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**UTAH DIVISION OF
SOLID & HAZARDOUS WASTE**

2010.02056

**CIRCLE FOUR FARMS LANDFILL
CLASS IIIb PERMIT APPLICATION**



June 11, 2010

**APPLICATION FOR A PERMIT TO
OPERATE A CLASS IIIb LANDFILL**

**Circle Four Farms Landfill
Iron County, Utah**

PART I – GENERAL INFORMATION

ANNOTATED TABLE OF CONTENTS

<u>Part</u>	<u>Title</u>
	Introduction Includes summary of permit with technical and operational issues highlighted
I	General Information Includes State of Utah Solid Waste Permit Application forms
II	General Report Includes information required by Utah Administrative Rule R315-301 through R315-320
III	Technical and Engineering Report Includes information required by Utah Administrative Rule R315-301 through R315-320

INTRODUCTION

This document presents an application for a permit to operate a Class IIIb solid waste disposal facility in Iron County, Utah. The land where the facility is proposed to be located is owned by Circle Four Farms and will be operated by Circle Four Farms personnel. The Class IIIb facility will be utilized for the disposal of dead animals and other industrial wastes associated with the Circle Four Farms operations in Beaver and Iron Counties.

This permit application contains conceptual level engineering sufficient for permitting purposes only. Detailed engineering documents (construction drawings, specifications, and QA/QC plan) for each of the specific construction tasks will be finalized and submitted to the Division of Solid and Hazardous Waste (DSHW) for approval prior to actual construction.

This application has been organized to follow the general outline of R315-302 and R315-320. This organization results in some duplication and repetition of information, but it is intended to simplify the review and approval of the permit renewal application. Part I of this document duplicates the standard form outlining general data pertaining to the site. Part II is a general report that includes a facility description and Landfill Operations Plan, and Closure and Post-Closure care plans. Part III is the Technical & Engineering Report and includes details on the design of the site, Closure Plan, and Post-Closure Plan.

Part I General Information APPLICANT PLEASE COMPLETE ALL SECTIONS

Landfill Type	<input type="checkbox"/> Class IIIa	// Application Type	<input checked="" type="checkbox"/> New Application	<input type="checkbox"/> Facility Expansion
	<input checked="" type="checkbox"/> Class IIIb		<input type="checkbox"/> Renewal Application	<input type="checkbox"/> Modification

For Renewal Applications, Facility Expansion Applications and Modifications Enter Current Permit Number _____

III Facility Name and Location

Legal Name of Facility Circle Four Class IIIb Landfill				
Site Address (street or directions to site) 25,200 N 12,500 W			County Iron	
City		State UT	Zip Code 84751	Telephone (435) 387-2107
Township 31 S	Range 13 W	Section(s) 4&5	Quarter/Quarter Section	Quarter Section
Mam Gate Latitude	degrees 38	minutes 8	seconds 11	Longitude degrees 113 minutes 36 seconds 92

IV Facility Owner(s) Information

Legal Name of Facility Owner Circle Four LLC				
Address (mailing) PO Box 100				
City Milford		State UT	Zip Code 84751	Telephone (435) 387-2107

V Facility Operator(s) Information

Legal Name of Facility Operator Circle Four LLC				
Address (mailing) PO Box 100				
City Milford		State UT	Zip Code 84751	Telephone (435) 387-2107

VI Property Owner(s) Information

Legal Name of Property Owner Circle Four LLC				
Address (mailing) PO Box 100				
City Milford		State UT	Zip Code 84751	Telephone (435) 387-2107

VII. Contact Information

Owner Contact Mr Jim Webb			Title Env and Public Affairs Manager	
Address (mailing) PO Box 100				
City Milford		State UT	Zip Code 84751	Telephone (435) 387-6046
Email Address JimWebb@murphybrownllc.com			Alternative Telephone (cell or other)	(435) 691-0825
Operator Contact Mr Jim Webb			Title Env and Public Affairs Manager	
Address (mailing) PO Box 100				
City Milford		State UT	Zip Code 84751	Telephone (435) 387-6046
Email Address JimWebb@murphybrownllc.com			Alternative Telephone (cell or other)	-4356910825
Property Owner Contact Mr Jim Webb			Title Env and Public Affairs Manager	
Address (mailing) PO Box 100				
City Milford		State UT	Zip Code 84751	Telephone (435) 387-6046
Email Address JimWebb@murphybrownllc.com			Alternative Telephone (cell or other)	-4356910825

Part I General Information (Continued)

VIII Waste Types (check all that apply)

IX Facility Area

All types of non-hazardous industrial waste generated by the facility OR the following specific waste types

Facility Area	<u>310</u>	acres
Disposal Area	<u>222</u>	acres
Design Capacity		
Years	<u>57</u>	
Cubic Yards	<u>656000</u>	
Tons	<u>525000</u>	

Waste Type	Combined Disposal Unit	Monofill Unit
<input type="checkbox"/> Construction & Demolition	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Industrial	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Incinerator Ash	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Animals	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Asbestos	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Other _____	<input type="checkbox"/>	<input type="checkbox"/>

Note: All waste types must be generated by the industry which owns the facility

X Fee and Application Documents

Indicate Documents Attached To This Application

Application Fee Amount \$700.00

- | | | | |
|--|--|---|---|
| <input checked="" type="checkbox"/> Facility Map or Maps | <input checked="" type="checkbox"/> Facility Legal Description | <input checked="" type="checkbox"/> Plan of Operation | <input checked="" type="checkbox"/> Waste Description |
| <input type="checkbox"/> Ground Water Report | <input checked="" type="checkbox"/> Closure Design | <input checked="" type="checkbox"/> Cost Estimates | <input checked="" type="checkbox"/> Financial Assurance |

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

Signature of Authorized Owner Representative	Title	Date
	Address	
Name typed or printed		
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 FOR A PERMIT TO
OPERATE A CLASS IIIb LANDFILL**

**Circle Four Farms Landfill
Iron County, Utah**

PART II - GENERAL REPORT

TABLE OF CONTENTS

1 0 - FACILITY DESCRIPTION	1
1 1 AREA SERVED	1
1 2 WASTE TYPES	1
1 3 FACILITY HOURS	2
1 4 LANDFILL EQUIPMENT	2
1 5 LANDFILL PERSONNEL	2
2 0 - LEGAL DESCRIPTION	4
3 0 – OPERATIONS PLAN	5
3 1 SCHEDULE OF CONSTRUCTION	5
3 2 DESCRIPTION OF WASTE HANDLING PROCEDURES	6
3 2 1 General	6
3 2 2 Public C&D Wastes	7
3 2 3 Public MSW and Commercial Wastes	7
3 2 4 Industrial Wastes	7
3 2 5 Green Wastes	7
3 2 6 Special Wastes	7
3 2 6 1 <i>Used Oil and Batteries</i>	7
3 2 6 2 <i>Bulky Wastes</i>	8
3 2 6 3 <i>Tires</i>	8
3 2 6 4 <i>Dead Animals</i>	8
3 2 6 5 <i>Medical and Asbestos Waste</i>	8
3 2 6 6 <i>Grease Trap Waste and Car Wash Sediment</i>	8
3 2 6 7 <i>Household Hazardous Wastes</i>	8
3 3 WASTE INSPECTION	8
3 3 1 Landfill Spotting	8
3 3 2 Random Waste Screening	9
3 3 3 Removal of Hazardous or Prohibited Waste	9
3 3 5 Notification Procedures	10
3 4 FACILITY MONITORING AND INSPECTION	10
3 4 1 Groundwater	10
3 4 2 Surface Water	11
3 4 3 Leachate Collection	11
3 4 4 Landfill Gas	11
3 4 5 General Inspections	11
3 5 CONTINGENCY AND CORRECTIVE ACTION PLANS	12
3 5 1 Fire	12
3 5 2 Explosion	13
3 5 3 Failure of Run-On/Run-Off Containment	13

3 5 4	Groundwater Contamination	13
3 6	CONTINGENCY PLAN FOR ALTERNATIVE WASTE HANDLING	13
3 7	DISEASE AND VECTOR CONTROL	14
3 7 1	Insects	14
3 7 2	Rodents	14
3 7 3	Birds	15
3 7 4	Household Pets	15
3 7 5	Wildlife	15
3 7 6	Fugitive Dust	15
3 7 7	Litter Control	15
3 8	RECYCLING	16
3 9	TRAINING PROGRAM	16
3 10	RECORDKEEPING	16
3 11	SUBMITTAL OF ANNUAL REPORT	16
3 12	INSPECTIONS	17
3 13	RECORDING WITH COUNTY RECORDER	17
3 14	STATE AND LOCAL REQUIREMENTS	17
3 15	SAFETY	17
3 16	EMERGENCY PROCEDURES	18

1 0 - FACILITY DESCRIPTION

The Circle Four Farms Class III landfill is located approximately twenty two miles west southwest of the City of Mmerville in Iron County, Utah. The landfill will be owned and operated by Circle Four Farms, LLC. Access to the Circle Four Farms Landfill (CFFL) property will be via a two-lane gravel road (12,500 West Street) off of the paved county road. The landfill is located approximately 3/4-mile south of the Iron/Beaver County line via 12,500 West, Iron County will be the local governmental entity with jurisdiction over the site.

The CFFL will be a private Class IIIb landfill and will not accept any waste generated from outside the Circle Four Farms operations. As such, no vehicles other than Circle Four Farms or vehicles contracted to Circle Four Farms will be allowed to access the site.

The facility will be entirely fenced, with access through the locking gate at the main entrance of the solid waste facility on 12,500 West, no other permanent structures will be constructed at the site. If needed, portable restrooms will be delivered for Circle Four Farms for contract employee use. However, current plans are to have employees utilize existing facilities located at Farm #42203 (25,330 North 13680 West) approximately 1.25 miles west of the landfill. The location of the landfill site with respect to Mmerville is shown on the location map included on Drawing 1 (Appendix A). Drawings 2 and 3 illustrate property ownership and Iron County Land Use proximate to the landfill.

1.1 AREA SERVED

The CFFL will serve only the Circle Four Farms operations, no waste will be accepted from any other source. The initial annual tonnage for the wastes to be accepted at the facility is anticipated to be 9,100 tons. The 9,100 tons per year of waste averages out to a daily operational tonnage of approximately 25 tons (based upon 365 disposal days during the year).

1.2 WASTE TYPES

The CFFL will accept the following waste types for disposal:

- Dead Pigs
- Process waste associated with the Circle Four Farms operations in Beaver and Iron Counties. At present this waste is anticipated to include construction debris, lunch trash, gloves, artificial insemination disposables, pallets, plastic flooring, boxes and plastic bags.

1.3 FACILITY HOURS

The operating hours for the facility will vary due to the nature of the operation. The facility will be operated daily due to the constant need to dispose of dead pigs.

The following facility information will be posted at the gate:

- Landfill Owner
- Private Property
- No Trespassing
- Emergency Telephone Numbers

1.4 LANDFILL EQUIPMENT

The following equipment will be on site and utilized in landfill operations:

- Wheel Loader
- Track Hoe
- Water truck as required

Additional heavy equipment is available via area contractors on an as-needed basis. Minor vehicle maintenance is to be performed on-site by Circle Four personnel. Major equipment repairs will be performed off-site.

1.5 LANDFILL PERSONNEL

The following briefly presents the responsibilities for all on-site landfill personnel at the CFFL:

Environmental and Public Affairs Manager - The Environmental and Public Affairs Manager (Manager) is responsible for all matters relating to the solid waste program for the CFFL landfill operations. The Manager is responsible that the landfill operations meet all Department of Solid and Hazardous Waste (DSHW) permit requirements. The Manager conducts regular facility inspections and monitors all landfill activities. The Manager is responsible for all operational documentation including the annual reports to DSHW. The Manager is responsible for all persons on the site including visitors.

Operators - The Operators are responsible for all day-to-day earth work activities at the landfill. These responsibilities include, excavation of waste trenches, backfilling of waste trenches, general site grading, site access and dust control.

Truck Drivers – The **Truck Drivers** are primarily responsible for all day-to-day waste collection and transportation. Additional duties include, waste screening and waste placement at the landfill and visual inspection of loads as they are discharged. Truck drivers will conduct the random load checks.

20 - LEGAL DESCRIPTION

The CFFL is located approximately twenty two miles west southwest of Minersville, Utah as illustrated on Drawing 1 and Drawing 2 (Appendix A) The landfill property is as follows

Sectional Lots 5, 6, 11 & 12 in Section 4 and Sectional Lots 7, 8, 9 & 10 Section 5, T31S, R13W, SLB & M less and excepting the following described parcel Beginning at the West $\frac{1}{4}$ corner of said Section 4 and running thence N $00^{\circ}07'45''$ W along the section line 660.00 feet, thence S $89^{\circ}57'49''$ E 660 00 feet, thence S $00^{\circ}07'45''$ E 660 00 feet to the $\frac{1}{4}$ section line, thence N $89^{\circ}57'49''$ W along said line 660 00 feet to the point of beginning

Copies of the legal descriptions for the landfill parcels are included in Appendix B

3 0 – OPERATIONS PLAN

The Operation Plan for the CFFL has been written to address the requirements of Utah State Solid Waste Regulations R315-302 and describes the proposed operations of the CFFL. This Operations Plan reflects anticipated landfill operations.

The following section details the operational specifics of the CFFL. Forms used in the documentation of the operation are included in Appendix C.

3 1 SCHEDULE OF CONSTRUCTION

The development of the CFFL will be incremental in nature. The development of the landfill will be broken into Phases to facilitate long term operations and minimize the area of landfill requiring final cover at any one time. Prior to receiving waste in Phase 1, two downgradient wells will be installed to monitor groundwater quality. The approximate location of the downgradient monitor wells are indicated on Drawing 2 (Appendix A).

The landfill will begin with the development of Phase 1 near the northeast corner of the 80-acre tract of land and move sequentially to the west and south. Phase 1 will be comprised of eight 10-acre cells as indicated on Drawing 2 (Appendix A) with a series of disposal trenches being excavated within each cell. Cell 1 operations will begin at the northeast corner of cell 1 with the trenches moving from east to west until reaching cell boundary. Once the trenches reach the cell boundary, the next sequence of trenches will be excavated south of the previously excavated row of trenches. Disposal trench excavation will continue within each cell until the entire 10 acre cell is complete then the operations will move to the next sequential cell. Phase 1 (if operations start in January of 2011) will last until approximately July of 2031.

At the completion of the last cell (Cell 8) in Phase 1, the landfill Circle Four Farms will evaluate the possibility of reusing the previously landfilled areas of Phase 1 if sufficient decomposition of the organic matter has occurred with the previously deposited waste or move the landfill operation to the Phase 2 area.

Phase 2 is identified as the tract of land immediately east of Phase 1. Before any landfilling activities could begin in the Phase 2 area, the archaeological features identified by the Montgomery Archaeologist field survey (See Appendix D) in the spring of 2010 would need to

be field staked. Each area identified by the field survey of 2010 would have a 100 foot buffer area established around them. Additional downgradient monitor wells will be installed before the acceptance of waste withing Phase 2. The Phase 2 cells would be layed out in a similar method as Phase 1 with operations starting in the northeast comer of Phase 2 with cells following the same east to west, north to south patten while avoiding all archaeological sites. Phase 2 would be divided into 14 approximately 10-acre cells. The total area for Phase 2 is approximately 170 acres with approximately 28.5 acres consisting of archaeological sites and associated buffer.

The archaeological discoveries have resulted in the reconfiguration of the landfill into smaller operational cells that minimize the area required to have final closure activities performed at any one time, that size reduction proportionally lowers the financial assurance requirements.

3.2 DESCRIPTION OF WASTE HANDLING PROCEDURES

3.2.1 General

CFFL will implement a waste control program designed to efficiently manage the disposal of hogs and other industrial wastes generated by the Circle Four Farms operations while minimizing the potential for municipal solid waste (MSW), constmction and demolition (C&D) wastes, hazardous waste, or unacceptable wastes being delivered to the CFFL. At present the "other industrial wastes" are anticipated to include constmction debris, lunch trash, gloves, artificial insemination disposables, pallets, plastic flooring, boxes and plastic bags. The program is designed to protect the health and safety of employees and the general public, as well as to protect against the contamination of the environment.

The landfill site will not be open for public use, waste from Circle Four Farms operations will be the only waste permitted at the site. Signs will be posted along the access road to clearly indicate (1) the types of wastes that are accepted at each facility, (2) the types of wastes not accepted at the site, and (3) the penalty for illegal disposal.

All Circle Four Farms vehicles delivering wastes to the site will access the site through a remote controled gate operated by controls in each delivery tmck or through a locked gate. Each driver will maintain a delivery log so all waste delivery to the CFFL can be tracked. Since access to the site will be a secure gate and the landfill operation restricted to Circle Four Farm wastes, no attendant will be on site.

