the main building to a manhole and into a pipe from the rear lot. The rear lot will be graded to capture runoff immediately east of the building. Stormwater will then be discharged onto natural soils at a lower elevation north of the rear lot and allowed to infiltrate. Inlets, gutters, pipes, and roof drains will be inspected and maintained annually, or as needed, to remove debris and ensure proper operation.

Stericycle has met with representatives of the Utah Division of Water Quality on several occasions to discuss the Division's requirements for the proposed facility. Per the discussion from those meetings, all waste handling at the proposed facility will occur inside the main building, which will be elevated and enclosed. Therefore, wastes will not be exposed to runoff and in turn runoff will not be exposed to wastes. Because of these protections, the Utah Division of Water Quality will not require treatment prior to discharge.

### **Run-on Control System (R315-306-2(9))**

As specified in R315-306-2(9), an incinerator must “divert all run-on for the maximum flow of a 25-year storm around the site.”

No run-on is anticipated at the site due to several factors. The railroad and Rowley Road, both built-up above the natural grade, act as barriers to run-on from the west. No culverts or other conveyances have been observed within 2 miles of the site along Rowley Road. Given the lack of west–east conveyance across or under Rowley Road, the site is not expected to receive run-on from the west. The future access road will be constructed per Tooele County standards, which include a roadside ditch to convey stormwater. The road will be built above the natural grade and any run-on from the south will be diverted to the east by the ditch. The grade of the natural terrain conveys stormwater to the northeast and therefore run-on from those directions does not occur. Additionally, the waste-handling area in the main building will be elevated and enclosed to prevent exposure to stormwater.