Loads will be regularly surveyed at each of the tipping areas by the truck drivers to determine if waste from sources other than Circle Four Farms has been placed into the disposal bins. If a discharged load contains inappropriate or unacceptable material, the truck driver will immediately notify the Manager. The Manager will assess the nature of the waste and if the discharger is not immediately identified, the area where the unacceptable material was discharged will be cordoned off. Once the nature of the unacceptable material (Class I or Hazardous waste) has been determined the Manager will identify the appropriate disposal location, contact the landfill (or disposal vendor) and arrange for the soonest possible removal of the unacceptable material. Class I material will either be transported immediately by CFFL personnel, or moved to a designated area for pick-up and transportation to a Class I landfill (Iron or Beaver County facility). If the material is hazardous, and it is determined necessary to be handled by a specialist, the area will remain cordoned off until the appropriate removal/disposal procedures can be performed.

3.2.2 Public C&D Wastes

Not accepted at the CFFL, only wastes generated by Circle Four Farms operation are permitted.

3.2.3 Public MSW and Commercial Wastes

Not accepted at the CFFL, only wastes generated by Circle Four Farms operation are permitted.

3.2.4 Industrial Wastes

The CFFL will receive only minor amounts of industrial waste from the Circle Four Farms operations that are not dead swine. The industrial waste generated at the site may vary over time, but is currently anticipated to include small amounts of construction debris, lunch trash, plastic gloves, artificial insemination disposables, wood pallets, plastic flooring, cardboard boxes and plastic bags. No industrial waste from any other operation will be accepted.

3.2.5 Green Wastes

Not accepted at the CFFL.

3.2.6 Special Wastes

3.2.6.1 Used Oil and Batteries

Not accepted at the CFFL.

3.2.6.2 Bulky Wastes

Not accepted at the CFFL

3.2.6.3 Tires

Not accepted at the CFFL

3.2.6.4 Dead Animals

Dead animals (swine) generated by the Circle Four Farms operations are accepted at the CFFL. Dead animals from other sources are not accepted. All dead animals received will be covered at the end of the working day with a minimum of six inches of soil.

3.2.6.5 Medical and Asbestos Waste

Not accepted at the CFFL

3.2.6.6 Grease Trap Waste and Car Wash Sediment

Not accepted at the CFFL

3.2.6.7 Household Hazardous Wastes

Not accepted at the CFFL

3.3 WASTE INSPECTION

3.3.1 Landfill Spotting

Learning to identify and exclude prohibited and hazardous waste from the CFFL is necessary for the environmentally safe operation of the facility. The Truck Drivers will be required to receive initial and periodic hazardous waste screening inspection training. Waste screening certificates of the training received will be kept in the personnel files.

3.3.2 Random Waste Screening

Random inspections of incoming loads will be conducted according to the schedule established by the Manager but no less than once per one hundred loads. If frequent violations are detected, additional random checks will be scheduled at the discretion of the Manager.

If a suspicious or unknown waste is encountered, the Truck Driver or possibly the Operator will proceed with the waste screening as follows:

- The Random Load Inspection Record (Appendix C) is completed
- Protective gear is worn (leather gloves, steel-toed boots, and hard hat)
- The suspect material is spread out with landfill equipment or hand tools and visually examined. Suspicious markings or materials, like the ones listed below, are investigated further:
 - Materials other than hogs
 - Waste resembling MSW
 - Waste resembling C&D
 - Containers labeled hazardous
 - Material with unusual amounts of moisture
 - Other wastes not accepted by the Landfill
- The Manager will be called if unstable wastes that do not appear to have originated from the Circle Four Farms operations are encountered.

3.3.3 Removal of Hazardous or Prohibited Waste

Should hazardous or prohibited wastes be discovered during random waste screening or during tipping, the waste will be removed from the landfill as follows:

- If the generator is known, they will be asked to retrieve the waste and informed of the proper disposal options.
- If the origin of the waste is not known, Operators will remove the waste from the disposal trench and notify the Manager.
- The Manager follows procedures outlined in Part 3.2.1 of this permit to assess the nature of the waste and arrange for the appropriate removal/transportation of unacceptable material to an appropriate disposal facility.

A record of the removal of all hazardous or prohibited wastes will be kept in the site operational records.

3.3.5 Notification Procedures

The following agencies and people are to be contacted if any hazardous materials or hazardous waste is discovered at the landfill

- Jim Webb, Environmental and Public Affairs Manager (435) 387-6046
- Southwest Utah Public Health Department (435) 586-2437
- Executive Secretary, DSHW (801) 538-6170
- Iron Co Fire Department (435) 586-4408

A record of conversation will be completed as each of the entities is contacted. The record of conversation is kept in the site operational records.

3.4 FACILITY MONITORING AND INSPECTION

3.4.1 Groundwater

The CFFL is not required to monitor for groundwater, however, after discussions with the DEQ and County Officials CCFL has installed a monitoring system for the Class IIIb landfill. Based on historical mapping of groundwater levels and the indicated direction of groundwater flow, three wells were installed at the site: one up gradient (background) and two down gradient of the property. The well locations are shown on Drawing 2 (Appendix A). The wells have been installed to sufficient depth in order to intercept native groundwater as well as anticipated seasonal fluctuations. Logs of the subsurface conditions encountered, and cross-section well completion drawings are also included in Appendix E.

The locations of these initial wells were selected based on historical groundwater maps, however, water level measurements in these new wells indicate that groundwater flows to the north-northwest instead of to the northeast as was originally thought. As a result, one of the installed wells, intended to be downstream, appears to be upstream of Phase 1. Groundwater gradient based on this new data is shown on Drawing 9 (Appendix A).

Groundwater levels will be monitored to validate the direction of groundwater flow. After validation of the collected data, additional wells will be installed as necessary to establish the appropriate number of up gradient/down gradient wells. Two consecutive quarters of groundwater measurement/sampling will be performed prior to placement of any waste in the landfill. During the operation of the landfill, samples will be collected twice per calendar year in each of the up gradient and down gradient monitoring wells. The groundwater analytical data will then

be sent to the Division of Solid and Hazardous Waste for review. Samples testing will be performed in accordance with the regulations of the Utah code (R315-308)

3.4.2 Surface Water

Surface water runoff will be managed through a system of roads, berms and associated ditches as indicated on the drawings. Prior to the start of operations, a site specific storm water pollution prevention plan (SWPPP) will be developed and submitted to the Division of Solid and Hazardous Waste and other state and local agencies as applicable. This SWPPP will not be included as part of this permit application.

Run-off from the final cover will be managed by a combination of berms and ditches. The berms will be placed to divert the water around the active area to perimeter ditches.

Circle Four Farms staff will inspect the drainage system monthly. Temporary repairs will be made as required to any observed deficiencies until permanent repairs can be scheduled. Circle Four Farms staff or a licensed general contractor will repair drainage facilities as required.

3.4.3 Leachate Collection

The CFFL is not required to collect or monitor leachate, therefore, no leachate monitoring or inspection activities will be performed.

3.4.4 Landfill Gas

The CFFL is not required to collect or monitor landfill gas, therefore, no landfill gas monitoring or inspection activities will be performed.

3.4.5 General Inspections

Routine inspections are necessary to prevent malfunctions and deterioration, operator errors, and discharges that may cause or lead to release of wastes to the environment or a threat to human health. Operators are responsible for conducting and recording routine inspections of the landfill facilities according to the following schedule:

- Truck Drivers perform pre-operational inspections of all transportation equipment daily. A post-operational inspection is performed at the end of each shift while equipment is cooling down.
- All equipment is on a regular maintenance schedule. The on-site personnel perform all oil changes, an overall inspection of each piece of equipment is performed during oil

changes. A logbook will be maintained on each piece of equipment and any repairs and comments concerning the inspection are contained in the log. Materials used in maintenance will not be stored before or after repairs at the site, there will be no storage of parts, tires scrap or similar items. All will be removed to appropriate storage or waste acceptance facility before the end of business on the day maintenance is performed.

- A 1,320 gal diesel fuel storage tank will be housed on the site for equipment support. This tank will be housed at ground level within a concrete basin that will function as secondary containment.
- Facility inspections are completed on a daily basis. Any needed corrective action items are recorded and the Operators complete needed repairs. If a problem is of an urgent nature, the problem is corrected immediately.
- All trucks hauling dead animals or other waste will be inspected regularly to ensure that no part of the load leaks and that the operational fluids of the truck are not leaking material from the truck bed.

3.5 CONTINGENCY AND CORRECTIVE ACTION PLANS

The following sections outline procedures to be followed in case of fire, explosion, run-on/run-off contamination, or suspected groundwater contamination.

The Iron County Fire Department will be contacted in all cases where hazardous materials are suspected to be involved.

3.5.1 Fire

The potential for fire in most landfills is a concern. Since the predominant wastes are dead animals, the threat of fire is extremely low.

In the very unlikely event that a fire occurs at the CFFL, the Iron County Fire department will be called if it appears that landfill personnel and equipment cannot contain the fire. To assist in readiness for potential fire hazards the Fire department has been contacted and informed of the nature of operations at the site. A response from the County Fire Warden is included with other agency correspondence in Appendix F of this permit.

In case of fire, the Manager will be notified immediately. A written report detailing the event is placed in the operating record within seven days, including any corrective action taken.

3.5.2 Explosion

The potential for an explosion in most landfills is a possibility. Since the predominant wastes are dead animals, the threat of explosion is extremely low.

If an explosion occurs or seems possible, all personnel will be accounted for and the landfill evacuated. Corrective action will be immediately evaluated and implemented as soon as practicable.

The Manager will be notified immediately and the Iron County Fire department will be called. The Executive Secretary will be notified immediately.

3.5.3 Failure of Run-On/Run-Off Containment

The purpose of the run-on/run-off control systems is to manage the stormwater falling on or near the landfill. Where possible, water is diverted away from the landfill by utilizing ditches and berms. These ditches are inspected on a regular basis and repaired as needed. The landfill site will be sloped to direct the run-on away from operational areas.

Any temporary berms or other structures will be checked at least every 2 hours during a storm event until storm water flow has stopped. Permanent improvements or repairs will be made as soon as practicable.

The Manager will be notified immediately if a failure of the run-off system is discovered. The storm event will be fully documented in the operating record, including corrective action within 14 days.

3.5.4 Groundwater Contamination

If ground water contamination is ever suspected, studies to evaluate the potential contamination will be conducted and the existence and/or extent of contamination will be documented. CFFL will comply with the following Solid Waste Rules:

- R315-308-2 (11) - Groundwater Monitoring Requirements
- R315-308-3 - Corrective Action Program

3.6 CONTINGENCY PLAN FOR ALTERNATIVE WASTE HANDLING

The most probable reason for a disruption in the waste handling procedures at the CFFL will be weather related. The landfill may close during periods of inclement weather such as high winds,

heavy rain, snow, flooding, or any other weather-related condition that would make travel or operations dangerous. The CFFL may also close for other reasons like fire, natural disaster, etc. The likelihood of a disruption in operations is very unlikely but possible, the CFFL staff will minimize the possibility of disruption of waste disposal services from an operational standpoint.

The Iron County Class I landfill and Beaver County Class I landfills have accepted waste from the Circle Four Farms operations in the past. If necessary, they are willing to accept waste on a temporary basis in the event of an emergency at the CFFL. Discussions have been initiated with these facilities' managers (Mike Nielsen, Beaver, Jaron Scott, Iron County) and both are agreeable to accepting CFFL waste on a temporary basis, however, formal agreements with these two facilities have not yet been finalized. These agreements will be in-place, and documentation will be provided to DSHW, prior to construction of the landfill.

In case of equipment failure, replacement equipment will be rented or leased to continue operations while repairs are being made.

3.7 DISEASE AND VECTOR CONTROL

The vectors that may be encountered at the CFFL are flies, birds, mosquitoes, rodents, skunks, and snakes. Due to the rural location of the landfill, stray house pets may occasionally be encountered at the landfill. The program for controlling these vectors is as follows:

3.7.1 Insects

Eliminating breeding areas is essential in the control of insects. CFFL staff will minimize the potential breeding areas by daily covering all waste with a minimum of six inches of soil. The landfill topography will be sloped to reduce ponded water.

3.7.2 Rodents

Reducing potential food sources minimizes rodent populations at the landfill. Due to the nature of the CFFL wastes, all waste will be covered daily with a minimum of six inches of soil. The application of daily cover over all waste disposal areas will minimize the potential food sources for rodents.

In the unlikely event of a significant increase in the number of rodents at the CFFL, a professional exterminator will be contacted. The exterminator would then establish an appropriate protocol for pest control in accordance with all county, state and federal regulations.

3.7.3 Birds

It is anticipated that the CFFL will have minimal problems with birds. Good land filling practices of daily covering of working areas, and the minimization of ponded water will alleviate most of the bird problems. If the occasional need arises, the birds will be encouraged to leave by using cracker and whistler shells.

3.7.4 Household Pets

Because of the landfill's location, some stray cats and dogs may wander onto the property. If stray animals are encountered (and can be caught) they will be turned over to the animal shelter. If the Truck Drivers or Operators are unable to apprehend the animals, they will be chased off the property.

3.7.5 Wildlife

The CFFL may have a variety of wildlife located on or near the landfill property. Through correspondence with the Division of Wildlife Resources' Utah Natural Heritage Program it was determined that only one species, the *kit fox*, is currently included on the sensitive species list (See letter in Appendix G). Other wildlife may include deer, snakes, foxes, skunks, and coyotes. If problem skunks or snakes are encountered, they will be exterminated. If other site wildlife becomes a problem, the landfill will coordinate with the Division of Wildlife Resources to provide methods and means to eliminate the problem.

In the event that any of these vectors become an unmanageable problem, the services of a professional exterminator will be employed.

3.7.6 Fugitive Dust

The main road leading to the CFFL is paved, however, the access road to the disposal areas is an improved dirt/gravel road and will need occasional dust control measures. General landfill activities, site access by vehicles compounded by the occasional high wind may present a fugitive dust problem. If the dust problem elevates above the "minimum avoidable dust level". Circle Four Farms personnel will apply water to problem areas. A dust control plan has been prepared and is included with this permit application as Appendix H.

3.7.7 Litter Control

The relatively small volume and type of waste managed by the CFFL facility will help to keep the amount of litter small. However, due to the nature of landfilling operations, blowing litter

may still be an occasional problem Circle Four Farms personnel will perform routine litter cleanup to keep the landfill and surrounding properties clear of windblown debris

3.8 RECYCLING

Due to the nature of the waste, there will be no recycling at the CFFL operations

3.9 TRAINING PROGRAM

As part of the initial training of new employees, all new employees receive a site orientation The site orientation details the locations of key facilities and the operations associated with each Additionally, new employees will be made aware of the contents of the landfill's permit requirements

Regular safety and equipment maintenance training sessions will be held to ensure that employees are aware of the latest technologies and that good safety practices are used at all times Documentation of all personnel training will be kept in the personnel files

3.10 RECORDKEEPING

An operating record will be maintained as part of a permanent record on the following items

- Types of wastes received on a monthly basis Daily logs will be stored at the Managers office
- Deviations from the approved Operations Plan
- Personnel training and notification procedures
- Random load inspection log

3.11 SUBMITTAL OF ANNUAL REPORT

Circle Four Farms staff will submit a copy of its annual report for the CFFL to the Executive Secretary by March 1 of each year for the most recent calendar or fiscal year of facility operation The annual report will include facility activities during the previous year and will include, at a minimum, the following

- Name and address of facility
- Calendar or fiscal year covered by the annual report
- Annual quantity, in tons or volume, in cubic yards, and estimated in-place density in pounds per cubic yard of solid waste

- Annual update of required financial assurances mechanism pursuant to Utah Administrative Code R315-309
- Training programs completed

3 12 INSPECTIONS

The Manager will inspect the facility to minimize malfunctions and deterioration, operator errors, and discharges that may cause or lead to the release of wastes to the environment or to a threat to human health. These inspections will be conducted on a quarterly basis, at a minimum. A Landfill Inspection Form (Appendix C) will be kept as part of the operating record. This log includes at least the date and time of inspection, the printed name and handwritten signature of the inspector, a notation of observations made, and the date and nature of any repairs or corrective actions. Inspection records are available to the Executive Secretary or an authorized representative upon request.

3 13 RECORDING WITH COUNTY RECORDER

Plats and other data, as required by the Iron County, will be recorded with the Iron County Recorder as part of the record of title no later than 60 days after certification of closure.

3 14 STATE AND LOCAL REQUIREMENTS

The CFFL will maintain compliance with all applicable state and local requirements including zoning, fire protection, water pollution prevention, air pollution prevention, and nuisance control. CCFL will obtain and maintain a Conditional Use Permit according to the requirements of the Iron County Zoning Department. The CUP permit conditions and Circle Four's responses are included in Appendix I of this permit.

3 15 SAFETY

Landfill personnel will be required to participate in an ongoing safety program. This program complies with the Occupational Safety and Health Administration (OSHA), and the National Institute of Occupational Safety and Health (NIOSH) regulations as applicable. This program is designed to make the site and equipment as secure as possible and to educate landfill personnel about safe work practices.

3.16 EMERGENCY PROCEDURES

In the event of an accident or any other emergency situation, the Truck Driver or Operator will immediately contact the Manager and proceed as directed. If the Manager is not available, the Truck Driver or Operator will call the appropriate emergency numbers below.

- Iron County Central Dispatch 911
- Iron County Fire Department (435) 586-4408
- Iron County Sheriff's Office (435) 867-7550
- Beaver Valley Hospital (435) 438-7100
- Jim Webb, Environmental and Public Affairs Manager (435) 387-6046 (O)
- Jim Webb, Environmental and Public Affairs Manager (435) 691-0825 (C)

**APPLICATION FOR A PERMIT TO
OPERATE A CLASS IIIb LANDFILL**

**Circle Four Farms Landfill
Iron County, Utah**

PART HI - TECHNICAL REPORT

4 2 1 2	Surface Water	12
4 2 1 3	Leachate Collection and Treatment	12
4 2 1 4	Landfill Gas	12
4 2 1 5	Final Grading	12
4 2 2	<i>Run-On/Run-Off Systems</i>	13
4 3	<i>SCHEDULE OF POST-CLOSURE ACTIVITIES</i>	13
4 4	<i>POST-CLOSURE COST ESTIMATES</i>	13
4 5	<i>CHANGES TO RECORD OF TITLE, LAND USE, AND ZONING</i>	13
4 6	<i>POST-CLOSURE FACILITY CONTACTS</i>	13
4 7	<i>POST-CLOSURE LAND USE</i>	13
SECTION 5 – FINANCIAL ASSURANCE		14
5 1	<i>CLOSURE COSTS</i>	14
5 2	<i>POST-CLOSURE CARE COSTS</i>	14
5 3	<i>FINANCIAL ASSURANCE MECHANISM</i>	14
SECTION 6 – PROXIMATE PROPERTY OWNERS		15
6 1	<i>PROPERTY OWNERS</i>	15

SECTION 1 - ENGINEERING REPORT

1.1 LOCATION STANDARDS

The following sections present the Industrial Landfill Locations Standards, specifically for Class IIIb landfills and discuss the status of the CFFL compliance with those requirements

1.1.1 Floodplains

The DSHW regulations state that no new or existing facility shall be located in a floodplain unless the owner or operator demonstrates to the Executive Secretary that the unit will not restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the floodplain, or result in a washout of solid waste so as to pose a hazard to human health or the environment

1.1.1.1 CFFL Status

No floodplain mapping has been performed in this portion of rural Iron County. The CFFL is located on a broad, very gradually sloping plain with the run-on areas as indicated on Drawing 6 (Appendix A). The landfill will be constructed with a perimeter access road with a run-on control ditch. The nature of the site topography combined with a perimeter access road with a drainage ditch will prevent the landfill from being in a floodplain.

1.1.2 Wetlands

The DSHW regulations state that no new facility or lateral expansion of an existing facility shall be located in wetlands unless the owner or operator demonstrates to the Executive Secretary that several conditions be met:

1.1.2.1 CFFL Status

No permanent impoundments for surface water or perennial streams are located within a one-mile radius of the site. The site soil conditions and vegetation present indicate that the site is not a wetland.

1.1.3 Ground Water Requirements

DSHW location restrictions with respect to ground water specifies that for a landfill that is not required to install a liner, the lowest level of waste must be at least ten feet above the historical high level of ground water.

1.1.3.1 CFFL Status

The CFFL has installed three monitoring wells on the property. The location(s) of the wells are shown on Drawing 2 (Appendix A). Historical mapping showed groundwater flowing to the northeast, initial readings from the new wells show that groundwater is flowing in a north-northwest

direction Groundwater measured in these wells showed levels to be 25-38 feet below the existing site grade Trench excavation will not extend more than 7 feet below the existing surface grade meaning the lowest point of the bottom of the CFFL is at least 18 feet above the highest anticipated groundwater elevation Additional wells will be installed as needed in order to monitor groundwater at the site, Drawing 2 (Appendix A) shows the proposed location of future monitor wells

1.1.4 Historic Preservation Requirements

DSHW location requirements state that for each new facility or expansion of an existing facility shall

- (a) have a notice of concurrence issued by the state historic preservation officer,
- (b) show that the state historic preservation officer did not respond within 30 days to the submittal, to the officer, of an evaluation, or
- (c) or have received a joint analysis conducted

A site survey was completed by Montgomery Archaeological Consultants, Inc in April 2010 Their report and recommendations are included in Appendix D

1.1.4.1 CFFL Status

The 2009 letter from IGES to the Deputy State Historic Preservation Officer, 2010 letter from DSHW to the Deputy State Historic Preservation Officer, 2010 letter from the Deputy State Historic Preservation Officer to DSHW and the Cultural Resource Inventory (Montgomery Archaeological Consultants) are included in Appendix D

2.2 PHASED DESIGN - PROPOSED LANDFILL DEVELOPEMENT

The CFFL will be developed in Phases to allow for efficient operation of the facility while minimizing the area of the site that requires final cover maintenance The following sections discuss the development of the CFFL and the incremental filling of each of the Phases

2.2.1 Design and Operation

The CFFL will be operated in a series of Cells starting in the northeast corner of Phase 1 The operation of each of the Phases will be such that individual trenches will be excavated equal to the volume of waste generated daily For the sake of volume analysis and construction staging, the development of the landfill is broken into 2 Phases each with discrete closure cells and daily use trenches Drawing 7 and Drawing 8 (Appendix A) detail the extent of each Phase, the locations of the Cells within the first Phase, and the orientation of the disposal trenches

2.2.2 Liner Requirements

The CFFL is designed without a synthetic or compacted clay liner

2.2.3 Estimated Life

The projected waste stream from the CFFL operations in Beaver and Iron Counties is approximately 25 tons per day. The estimated landfill life assumes that there is no yearly increase in waste quantities and that one ton of dead pigs will occupy a volume of 1.25 cubic yards.

The landfill life projections are only estimates, the actual life of the landfill will depend on several variables including the actual rate of waste being delivered, densities, settlement and the potential use of daily cover materials. Disposal capacity of the individual trenches at the depth and spacing indicated on Drawing 7 and Drawing 8 result over 656,000 cubic yards that will last approximately 57 years. The following table details the landfill life by phase assuming that operations begin in 2011.

	Total Area (acres)	Total Cells	Days	Years	Complete in	
Cell 1	10	935	935	2.5	Jul - 2013	Phase 1
Cell 2	10	935	935	2.5	Feb - 2016	Phase 1
Cell 3	10	935	935	2.5	Sep - 2018	Phase 1
Cell 4	10	935	935	2.5	Apr - 2021	Phase 1
Cell 5	10	935	935	2.5	Oct - 2023	Phase 1
Cell 6	10	935	935	2.5	May - 2026	Phase 1
Cell 7	10	935	935	2.5	Dec - 2028	Phase 1
Cell 8	10	935	935	2.5	Jul - 2031	Phase 1
Cell 1	10	935	935	2.5	Jan - 2034	Phase 2
Cell 2	10	935	935	2.5	Aug - 2036	Phase 2
Cell 3	10	935	935	2.5	Mar - 2039	Phase 2
Cell 4	10	935	935	2.5	Sep - 2041	Phase 2
Cell 5	10	935	935	2.5	Apr - 2044	Phase 2
Cell 6	10	935	935	2.5	Nov - 2046	Phase 2
Cell 7	10	935	935	2.5	Jun - 2049	Phase 2
Cell 8	10	935	935	2.5	Dec - 2051	Phase 2
Cell 9	10	935	935	2.5	Jul - 2054	Phase 2
Cell 10	10	935	935	2.5	Feb - 2057	Phase 2
Cell 11	10	935	935	2.5	Sep - 2059	Phase 2
Cell 12	10	935	935	2.5	Mar - 2062	Phase 2
Cell 13	10	935	935	2.5	Oct - 2064	Phase 2
Cell 14	10	935	935	2.5	May - 2067	Phase 2

2.3 *DAILY, INTERMEDIATE AND FINAL COVER*

2.3.1 Daily and Intermediate Soil Cover

The minimum daily cover requirements landfills disposing of dead animal is a minimum of 6-inches. Soil cover is required for protection against odors, litter and vectors.

The operation of the CFFL will be such that only one disposal trench will be utilized per day, with the length of each trench being adjusted to create only sufficient volume for one day of operational waste. Excavation and stockpiling of soils will be performed in accordance with the requirements of 30 CFR § 56.3130 (*methods shall be used that will maintain wall, bank, and slope stability in places where persons work or travel in performing their assigned tasks. When benching is necessary, the width and height shall be based on the type of equipment used for cleaning of benches or for scaling of walls, banks, and slopes and § 56.573200 (Ground conditions that create a hazard to persons shall be taken down or supported before other work or travel is permitted in the affected area. Until corrective work is completed, the area shall be posted with a warning against entry and, when left unattended, a barrier shall be installed to impede unauthorized entry.)*) The excavations are not places where persons will work or travel in performing their assigned tasks at the landfill, however, a temporary hazard will exist when excavations are open. During the time when a trench is opened the area shall be posted with a warning against entry and, when left unattended, a barrier (soil berm) shall be installed around the open cell to impede unauthorized entry. Daily covering of each trench will consist of a minimum of 24-inches of soil rather than the DSHW minimum requirement of 6-inches. The operational system planned for the CFFL will provide all of the cover soils required for final cover so the incremental utilization of daily and intermediate cover will not be implemented as such.

The excavation of each trench will result in the deposit of a soil stockpile proximate to each trench. Each trench will be nominally 8-feet wide, 20-feet in length and no more than 7-feet deep. Workers will not enter open excavations deeper than 4 feet, cells will be filled/covered shortly after excavation. Vertical/near vertical side slopes may be used in construction of typical excavations. Near surface soils encountered during well installation consist of cohesive clay and would classify as OSHA "Type A" soil. If cells are to remain open for a period longer than 8 hours side walls should be therefore be sloped/benched to an overall slope of 0.5H to 1V (horizontal to vertical).

Dead animals will be placed in each trench to a point 1-foot below the original ground surface. Drawing 8 (Appendix A) illustrates the layout of a typical trench, the location of soil stockpiles and the depth of animal fills. Cover soils will be placed over each operational trench such that

12-inches of soil will be placed over the dead animals to bring the trench backfill to original grade with an additional 12-inches of soil mounded over the trench to provide a minimum of 24-inches of cover

The volume of soil excavated from each disposal trench will result in an excess of soil being stockpiled in the areas between the trenches. As designed, approximately 56 cubic feet of soil will be excavated per lineal foot of disposal trench excavation. Approximately 16 cubic feet of soil (2 foot deep by 8 foot wide) will be utilized as cover soils and approximately 40 cubic feet of soil stockpiled for future use as the hogs decay.

2.3.2 Alternate Daily Cover

CCFL does not intend to utilize alternate daily cover.

2.3.3 Final Cover

The final cover to be utilized at the CCFL is as described in Section 2.3.1.

2.4 MONITORING SYSTEMS

2.4.1 Ground Water Monitoring System

As a Class IIIb landfill the CCFL is not required to monitor for groundwater, however, after discussions with the DEQ and County Officials CCFL has installed a monitoring system for the landfill. Based on historical mapping of groundwater levels three wells were installed at the site: one up gradient (background) and two down gradient of the property. The existing well locations are shown on Drawing 2 (Appendix A). Additional wells will be installed as data is collected to verify the direction of groundwater flow prior to accepting any waste in Phase 1.

2.4.2 Leachate Monitoring

The CCFL will be a Class IIIb landfill and not required to collect or manage leachate.

2.4.3 Landfill Gas

The CCFL will be a Class IIIb landfill and not required to collect or manage landfill gas.

2.5 DESIGN AND LOCATION OF RUN-ON/RUN-OFF CONTROL SYSTEMS

The main objectives of surface water management for the landfill operation are to provide adequate landfill drainage, to prevent off site run-on, preventing unnecessary surface water infiltration and subsequent leachate production, to contain surface run-off from open areas on-site, and to prevent erosion. DSHW regulations require: 1) A run-on control system to prevent flow onto the active portion of the landfill during the peak discharge from a 24-hour, 25-year storm, and 2) Run-off control system from the active portion of the landfill to collect and to control at least the water

volume resulting from a 24-hour, 25-year storm Drawing 5 details the 24-hour, 25-year storm event and the associated discharges Drawing 6 (Appendix A) presents the details of the stormwater system analysis

SECTION 3 – CLOSURE PLAN

3.1 CLOSURE STRATEGY/SCHEDULE

This section describes the final cover construction, site capacity, schedule of closure implementation, estimated costs for closure, and final inspection procedures for the closure Stages at the CFFL

The Executive Secretary will be notified in writing at least 60 days prior to the anticipated last receipt of waste in accordance with R315-302-3(4)(a) Implementation of the final closure Stage will begin within 30 days after last receipt of waste within each cell Final closure of the entire landfill will be completed within 180 days of implementation of closure activities, unless an extension has been granted by the Executive Secretary Closure will occur incrementally Each landfill cell will be closed once it has been filled to design capacity

To estimate the landfill life and project the timing of constructed projects, engineering assumptions about the extent of each phase (and the cells within each phase) were made to be able to calculate volumes and associated landfill life The length of time that each phase will be in service will depend upon the day to day operation of the landfill and will vary from the specific dates of closure presented previously

The closure of the CFFL will be completed in accordance with this plan Closure activities will be performed in such a manner as to accomplish the following goals

- minimize the need for further maintenance,
- minimize the disturbed area (10 acres max),
- minimize or eliminate threats to human health and the environment from post-closure escape of waste constituents or waste decomposition products to the ground, ground water, surface water, or the atmosphere, and,
- adequately prepare the facility for the post-closure period

3.2 FINAL COVER DESIGN AND INSTALLATION

3.2.1 Final Cover – General

Although no structures are currently planned for the CFFL, a few minor storage structures may be constructed in the future if required to support the landfill operation Any structures at the site which remain after the final receipt of waste, and which will not be an integral part of post-closure site maintenance, will be dismantled and removed from the site

Each row of disposal trenches will be surveyed prior to excavation to provide for a uniform trench layout and to aid in the final cover documentation. Rough contouring of the site will be performed as part of ongoing operations throughout the life of the site with the final contouring being performed during the closure of each cell. Excess soils stockpiled during the initial excavation of the disposal trenches will be mounded over the disposal trenches to provide positive drainage.

Formal final cover at the CFFL will be completed in two phases (consisting of 14 individual cells). Although final cover will be placed daily over each disposal trench, formal documentation of final cover construction will be completed following completion of each cell. As a result, the largest area of the landfill which will require closure construction activities at any given time during the life of the landfill will be the area encompassed by one cell, with each cell being approximately 10 acres. Each cell of closure construction will be documented by a professional engineer registered in the State of Utah.

3.2.2 Final Cover – Design

As described above, the final cover will consist of an initial 24-inch soil cover overlain by additional soils as part of the phased closure which will be graded so as to prevent ponding and minimize infiltration.

Drainage channels and diversion ditches associated with roads are sized to accommodate the flow from a 25-year, 24-hour storm event. Drawing 6 (Appendix A) details the storm water assessment for the CFFL operation. Due to the perimeter access road which will contain water during the landfill's operation, no run-off is anticipated.

3.3 *SEED, FERTILIZER AND MULCH*

The top 6-inches of the final cover will be utilized to sustain vegetation. The vegetative layer of the cap will be seeded with a mixture of grasses suitable for fast growth in the region. In order to maximize the effectiveness of seeding efforts, disturbed areas will be seeded on an as-needed basis. A final seed mix has not been determined, however, based on discussions with the Iron County Extension and the Utah NRCS office the mix should contain a combination of Crested Wheat Grass, Great Basin Wild Rye and Russian Wild Rye that are drill seeded. "Dormant" seeding practices will be followed in the late fall after soil temperatures are consistently below 40°F. Forage Kochia seeds may also be broadcast seeded as an additional natural means of fire suppression.

Early establishment of vegetation on the landfill's final slope surface will impede soil erosion and promote evapotranspiration. CFFL staff will periodically evaluate vegetative growth, vigor,

and color so that the integrity of the final cover system is maintained. If signs of vegetative stress are observed, modifications to the revegetation plan will be made. CFFL staff or a licensed landscape contractor will make repairs, as necessary.

3.4 LANDSCAPING

The landfill site, including all Circle Four Farms surrounding grounds, will be maintained in conjunction with the Closure Plan and Post-Closure Plan. The final landscape of the landfill will be designed to be both functional and low maintenance. Efforts in this regard will be coordinated with the Bureau of Land Management's office in Cedar City so that any imported seed mix and plan revegetation for meets their recommendations.

3.5 FINAL COVER CONTOURS

The landfill's final grades will be inspected and maintained in order to ensure its integrity and conformity with the conceptual final cover plans.

Any areas where water has collected (ponded) will be regraded. Erosion damage (though very unlikely due to the gentle topography) resulting from extremely heavy rainfall will be repaired if they are observed. CFFL staff will inspect the final grading no less than quarterly.

3.6 QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

For construction of the final landfill cover, drawings, specifications and QA/QC procedures will be developed by a Utah licensed Professional Engineer and submitted to the State of Utah DSHW for review and approval prior to construction of each closure cell.

3.7 CLOSURE COST ESTIMATES

The current cost estimates for each of the closure phase of the CFFL operation are provided in Appendix J – Closure/Post Closure Costs.

3.8 CERTIFICATION OF CLOSURE AND RECORD KEEPING

A Utah licensed Professional Engineer will be retained to observe the closure of each of the final cover cells. The registered engineer will be employed by CFFL, or will be a CFFL-hired consultant and will certify the landfill was closed according to the closure plan. Any amendment or deviation to the closure plan will be approved by the Executive Secretary and any associated permit modifications will be made. Final closure work and documentation will be observed and reviewed by DSHW personnel as necessary.

As part of the certification process, the engineer shall also provide closure as-built drawings to the Executive Secretary within 90 days following completion of closure activities.

Additionally, the final plats and the amount and location of waste will be recorded on the site title
The owner will file the notanzed plat with the County Recorder withm 60 days following
certification of closure

SECTION 4 – POST-CLOSURE CARE PLAN

4.1 *MONITORING PROGRAM*

Post closure activities will begin when final cover closure for each phase is approved by the Executive Secretary. The following presents the post-closure plan for the CFFL facility. The following subsections offer a description of the monitoring programs applicable to the CFFL facility.

4.1.1 Groundwater

The installed groundwater monitoring system will remain in operation for 30 years after final closure of the landfill. At present this system consists of three wells, but may be expanded as the landfill grows and more data regarding the quality of, depth to and flow direction of groundwater is obtained. The costs for this monitoring have been approximated as presented in Appendix J.

4.1.2 Surface Water

Although no surface water sampling activities are scheduled for the landfill, CFFL staff will inspect the drainage system no less than quarterly. Temporary repairs to any observed damage will be made until permanent repairs can be scheduled. CFFL or a licensed general contractor will replace drainage facilities, if necessary. CFFL will develop a Storm Water Pollution Prevention Plan (SWPPP) prior to the start of operation.

4.1.3 Leachate Collection and Treatment

A leachate collection system is not anticipated to be required for the CFFL, therefore no monitoring will be required.

4.1.4 Landfill Gas

Landfill gas monitoring is not anticipated to be required for the CFFL, therefore no monitoring will be required.

4.2 *MAINTENANCE PROGRAM*

The following subsections offer a description of the routine maintenance to be performed in association with post-closure care of the CFFL.

4.2.1 Monitoring Systems

4.2.1.1 Ground water

Maintenance of the installed wells will consist of inspections conducted during annual groundwater sampling. The use of dedicated pumps is not anticipated in any of the existing or future wells at the site, samples will be collected with bailers. Inspections will verify the depth of installed wells. If wells become inundated with sediment they will be cleaned to maintain their original depth.

4.2.1.2 Surface Water

Drainage control problems can result in accelerated erosion of a particular area within the landfill. Potential settlement over the disposal trenches can limit the usefulness of the final cover and may result in increases in infiltration.

Implementation of a post-closure maintenance program will maintain the integrity of the final cover system throughout the post-closure maintenance period. The final cover will be evaluated and inspected, no less than quarterly, for ponded water and settlement of disposal trenches. Where drainage problems are noted or erosion is observed, proper maintenance procedures will be implemented as soon as site conditions permit so that further damage will be prevented.

CFFL staff will inspect the cover system no less than quarterly. Temporary repairs will be made until permanent repairs can be scheduled. CFFL or a licensed general contractor will replace damaged facilities.

4.2.1.3 Leachate Collection and Treatment

No system is anticipated to be installed, therefore no maintenance will be required.

4.2.1.4 Landfill Gas

No system is anticipated to be installed, therefore no maintenance will be required.

4.2.1.5 Final Grading

The landfill cover final grade will be inspected no less than quarterly and maintained in order to preserve its integrity. Evaluation and inspection of the cover final grades will include evaluations of vegetation and overall system performance.

Areas where disposal trenches have settled and water has the potential to collect, additional soil will be added to create a positive drainage. Erosion damage resulting from extremely heavy rainfall will be repaired.

4.2.2 Run-On/Run-Off Systems

The primary feature managing potential run-on and run-off will be the perimeter access road and the associated ditches. The condition and operation of the access roads and ditches will be observed no less than quarterly.

4.3 SCHEDULE OF POST-CLOSURE ACTIVITIES

Post-closure activities, consisting of monitoring and maintaining the final cover and permanent drainage facilities, will be implemented periodically as each phase of the landfill is closed.

4.4 POST-CLOSURE COST ESTIMATES

Cost estimates for post-closure care for the CFFL facilities are presented in Appendix J.

4.5 CHANGES TO RECORD OF TITLE, LAND USE, AND ZONING

CFFL will notify the County Recorder's Office at any such time when there is a change to the Record of Title, land use plan, or zoning restrictions. In addition, CFFL will notify the Recorder at that time when the post-closure care period has expired.

4.6 POST-CLOSURE FACILITY CONTACTS

For all post-closure care information, all contact will be through the Circle Four Farms or a designee. Contact with Circle Four Farms will be at the following number:

Environmental and Public Affairs Manager

(435) 387-6046

4.7 POST-CLOSURE LAND USE

Circle Four Farms will select an end use that will be limited to those that do not threaten the integrity of the existing control systems. All activities will be approved by the appropriate cities/agencies prior to implementation. Since the closure of the first phase of the landfill will be over 20 years away, it is not currently possible to develop those land use plans to be consistent with surrounding land uses and the needs of the area that may be relevant at that future time.

SECTION 5 – FINANCIAL ASSURANCE

5.1 CLOSURE COSTS

Cost estimates have been developed for the closure phases at CFFL Appendix J contains the closure cost data for the CFFL Closure costs will be updated each year and submitted with the Annual Report

5.2 POST-CLOSURE CARE COSTS

Cost estimates have been developed for the post-closure care period at CFFL Appendix J contains the post-closure cost data for the CFFL Post-Closure costs will be updated each year and submitted with the Annual Report

5.5 FINANCIAL ASSURANCE MECHANISM

Financial assurance for closure construction and post-closure maintenance will be provided through a third-party guarantee provided by Circle Four Farms prior to acceptance to waste The details of the Circle Four Farms financial assurance mechanism are included in Appendix K – Financial Assurance

SECTION 6 – PROXIMATE PROPERTY OWNERS

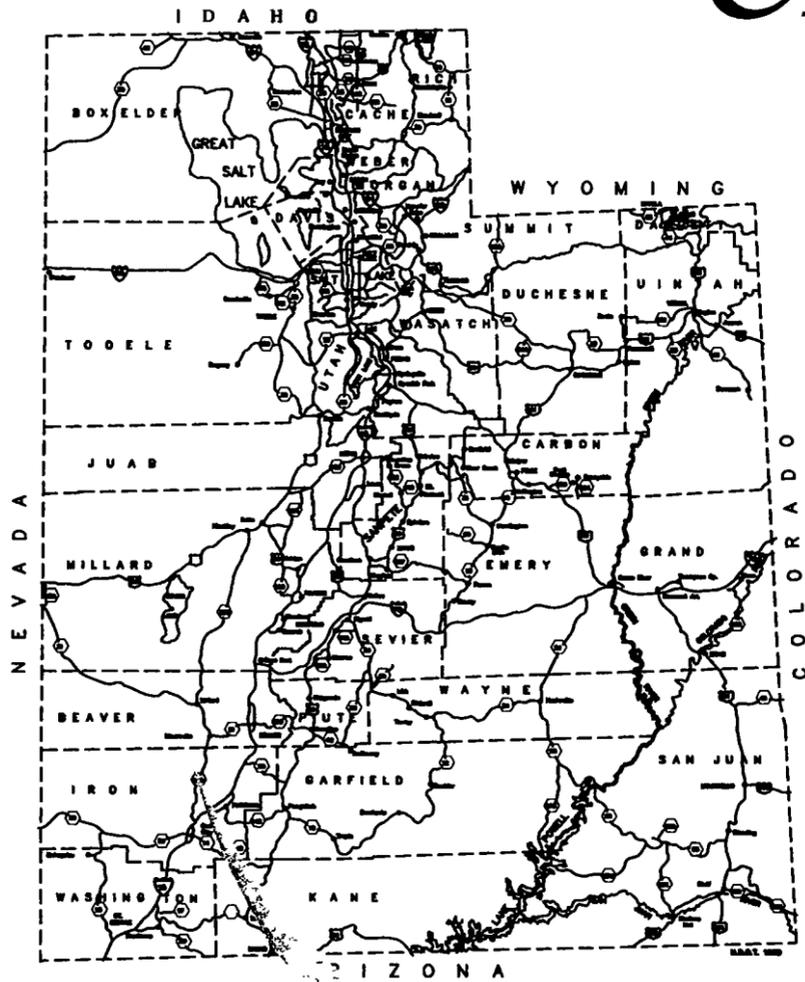
6.1 PROPERTY OWNERS

There have been seven property owners identified near the proposed landfill. Drawing 3 (Appendix A) indicates the parcels with regard to the location of the proposed landfill. Appendix L has a list of property owners and property identification number as well as a copy of the letter sent to each of the owners.

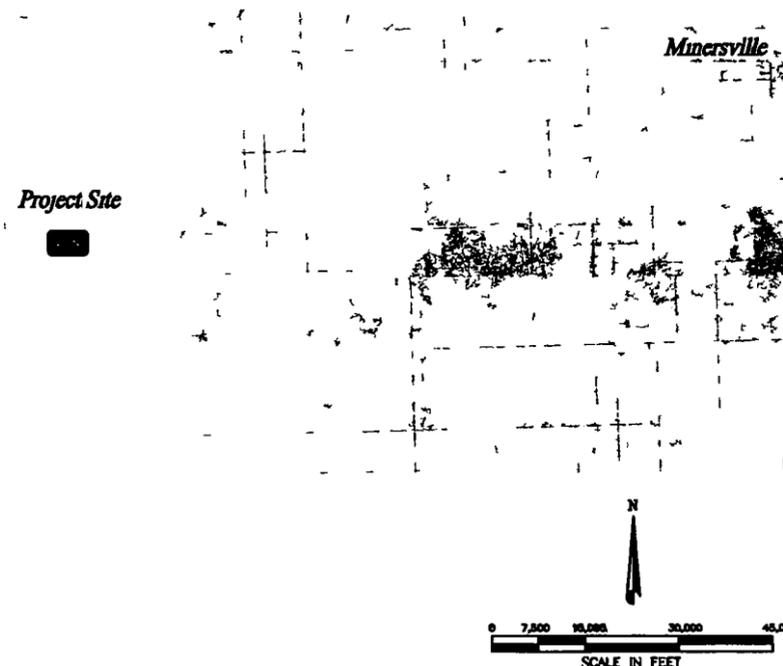
Appendix A

CIRCLE FOUR FARMS

Class IIIb Landfill Iron County, Utah



LIST OF DRAWINGS	
SHEET	DRAWING NAME
1	TITLE SHEET
2	GENERAL ARRANGEMENT
3	PROPERTY OWNERSHIP
4	IRON COUNTY LAND USE
5	IRON COUNTY ZONING
6	STORMWATER
7	PAHSED CONSTRUCTION
8	SECTION VIEW & DETAILS



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ideas for a changing world

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MARK	DATE	DESCRIPTION
	06/11/10	REVISION 1
	01/25/10	FINAL
	05/01/09	FINAL DRAFT

ISSUE	
PROJECT NO	01260-001
CAD DWG FILE	01260-001/CA_Base.dwg
DRAWN BY	JAH
DESIGNED BY	BCW
CHECKED BY	JW
COPYRIGHT	IGES 2010

SHEET TITLE
CIRCLE 4 FARMS
TITLE SHEET

X:\PROJECTS\01...01 Circle Four Farms\C4 Base June 2010 (11x17) dwg 6/9/2010 9:06:24 AM

REF: E. E.
LGS2 MINUTE DRA LE SERIES
THERMO BURN E. OLL. LATIMER. BADOER CREEK. UT H



CIRCLE 4 FARMS
341 S MAIN STREET
MILFORD UT 84751

CONSULTANTS



ideas for a changing world

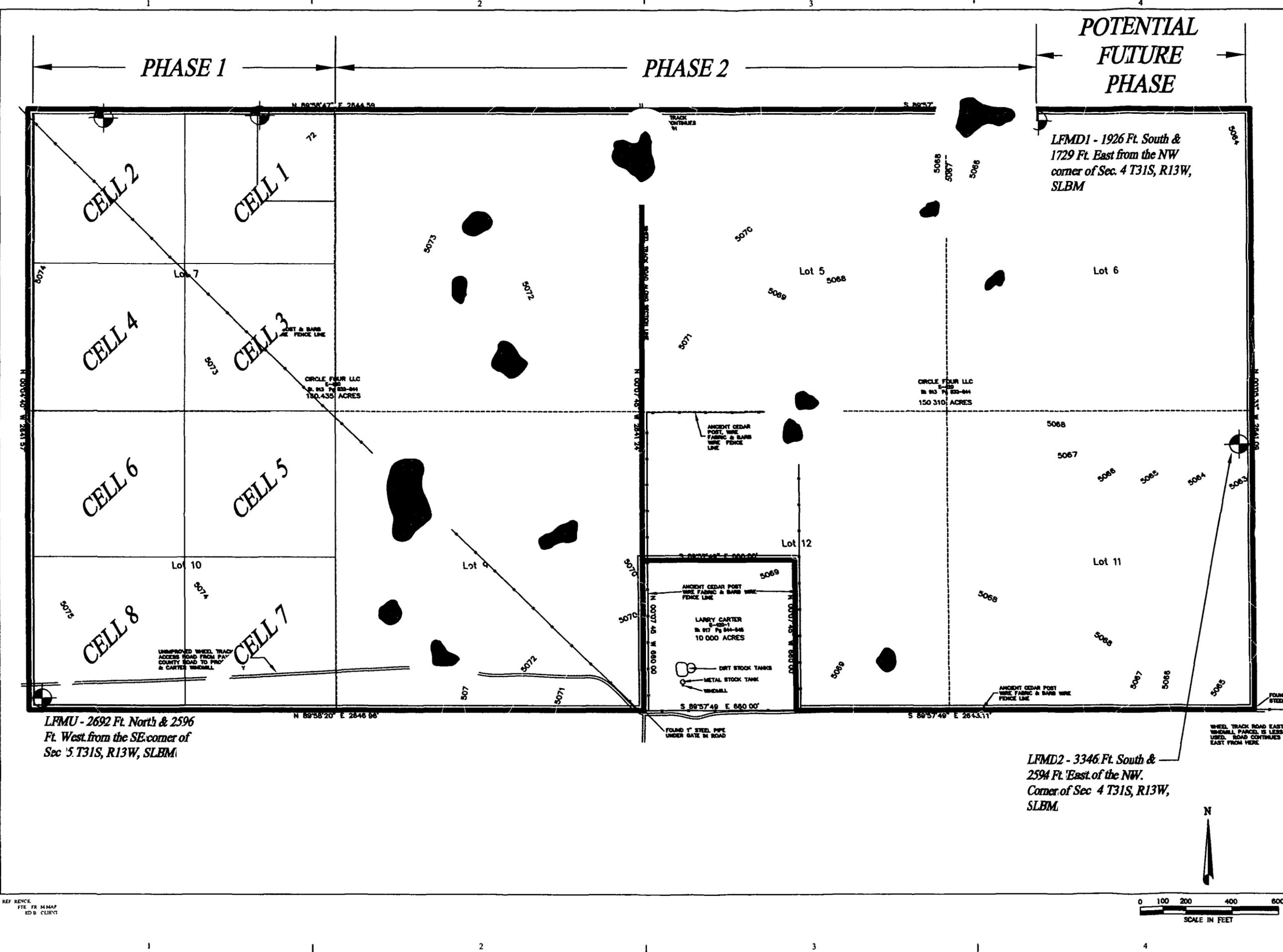
4153 South Commerce Drive
Salt Lake City Utah 84107
(801)270-9400 Fax (801)270-9401

- GROUNDWATER MONITORING WELL (EXISTING)
- GROUNDWATER / CRYSTALIZING WELL (PROPOSED)
- ARCHAEOLOGICAL SITES WITH 100 FT BUFFER

MARK	DATE	DESCRIPTION
	06/11/10	REVISION 1
	01/25/10	FINAL
	05/01/09	FINAL DRAFT

ISSUE	
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DRAWN BY	JAH
DESIGNED BY	BDM
CHECKED BY	JW
COPYRIGHT	IGES 2010

SHEET TITLE
**CIRCLE 4 FARMS
GENERAL
ARRANGEMENT**



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REF RENEC
FILE FR MMAP
EDS CLIENT



CIRCLE 4 FARMS
341 S MAIN STREET
MILFORD UT 84761

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Salt Lake City Utah 84107
(801)270-9400 Fax: (801)270-9401

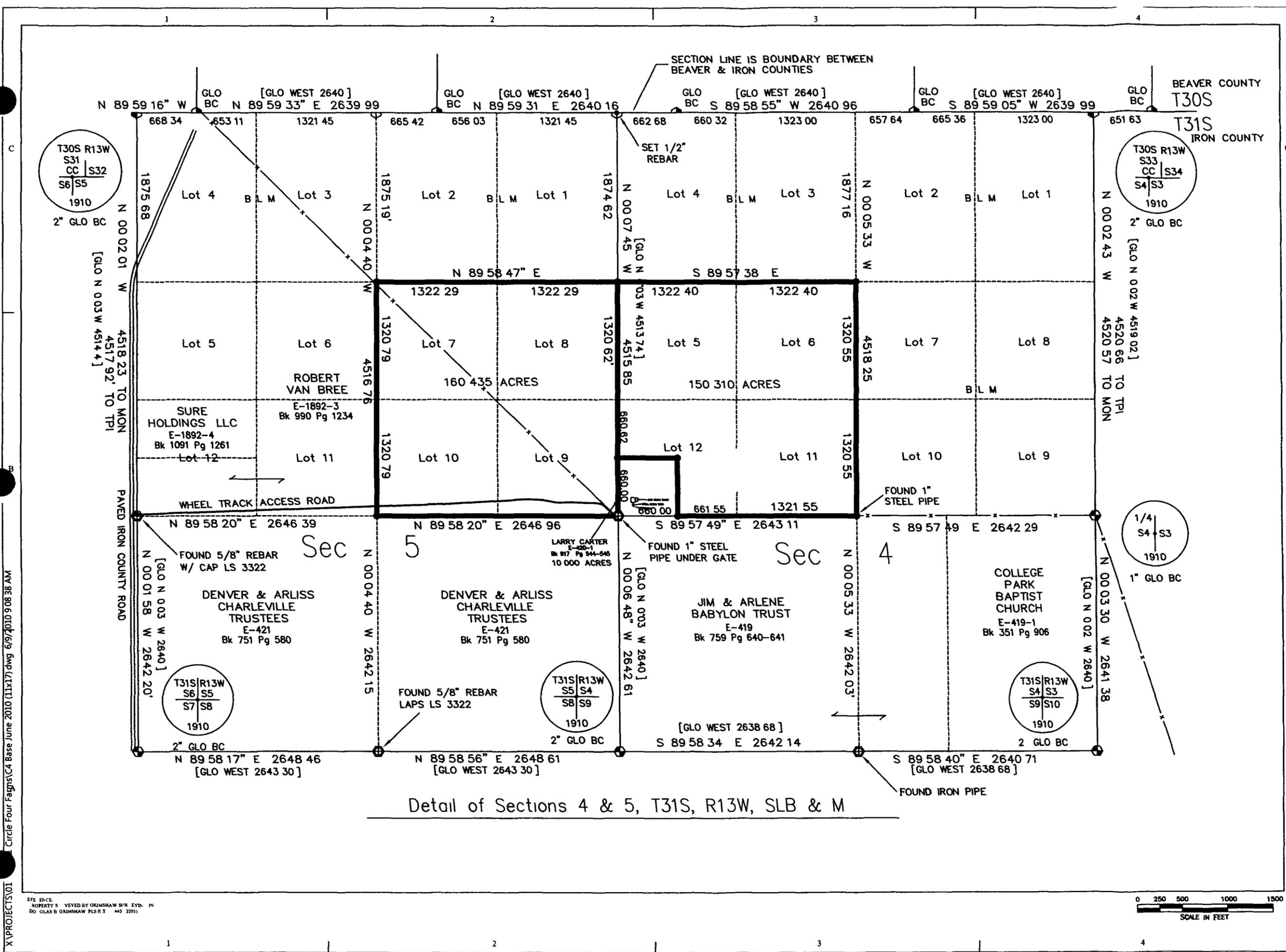
NOTES

PROPERTY BOUNDARY

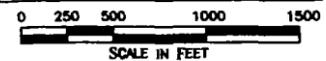
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	01/25/10	FINAL
	05/01/09	FINAL DRAFT

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CAD DWG FILE	01260-001/CA Base.dwg
DRAWN BY	JAH
DESIGNED BY	BOM
CHECKED BY	JW
COPYRIGHT	IGES 2010

SHEET TITLE
CIRCLE 4 FARMS
PROPERTY
OWNERSHIP

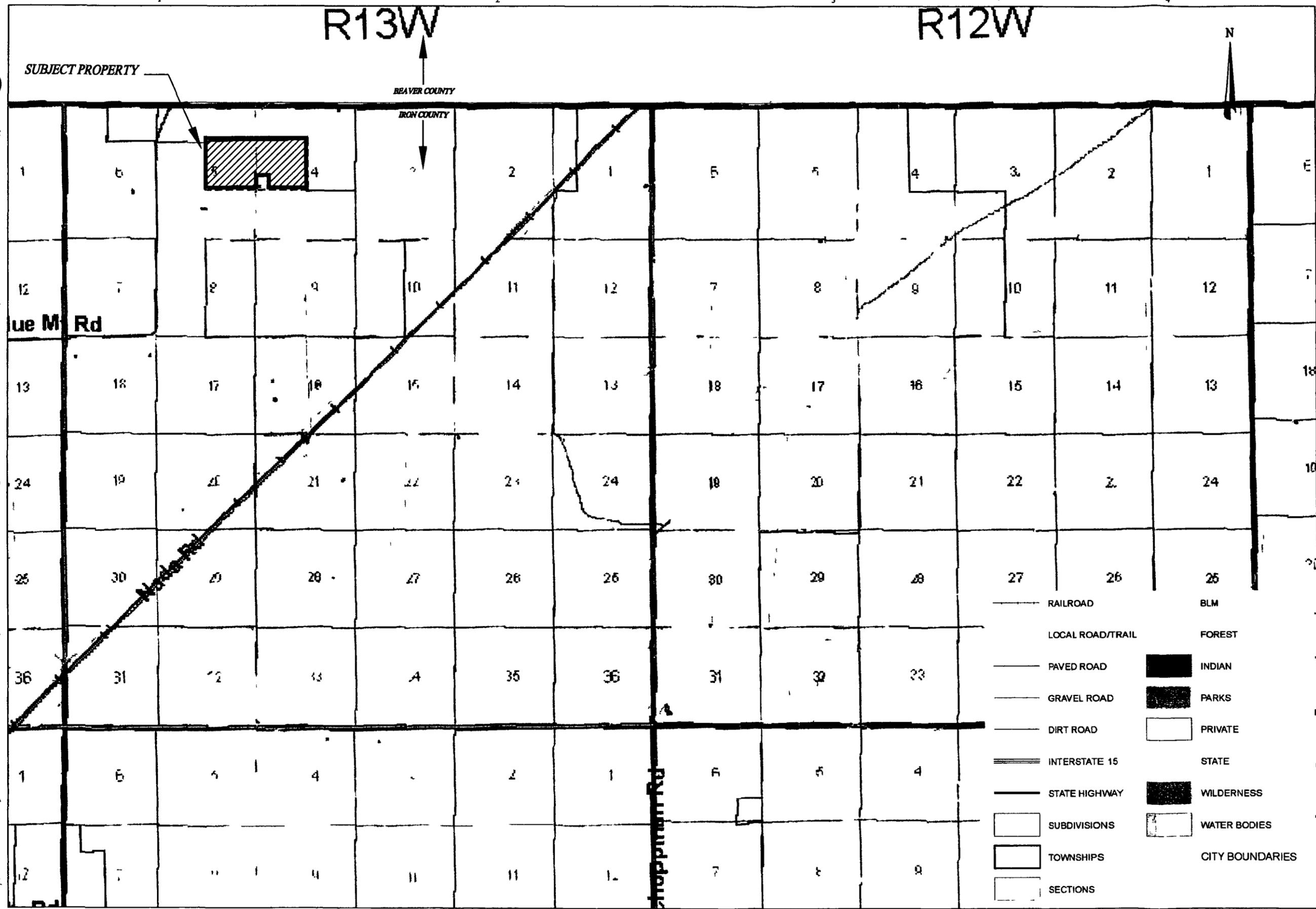


Detail of Sections 4 & 5, T31S, R13W, SLB & M



X:\PROJECTS\01 Circle Four Farms\C4 Base June 2010\111117.dwg 06/09/10 09:08:38 AM

EFE ENCL.
PROPERTY SURVEYED BY GRIMSHAW S&R EYD, INC.
DO: GLAS B GRIMSHAW PLS RT 445 2201



SUBJECT PROPERTY

R13W

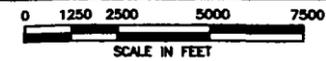
R12W

BEAVER COUNTY

IRON COUNTY

Blue Mt Rd

- RAILROAD
- LOCAL ROAD/TRAIL
- PAVED ROAD
- GRAVEL ROAD
- DIRT ROAD
- INTERSTATE 15
- STATE HIGHWAY
- SUBDIVISIONS
- TOWNSHIPS
- SECTIONS
- BLM
- FOREST
- INDIAN
- PARKS
- PRIVATE
- STATE
- WILDERNESS
- WATER BODIES
- CITY BOUNDARIES



CIRCLE 4 FARMS
341 S MAIN STREET
MILFORD UT 84751

CONSULTANTS



ideas for a changing world

4153 South Commerce Drive
Salt Lake City Utah 84107
(801)270-9400 Fax: (801)270-9401

MARK	DATE	DESCRIPTION
	06/11/10	REVISION 1
	01/25/10	FINAL
	05/01/09	FINAL DRAFT

ISSUE	
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CAD DWG FILE	01260-001/04 Base.dwg
DRAWN BY	JMJ
DESIGNED BY	BDW
CHECKED BY	JW
COPYRIGHT	IGES 2010

SHEET TITLE
**CIRCLE 4 FARMS
IRON COUNTY
LAND USE**

X:\PROJECTS\01260\C4 Base June 2010 (11x17).dwg 6/9/2010 9:08:57 AM

REFERENCE
ZONING MAP PREPARED BY IRON COUNTY IS DEPARTMENT
PROVIDED BY CLIENT

R14W R13W R12W



CIRCLE 4 FARMS
341 S MAIN STREET
MILFORD UT 84751

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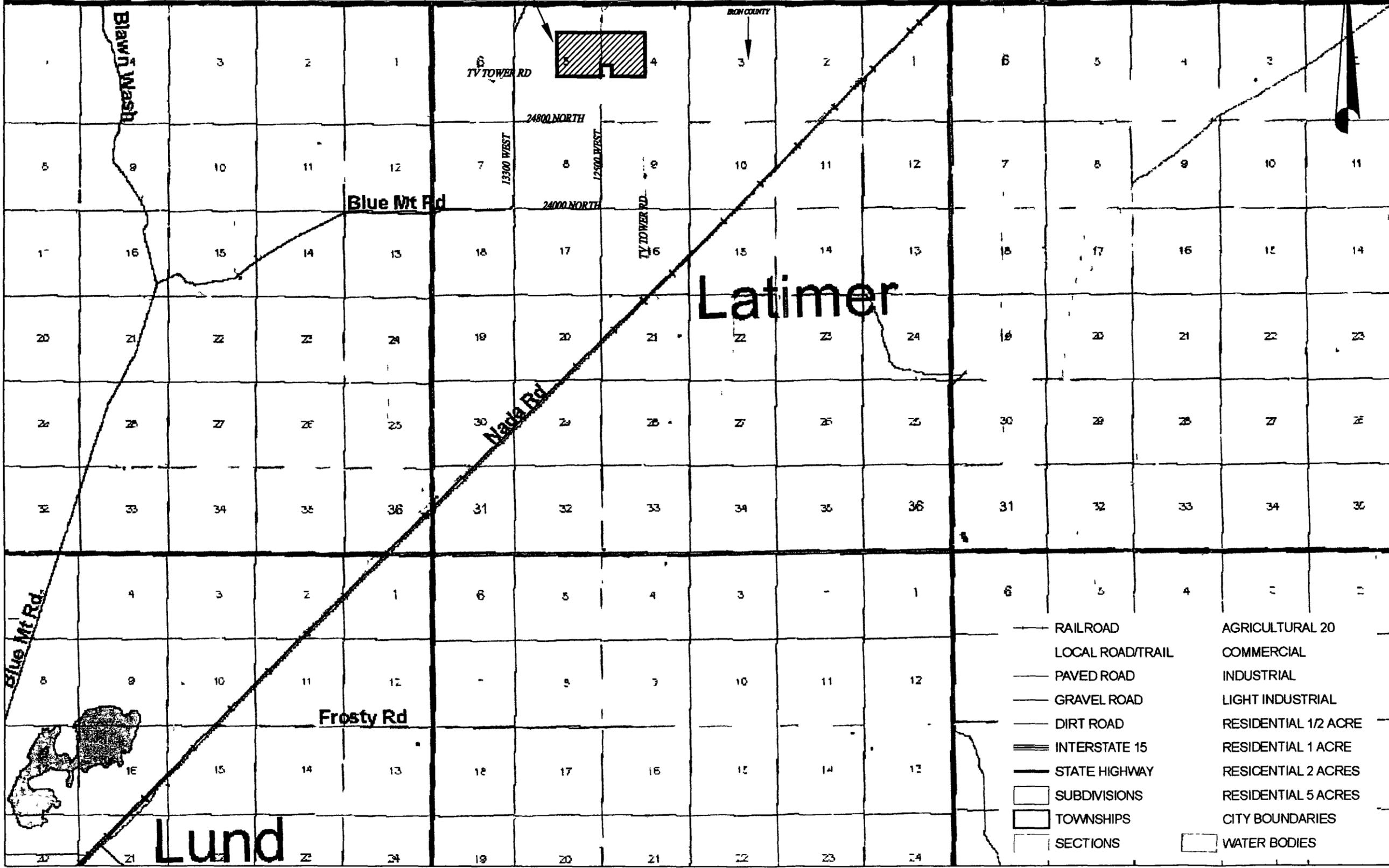
NOTES

Subject property is currently zoned
as Agricultural 20 (A 20)

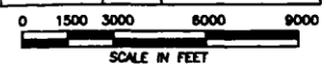
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	05/01/09	FINAL DRAFT

PROJECT NO	01260-001
CAD DWG FILE	01260-001/C4_Base.dwg
DRAWN BY	JAH
DESIGNED BY	BDM
CHECKED BY	JW
COPYRIGHT	IGES 2010

SHEET TITLE
CIRCLE 4 FARMS
IRON COUNTY
ZONING



- RAILROAD
- LOCAL ROAD/TRAIL
- PAVED ROAD
- GRAVEL ROAD
- DIRT ROAD
- INTERSTATE 15
- STATE HIGHWAY
- SUBDIVISIONS
- TOWNSHIPS
- SECTIONS
- AGRICULTURAL 20
- COMMERCIAL
- INDUSTRIAL
- LIGHT INDUSTRIAL
- RESIDENTIAL 1/2 ACRE
- RESIDENTIAL 1 ACRE
- RESIDENTIAL 2 ACRES
- RESIDENTIAL 5 ACRES
- CITY BOUNDARIES
- WATER BODIES



X:\PROJECTS\01_Circle Four Farms\C4 Base June 2010 (11x17).dwg 6/9/2010 9:09:34 AM

REFERENCE:
ZONING MAP PREPARED BY IRON COUNTY GIS DEPARTMENT
ROADS DEDICATED BY CLIENT



CIRCLE 4 FARMS
341 S MAIN STREET
MILFORD UT 84751

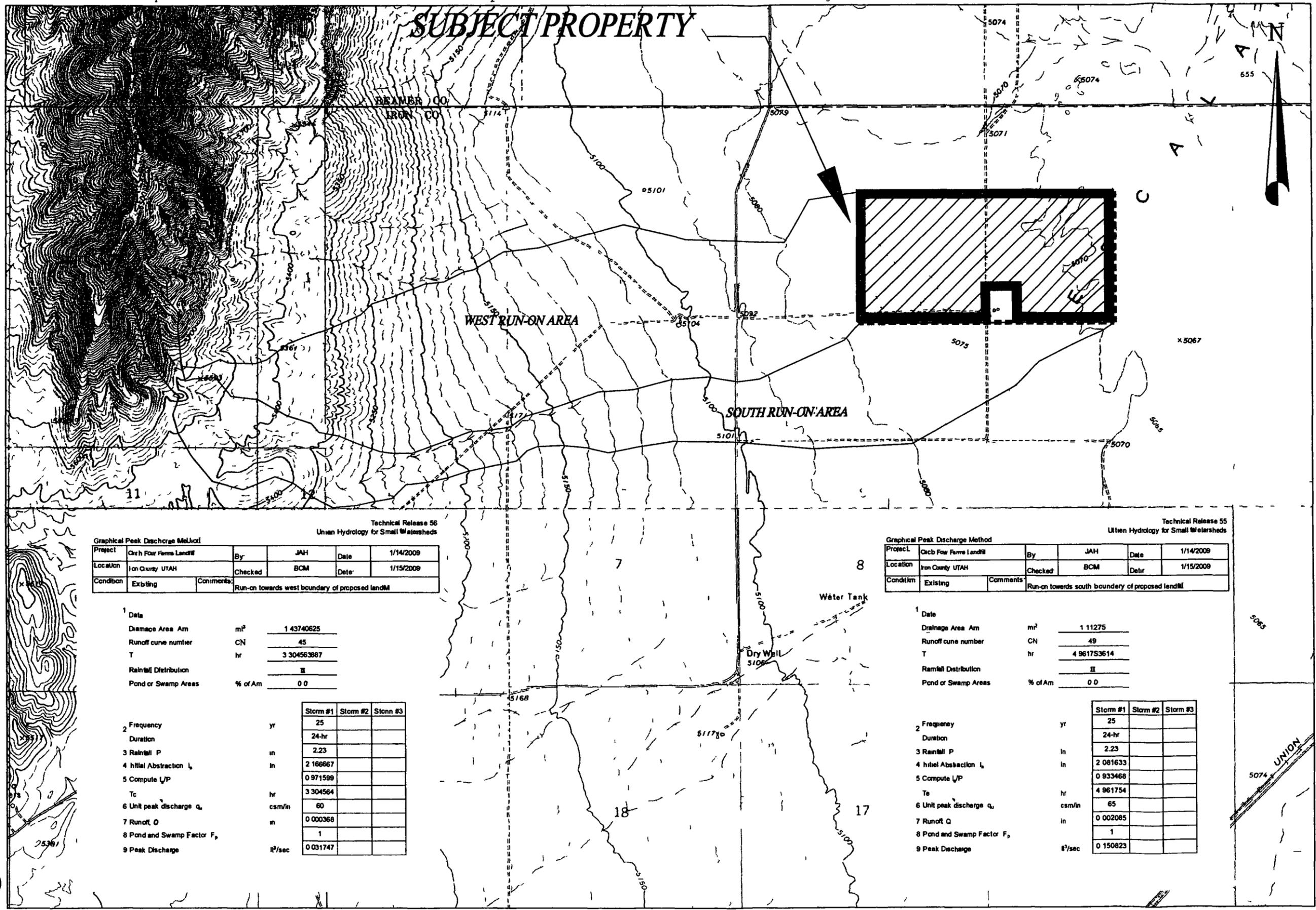
CONSULTANTS



ideas for a changing world

4153 South Commerce Dr
Salt Lake City Utah 84107
(801)270-9400 Fax. (801)270-9401

SUBJECT PROPERTY



Technical Release 56
Urban Hydrology for Small Watersheds

Graphical Peak Discharge Method		Project	Circle Four Farms Landfill	By	JAH	Date	1/14/2009
		Location	Iron County UTAH	Checked	BCM	Date	1/15/2009
		Condition	Existing	Comments	Run-on towards west boundary of proposed landfill		

1 Data

Drainage Area Am	mi ²	1.43740625
Runoff curve number	CN	45
T	hr	3.304563887
Rainfall Distribution		II
Pond or Swamp Areas	% of Am	0.0

2 Frequency

	Storm #1	Storm #2	Storm #3
25 yr			
Duration	24-hr		
3 Rainfall P	2.23		
4 Initial Abstraction I _a	2.16667		
5 Compute I/P	0.971599		
T _c	3.304564		
6 Unit peak discharge q _u	60		
7 Runoff Q	0.000368		
8 Pond and Swamp Factor F _p	1		
9 Peak Discharge	0.031747		

Technical Release 55
Urban Hydrology for Small Watersheds

Graphical Peak Discharge Method		Project	Circle Four Farms Landfill	By	JAH	Date	1/14/2009
		Location	Iron County UTAH	Checked	BCM	Date	1/15/2009
		Condition	Existing	Comments	Run-on towards south boundary of proposed landfill		

1 Data

Drainage Area Am	mi ²	1.11275
Runoff curve number	CN	49
T	hr	4.961753614
Rainfall Distribution		II
Pond or Swamp Areas	% of Am	0.0

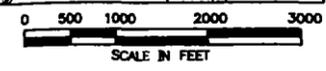
2 Frequency

	Storm #1	Storm #2	Storm #3
25 yr			
Duration	24-hr		
3 Rainfall P	2.23		
4 Initial Abstraction I _a	2.081633		
5 Compute I/P	0.933468		
T _c	4.961754		
6 Unit peak discharge q _u	65		
7 Runoff Q	0.002085		
8 Pond and Swamp Factor F _p	1		
9 Peak Discharge	0.150823		

NOTES

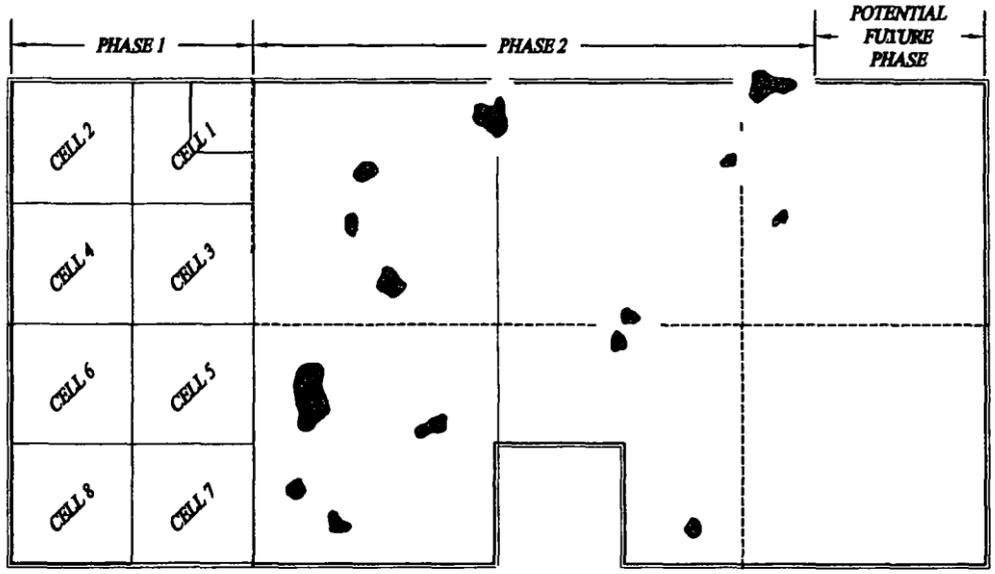
06/11/10	REVISION 1	
01/25/10	FINAL	
05/01/09	FINAL DRAFT	
MARK	DATE	DESCRIPTION
ISSUE		
PROJECT NO	01260-001	
CAD DWG FILE	01260-001/C4 Storm.dwg	
DRAWN BY	JAH	
DESIGNED BY	BCM	
CHECKED BY	JAH	
COPYRIGHT	IGES, 2010	

SHEET TITLE
CIRCLE 4 FARMS
STORM-WATER

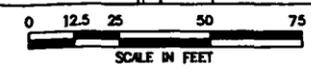
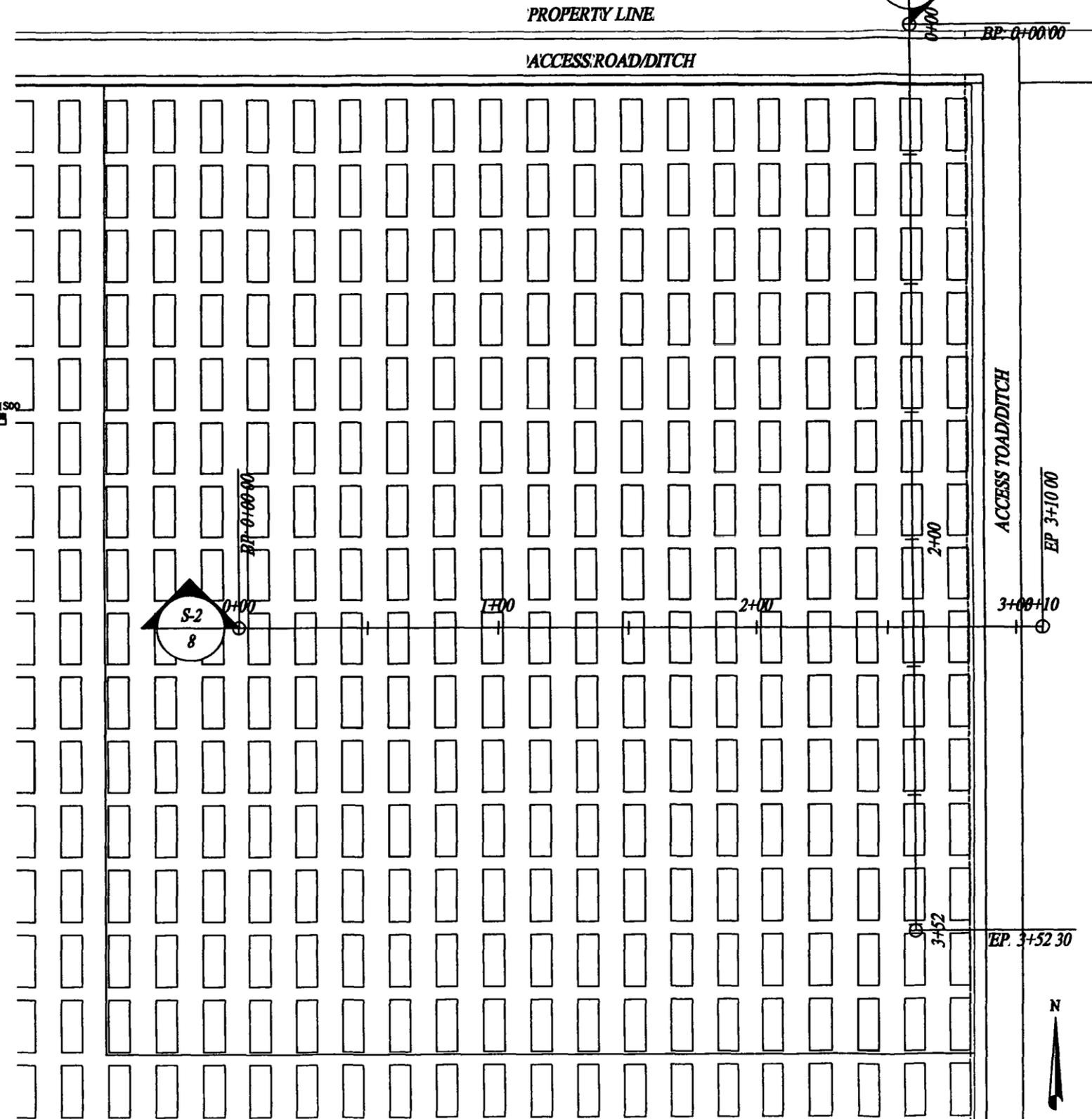


X:\PROJECTS\01260\C4 Base June 2010 (11x17) dwg 6/9/2010 9:09:54 AM

NORTHEAST CORNER OF PHASE 1, CELL 1 CONCEPTUAL TRENCH LAYOUT



LANDFILL PHASE &
CELL DEVELOPMENT



CIRCLE 4 FARMS
341 S MAIN STREET
MILFORD UT 84751

CONSULTANTS



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4153 South Commerce Drive
Salt Lake City Utah 84107
(801)270-9400 Fax (801)270-9401



ARCHAEOLOGICAL SITE
WITH 100' BUFFER



INDIVIDUAL TRENCH

MARK	DATE	DESCRIPTION
	06/11/10	REVISION 1
	01/25/10	FINAL
	05/01/09	FINAL DRAFT

ISSUE	
PROJECT NO	01260-001
CAD DWG FILE	01260-001/CA_Boss.dwg
DRAWN BY	JWH
DESIGNED BY	BDM
CHECKED BY	JW
COPYRIGHT	IGES 2010

SHEET TITLE

CIRCLE 4 FARMS
PHASED
CONSTRUCTION

X:\PROJECTS\01... Circle Four Farms\C4 Base June 2010 (11x17) dwg 6/11/2010 8:47:56 AM

REFERENCE
DIPLOMA FROM MAP
PROVIDED BY CLIENT



CIRCLE 4 FARMS
341 S MAIN STREET
MILFORD UT 84751

CONSULTANTS



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4753 South Commerce Drive
Salt Lake City Utah 84107
(801)270-9400 Fax: (801)270-9401

PROPERTY LINE ACCESS ROAD (SEE SECTION 3)

5055

5055



ELEVATION VIEW - TRENCH EXCAVATION PLAN (NORTH-SOUTH)
NOT TO SCALE

5045

5045



ELEVATION VIEW - TRENCH EXCAVATION PLAN (WEST-EAST)
NOT TO SCALE

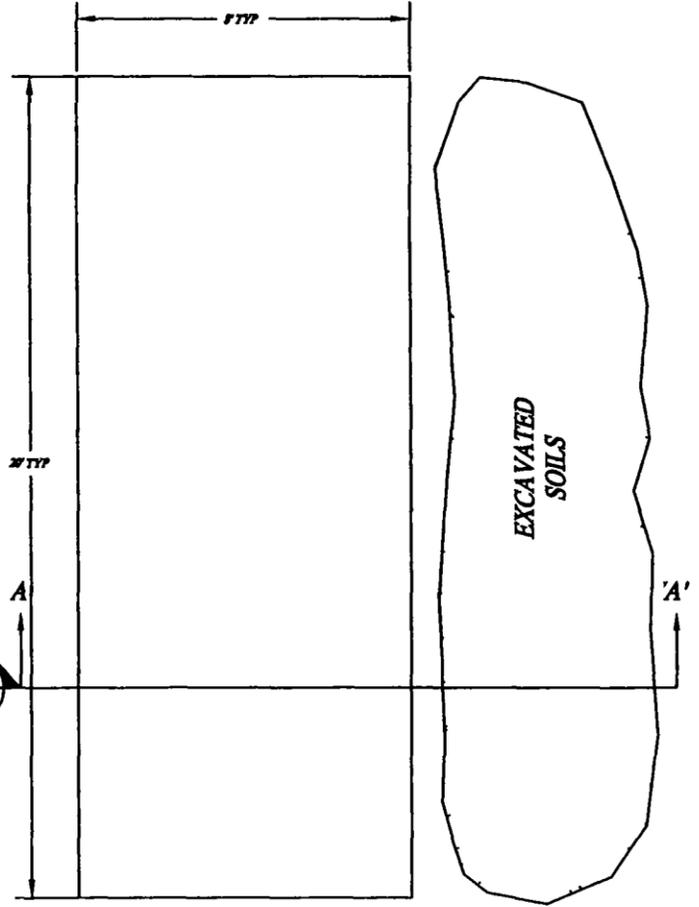
ACCESS ROAD (SEE SECTION 3)

PHASE 2

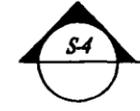
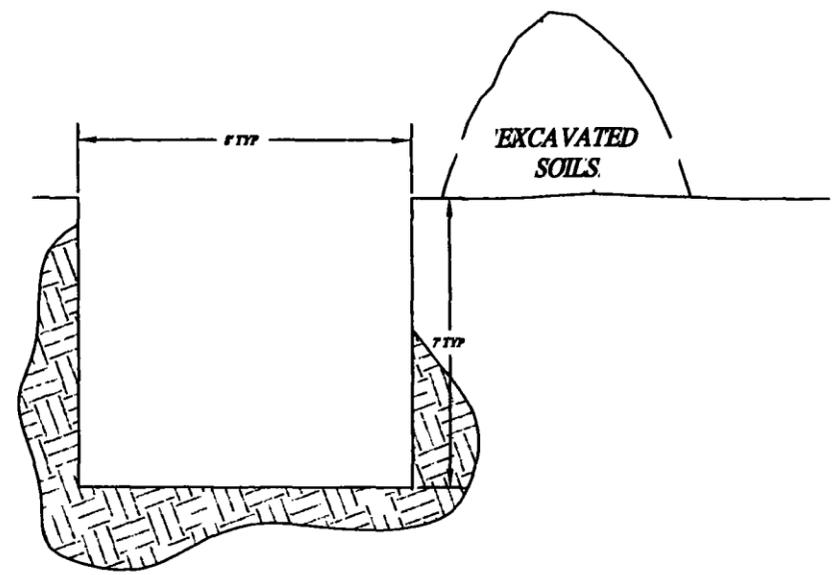


PERIMETER ACCESS ROAD RUN-ON DIVERSION BERM
NOT TO SCALE

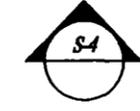
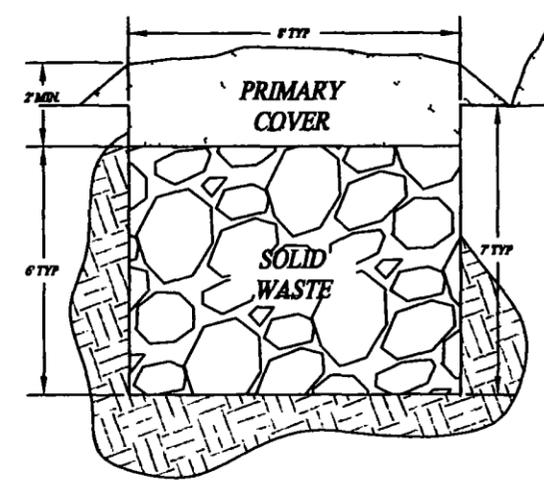
LANDFILL



TRENCH EXCAVATION (PLAIN VIEW)



TRENCH EXCAVATION (ELEVATION VIEW)
NOT TO SCALE



INITIAL FILL AND COVER (ELEVATION VIEW)
NOT TO SCALE

MARK	DATE	DESCRIPTION
	06/11/10	REVISION 1
	01/25/10	FINAL
	05/01/09	FINAL DRAFT
ISSUE		
PROJECT NO	01260-001	
CAD DWG FILE	01260-001/CA_800a.dwg	
DRAWN BY	JAH	
DESIGNED BY	BOM	
CHECKED BY	JW	
COPYRIGHT	IGES 2010	

SHEET TITLE
CIRCLE 4 FARMS
ELEVATION VIEW
& DETAILS

X:\PROJECTS\01... Circle Four Farms\C4 Base June 2010 (11x17) dwg 6/11/2010 8:47:35 AM

REFERENCE
ADAPTED FROM MAP
FOR IDEED BY CLIENT



CIRCLE 4 FARMS
341 S MAIN STREET
MILFORD UT 84751

CONSULTANTS



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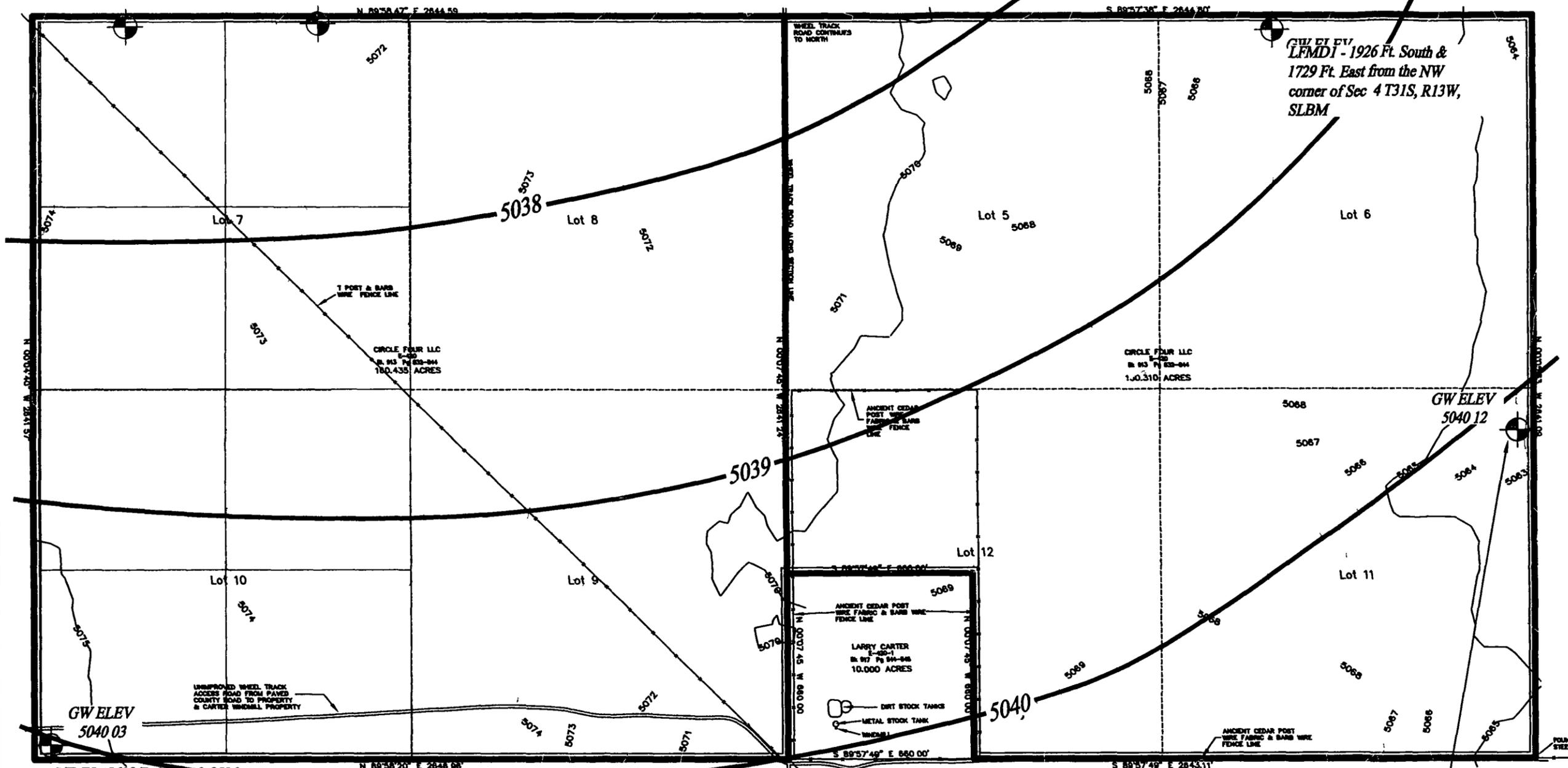
4153 South Commerce Drive
SoK Lake City Utah 84107
(801)270-9400 Fax: (801)270-9401

- GROUNDWATER MONITORING WELL (EXISTING)
- GROUNDWATER MONITORING WELL (PROPOSED)
- GROUNDWATER CONTOURS

MARK	DATE	DESCRIPTION
	06/11/10	REVISION 1
	07/25/10	FINAL
	05/01/09	FINAL DRAFT

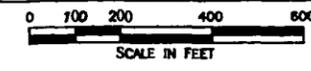
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DESIGNED BY	JDM
CHECKED BY	JW
COPYRIGHT	IGES 2010

SHEET TITLE
CIRCLE 4 FARMS
GROUNDWATER
GRADIENT (JAN 5, 2010)



LFMU - 2692 Ft. North & 2596 Ft. West from the SE corner of Sec 5 T31S, R13W, SLBM.

LFMD2 - 3346 Ft. South & 2594 Ft. East of the NW. Corner of Sec 4 T31S, R13W, SLBM.



X:\PROJECTS\01260\C4 Base June 2010 (11x17) dwg 6/9/2010 9:12:03 AM

EFERENC
D. PIED F. M.MAP
P. O. IDED B. CLIENT

Appendix B

Prepared by Attorney at Law
Thomas E. Cabaniss, Esquire
McQuinn, Woods, Bank & Boothe LLP
Bank of America Corporate Centre Suite 2900
100 N Tryon Street
Charlotte, North Carolina 28202-4011

RETURN TO
COMMERCIAL TITLE GROUP, LTD
8605 WESTWOOD CENTER DR, SUITE 401
VIENNA, VA 22185
CASE NO. 10336 #12

CONFIRMATORY DEED

(Beaver County Millard County and Iron County Utah)

THIS DEED is made as of October 25, 1999 by and between CIRCLE FOUR REALTY, a North Carolina general partnership with an address of 341 South Mam, Milford, Utah 84751, as "Grantor", and CIRCLE FOUR CORPORATION, a North Carolina corporation, with an address of 341 South Mam, Milford Utah 84751 as Grantee

WITNESSETH

That Smithfield of Utah Inc, a Delaware corporation ("Smithfield") and Carroll's Foods of Utah Inc a North Carolina corporation ("Carroll's") formerly owned all of the partnership interests in Grantor

That Grantor was dissolved pursuant to that certain Dissolution of Partnership dated as October 13 1999 (the "Dissolution")

That in conjunction with the Dissolution Grantor distributed all of the partnership assets to Smithfield and Carroll's (the "Liquidation")

That on October 15, 1999, Smithfield merged with and into Carroll's pursuant to Sections 55 11-01 and 55 11 05 of the General Statutes of North Carolina (the "Merger")

That subsequent to the Merger Carroll's changed its corporate name to "Circle Four Corporation

That Grantor in confirmation of the Liquidation and the Merger hereby CONVEYS AND WARRANTS against the claims of all claiming by through or under Grantor, unto Grantee in fee simple, all those certain lots or parcels of land and related water rights situated in Beaver County, Millard County and Iron County, Utah and more particularly described in Exhibit A attached hereto (the "Property")

TO HAVE AND TO HOLD the Property and all privileges and appurtenances thereto belonging to Grantee in fee simple.

Title to the Property is subject to all matters of record

00414760 Bx00697 P#00188-00208

DIXIE B MATHESON - IRON COUNTY RECORDER
1999 NOV 01 15 39 PM FEE \$185.00 BY PTC
REQUEST: COMMERCIAL TITLE GROUP LTD

IRON COUNTY PARCELS

PARCEL 68 Lots 5, 6, 11 and 12 in Secuon 4 and Lots 7, 8, 9 and 10 in Section 5, Township 31 South, Range 13 West, SLB&M

EXCEPTING THEREFROM Beginning at the West quarter corner of Section 4, Township 31 South, Range 13 West, SLB&M and running thence South 89°57'49" East along the quarter section line 660 feet, thence North 00°07'45" West 660 feet, thence North 89°57'49" West 660 feet, thence South 00°07'45" East along the secuon line 660 feet to the point of beginning

PARCEL 69 Lots 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14 and the East half of the Southwest quarter and the Southeast quarter of Secuon 6, Township 31 South, Range 13 West, SLB&M

EXCEPTING THEREFROM Beginning at a point South 89°58'17" West along the quarter section line 983 feet from the East quarter corner of Secuon 6, Township 31 South, Range 13 West, SLB&M and running thence South 00°01'43" East 367 feet, thence South 89°58'17" West 660 feet, thence North 00°01'43" West 660 feet, thence north 89°58'17" East 660 feet; thence South 89°01'43" East 293 feet to the point of beginning

PARCEL 70 All of Section 7 and 30, the East half of Secuon 18, all of Secuon 19 (LESS the North 1500 64 feet of the Northwest quarter), the West half of Secuon 20 and the West half of the Northwest quarter and the Northeast quarter of the Northwest quarter of Section 29, Township 31 South, Range 13 West, SLB&M

EXCEPTING THEREFROM Beginning at a point North 00°04'42" West along the secuon line 1283 feet from the East quarter corner of Section 18, Township 31 South, Range 13 West, SLB&M and running thence South 89°55'18" West 660 feet, thence North 00°04'42" West 660 feet, thence North 89°55'18" East 660 feet to the secuon line, thence South 00°04'42" East along the secuon line 660 feet to the point of beginning

PARCEL 71 The East half of Section 10, Township 31 South, Range 13 West, SLB&M

PARCEL 72 The Northeast quarter of the Northeast quarter of Section 27, Township 31 South, Range 13 West, SLB&M

004 14760 Bk00697 Pg00202

Appendix C

CFF Landfill

Delivery Log

Date _____

Load #	Time	Vehicle Identification	Size of Load (Cu Yds)	Type of Waste
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

Signature of Truck Driver

CFF Landfill

Random Load Inspection

Date of Inspection _____
Driver _____

Description of Materials in Load

Approximate Quantity of Load

Tons
Cu Yds

Signature of Driver

CFF Landfill Landfill Inspection Form

Performed by _____

Date _____

Overall Condition			
Structures and Roads	Satisfactory	Needs Work *	Date Corrected
1 Buildings			
2 Fences			
3 Gates			
4 Road Leading to Facility			
5 Inside Perimeter Road			
* Specify Recommended Repairs and / or List Action Taken			

Overall Condition			
Operations	Satisfactory	Needs Work *	Date Corrected
1 Litter and Weed Control			
2 Excavations			
3 Daily Cover			
4 Final Cover			
5 Waste Pits			
Settlement			
Ponding Water			
Exposed Waste			
6 Misc			
* Specify Recommended Repairs and / or List Action Taken			



IGES INC

Intermountain GeoEnvironmental Services Inc
415 S South Commerce Drive Salt Lake City Utah 84107 T (801) 270-9400 F (801) 270-9401

May 15, 2009

Matthew T Seddon, Ph D , RPA
Deputy State Historic Preservation Officer Utah State Historic Preservation Office
300 Rio Grande St
Salt Lake City, UT 84101

RE Circle Four Farms – Class IIIb Landfill in Iron County

Dear Mr Seddon,

Circle Four Farms owns and operates several large hog farms in Beaver and Iron County Circle Four Farms is in the process of applying for a permit (with the State of Utah Department of Environmental Quality Division of Solid and Hazardous Waste) to operate a Class IIIb landfill in northern Iron County

State of Utah Solid Waste Rules, specifically Section R315-304-4(2)(a)(iv) have requirements of an historic preservation survey The State of Utah regulations state

- (i) Each new facility or expansion of an existing facility shall
 - (A) Have a notice of concurrence issued by the state historic preservation officer as provided for in Subsection 9-8-404(3)(a)(i), or
 - (B) Show that the state historic preservation officer did not respond within 30 days to the submittal, to the officer, of an evaluation, or
 - (C) Have received a joint analysis conducted as required by Subsection 9-8-404(2)
- (ii) Each existing facility shall, for all areas of the site that have not been disturbed
 - (A) Have a notice of concurrence issued by the state historic preservation officer as provided for in Subsection 9-8-404(3)(a)(i), or
 - (B) Show that the state historic preservation officer did not respond within 30 days to the submittal, to the officer, of an evaluation, or
 - (C) Have received a joint analysis conducted as required by Subsection 9-8-404(2)

A search of the National Register Information System database (National Register of Historic Places) indicated that Iron County had 19 listed sites, none of them near the proposed site Based upon the criteria required to be listed in the State or National Register of Historic Places, it is very unlikely that any additional sites will be located proximate to this project

We have reviewed the requirements of the National Historic Preservation Act, specifically Section 106 Since the State of Utah has been granted primacy from the EPA with regard to RCRA Subtitle D (managing municipal and solid waste), the requirements



IGES

of Section 106 do not appear to apply in this instance IGES contacted the State of Utah Department of Environmental Quality Division of Solid and Hazardous Waste (DSHW) to get clarification on the State rules pertaining to historic structures or properties and any additional requirements that they may have similar to Section 106 of the National Historic Preservation Act The DSHW indicated that the State of Utah did in fact have primacy granted by the EPA with regard to regulations concerning the permitting of landfills in Utah and that Section 106 was not applicable since this project does not have Federal funding, Federal permit requirements, or is on Federal lands

The DSHW indicated that the DSHW requirements are, 1) have a letter from the State Historic Preservation Officer (SHPO) that indicates concurrence, 2) show that the SHPO did not respond in 30 days to the submittal requesting concurrence, or 3) have received a joint analysis conducted as required by Subsection 9-8-404 (2)

If, in your estimation, our assessment of no potential impact to cultural resources associated with the project is accurate, could you please write a letter indicating your concurrence with this opinion to satisfy the State DSHW requirements?

If you have any questions about the proposed landfill project, would like to discuss the project further, or disagree with our assessment, please call me at your earliest convenience

Respectfully submitted,

Brett Mickelson, P E

IGES, Inc



State of Utah

GARY HERBERT
Governor

GREG BELL
Lieutenant Governor

Department of
Environmental Quality

Amanda Smith
Executive Director

DIVISION OF SOLID AND
HAZARDOUS WASTE
Scott T. Anderson
Director

May 11, 2010

Lori Hunsaker
Deputy State Historic Preservation Officer for Archaeology
State History Administration
300 Rio Grande
Salt Lake City, Utah 84101-1182

Subject Cultural Resource Inventory for the Circle Four Farms Class IIIb Landfill
Report Transmittal and Concurrence (Division Tracking #2010 01534)

Dear Ms Hunsaker

The Division of Solid and Hazardous Waste has completed its review of the enclosed report on the cultural resources inventory of the acreage under review for a Class IIIb solid waste landfill permit submitted by IGES, Inc, for the Circle Four Farms Class IIIb Landfill. The Division has determined that the enclosed report accurately assesses the cultural resources present at the proposed landfill site. As recommended by the report, historic sites will, by permit conditions, be left undisturbed during all operations at the landfill. The enclosed report and this letter are submitted in accordance with the requirements of Utah Code Annotated 9-8-404.

Please provide your response within 30 days of receipt of this letter. If you have any questions, please contact Rob Powers at (801) 536-0255.

Sincerely,

Scott T. Anderson, Director

DRD/rdp/kk

Enclosure Cultural Resource Inventory

c David Blodgett, M D, Director, Southwest Utah Public Health Department
Paul Wright, DEQ District Engineer
Jim Webb, Circle Four Farms, Environmental & Public Affairs Manager
Brett Mickelson, P E, Vice President, IGES, Inc

TN201000364 DOC



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Lieutenant Governor

Department of Community and Culture

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Executive Director

State History

PHILIP F. NOTARIANNI
Division Director

Inter-office
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UTAH DIVISION OF
SOLID & HAZARDOUS WASTE

2010 01923

May 17, 2010

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

RE Cultural Resource Inventory for the Circle Four Farms Class IIIb Landfill Report #2010 01534

In reply please refer to Case No 09 0699

Dear Mr Anderson

The Utah State Historic Preservation Office received your request for our comment on the above referenced project on May 13 2010

USHPO received your consultation request DSHW indicated that the sites will be left undisturbed, but did not make a determination of effect or outline how the sites will be protected for the duration of the undertaking will they be marked, will they be part of permit conditions etc Given the information provided USHPO recommends a determination of No Adverse Effect for the project

Utah Code 9 8 404(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 8-404(3)(a)(i) If you have questions please contact me at 801 533 3555 or Lhunsaker@utah.gov or contact Jim Dykmann at 801 533 3523 or Jdykman@utah.gov

Sincerely,

Lori Hunsaker
Deputy State Historic Preservation Officer
Archaeology

UTAH STATE
HISTORY

UTAH STATE HISTORICAL SOCIETY
ANTIQUITIES
HISTORIC PRESERVATION
RESEARCH CENTER & COLLECTIONS

CULTURAL RESOURCE INVENTORY
OF THE IGES INC s CIRCLE 4 FARMS
(TOWNSHIP 31S RANGE 13W SECTIONS 4 AND 5)
IRON COUNTY UTAH

CULTURAL RESOURCE INVENTORY
OF THE IGES INC 's CIRCLE 4 FARMS
(TOWNSHIP 31S RANGE 13W, SECTIONS 4 AND 5)
IRON COUNTY, UTAH

By

Andrea Van Schmus

Prepared for

Utah State Historic Preservation Office
Salt Lake City, Utah

Prepared Under Contract With

IGES Inc
4153 Commerce Drive
Salt Lake City Utah 84107

Prepared By

Montgomery Archaeological Consultants Inc
P O Box 219
Moab, Utah 84532

MOAC Report No 10-039

April 21, 2010

Public Lands Policy Coordination Office
Archaeological Survey Permit No 117

United States Department of Interior (FLPMA)
Permit No 10-UT-60122

State of Utah Antiquities Project (Survey)
Permit No U-10-MQ-0115p

ABSTRACT

In 2010, a cultural resource inventory was conducted by Montgomery Archaeological Consultants Inc (MOAC) for the IGES Inc's Circle 4 Farms project area. The project area is located west of the town of Mmerville in the Escalante Desert, Iron County, Utah. The inventory was implemented at the request of Mr. Brett Mickelson, P.E., Vice President, IGES Inc., Salt Lake City, Utah. The legal description of the inventory area is Township 31S, Range 13W, Sections 4 and 5. A total of 260 acres were inventoried for cultural resources, all on private land.

The inventory resulted in the documentation of 14 archaeological sites (42In1385 and 42In2850 through 42In2862). All 14 sites are recommended eligible to the NRHP. Eligible sites consist of 12 lithic scatters (42In1385, 42In2850, 42In2851, 42In2853, 42In2854, 42In2855, 42In2857, 42In2858, 42In2859, 42In2860, 42In2861, and 42In2862), and two prehistoric temporary camps (42In2852 and 42In2856). Cultural affiliations include Archaic, Fremont, and unknown aboriginal. These sites exhibit a diversity of artifacts, some firecracked rock features, and good potential for buried cultural remains. Hence, these sites are likely to address such research topics as cultural affiliation, lithic technology, subsistence strategies, spatial organization, land use patterns, and obsidian sourcing.

TABLE OF CONTENTS

ABSTRACT	I
TABLE OF CONTENTS	II
LIST OF FIGURES	II
LIST OF TABLES	II
INTRODUCTION	1
DESCRIPTION OF PROJECT AREA	1
Environmental Setting	3
Prehistoric Cultural Overview	3
SURVEY METHODS	6
INVENTORY RESULTS	6
Archaeological Sites	6
Isolated Finds of Artifacts	11
NATIONAL REGISTER OF HISTORIC PLACES EVALUATION	13
REFERENCES CITED	14
APPENDIX A INTERMOUNTAIN ANTIQUITIES COMPUTER SYSTEM (IMACS) SITE FORMS	17

LIST OF FIGURES

1	IGES Inc's Circle 4 Farms Project Area showing Cultural Resources	2
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LIST OF TABLES

1	IGES Inc's Circle 4 Farms Project Area Cultural Resources	12
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INTRODUCTION

In March 2010, a cultural resource inventory was conducted by Montgomery Archaeological Consultants Inc (MOAC) for the IGES Inc's Circle 4 Farms project area. The project area is located west of Mmerville in the Escalante Desert, Iron County, Utah (Figure 1). The inventory was implemented at the request of Mr. Brett Mickelson, P.E. - Vice President IGES Inc. Salt Lake City, Utah. Land status is private land.

The objectives of the inventory were to locate, document, and evaluate any cultural resources within the project area in accordance with Section 106 of 36 CFR 800, the National Historic Preservation Act of 1966 (as amended). Also, the inventory was implemented to attain compliance with a number of federal and state mandates, including the National Environmental and Historic Preservation Act of 1969, the Archaeological and Historic Conservation Act of 1972, the Archaeological Resources Protection Act of 1979, and the American Indian Religious Freedom Act of 1978.

The fieldwork was performed between March 22 and 31, 2010, under the direction of Keith Montgomery (Principal Investigator) and supervised by Patricia Stavish and Andrea Van Schmus with the assistance of other crew members. The inventory was conducted under the auspices of Public Lands Policy Coordination Office Archaeological Survey Permit No. 117 and State of Utah Antiquities Permit (Survey) No. U-10-MQ-0115p issued to MOAC, Moab, Utah.

The file search for this project was conducted by Marty Thomas at the Utah State Historic Preservation Office on March 22, 2010. This consultation indicated that three previous cultural resource inventories have been completed in the current project area. In 1995, the Bureau of Land Management (Cedar City Field Office) conducted a survey for the Miner Exchange project (Dalley 1995, U-95-BL-0726). Nineteen archaeological sites were documented with one site (42In1385) occurring in the current project area. In 1997, SWCA completed an inventory for the Circle Four Realty Mmerville power line (Quick 1996). This project resulted in the documentation of nine isolated finds, none of which are in the current project area. In 1998, JBR Environmental Consultants, Inc. conducted an inventory for the Circle 4 Farms power line project resulting in the documentation of three isolated finds (Crosland 1998).

DESCRIPTION OF PROJECT AREA

The project area is located approximately 22 miles west of Minersville, on the valley floor of the Escalante Desert in the northern limits of Iron County, Utah. The legal description is Township 31S, Range 13W, Sections 4 and 5 (Figure 1). A total of 260 acres was inventoried for cultural resources, all on private land.

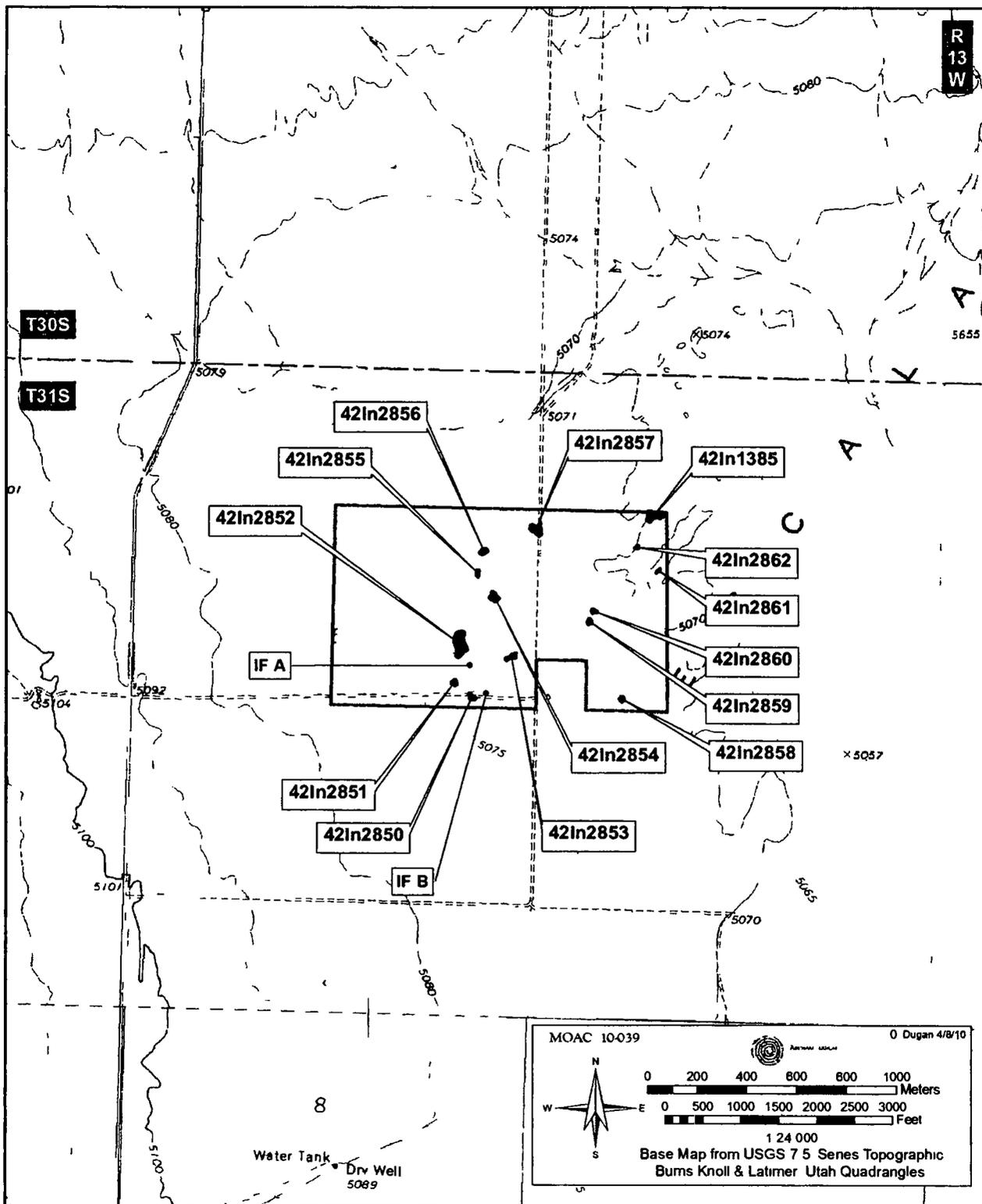


Figure 1 IGES Inc's Circle 4 Farms Project Area Showing Cultural Resources

Environmental Setting

In general the study area is situated in the Escalante Desert subsection of the Tonoquints Volcanic geographic unit of the Basin and Range-Colorado Plateau transition zone. Stokes (1986: 178) defines this area as an igneous province that was formed by multiple eruptive centers. The area is characterized by bedrock outcrops of igneous rocks, although the Escalante Desert is covered by unconsolidated alluvial sediments (Burton Seegmiller 1998: 8). Major geological formations in the area include the Pine Valley Mountains, a large portion of the Wah Wah-Tushar mineral belt, and the Three Peaks intrusion of the Iron Springs District (Stokes 1986: 178-179). The preponderance of iron ore bodies accounts for the presence of several mining districts that were active in the area from 1923 to 1982 (Ibid: 179).

More specifically, the project area occurs on the valley floor of the Escalante Desert, east of the Wah Wah Mountains, and west of the Black Mountains. The elevation in the project area ranges from 5068 to 5075 ft asl. Vegetation consists of a Sagebrush Community and Shadscale Community. Plant species include tall sagebrush, rabbitbrush, four-wing saltbush, shadscale, pinkleaf dogweed, budsage, and Indian ricegrass. Modern disturbances include roads, fence lines, and grazing.

Prehistoric Cultural Overview

Prehistoric occupation of the study area spans the last 10,000-12,000 years and cultural remains representing the Paleoindian, Archaic, Formative, Protohistoric and Historic stages have been identified. The earliest known archaeological remains in southern Utah are attributable to the Paleoindian stage, which emphasized the exploitation of megafaunal and floral resources during the period of transition from the Pleistocene to the Holocene. On the basis of projectile point typologies and subsistence strategies, the Paleoindian stage is commonly divided into three cultural complexes: Llano or Clovis (ca. 11,500-11,000 B.P.), Folsom (ca. 11,000-10,000 B.P.) and Plano (ca. 10,500-7500 B.P.). Aikens and Madsen (1986) postulate that Paleoindian people migrated into the eastern portion of the Great Basin following the recession of Lake Bonneville (10,000 B.P.). The Paleoindian traditions of the Great Basin and the Northern Colorado Plateau appear to have diverged following Clovis times. In the Great Basin, the Western Stemmed complex and, possibly, the advent of an Archaic subsistence pattern follows Clovis (Schroedl 1991). In the eastern Great Basin, open sites with fluted points have been documented along the margins of early Holocene water bodies, particularly in Sevier Lake in Millard County (Davis et al. 1994; Simms and Lindsay 1989).

The Archaic stage is well-represented in the study area, characterized by sites positioned over a range of altitudinal and topographic settings, indicative of a roving settlement-subsistence pattern of hunting and gathering. The earliest evidence of Archaic occupation is designated the Wendover Period (7500-4000 B.C.) (Aikens and Madsen 1986: 155) for the eastern Great Basin. Excavated sites with early and early-middle Archaic components include dry caves adjacent to lake-edge marsh systems, such as Danger Cave, Hogup Cave, Deadman Cave, and Black Rock Cave (Jennings 1957, Aikens 1970, Madsen 1983). Excavated upland rockshelters in the region with early Archaic components include Sudden Shelter, Cowboy Cave, Joe's Valley Alcove, and Sparrow Hawk Shelter (Jennings et al. 1980; Madsen and Lindsay 1984). Cultural materials recovered from these caves include numerous objects identifiable as hunting weapons and game processing tools for the exploitation of large game. At both Hogup and Danger caves, wooden dart

foreshafts and atlatls were recovered along with Pinto, Humboldt and Elko Senes types of projectile points. During the middle to late Archaic Black Rock Period (4000 B.C. - A.D. 500), occupations at Danger Cave, Black Rock Cave, Hogup Cave, and Sudden Shelter continued, although many new encampments were established away from the lakeshore (Aikens and Madsen 1986:157). The cultural changes noted in the earlier part of the Black Rock Period may be related to a mid-Holocene period of increased aridity that reached its greatest intensity at about this time (Ibid:158). Many of the new sites are located in upland regions where both pinyon-juniper (e.g., pinyon nuts) and lower shrubland (e.g., sagebrush) resources were accessible. A large number of the upland sites were primarily hunting camps, although grasses such as Indian ricegrass were gathered and processed with grinding implements. This period is also characterized by changing projectile point styles and their geographical distribution. Pinto, Humboldt, and Elko Senes points styles began to spread throughout the Great Basin while Gypsum points, common in other areas of the Basin, began to appear in Utah. Sudden Side-notched, Hawken Side-notched, Rocker Base Side-notched and San Rafael points were also manufactured at this time, commonly found in the Basin-Colorado Plateau Transition area (Jennings 1978, Schroedl 1976). Towards the end of this period the bow and arrow came into use, and by the end of the Archaic era, had fully replaced the older atlatl-dart weapon system. At the end of the Black Rock Period, technological changes included the introduction of the bow and arrow and small projectile points, such as Rose Spring and Eastgate types recovered from late Archaic contexts (Holmer 1986). Elko Senes points, earlier used to tip atlatl darts, continued to be found after the transition to the bow and arrow was complete, probably as multipurpose tools hafted on handles, used as knives or similar implements (Aikens and Madsen 1986:160).

The inclusion of bow and arrow technology, along with maize horticulture, settlement in sedentary or semi-sedentary hamlets near areas optimum for horticulture and the production of pottery is considered indicative of the transition from the Archaic to the Formative lifestyle (A.D. 700-A.D. 1250), represented by the Fremont culture in the study area. Traditionally Formative groups in the study area have been defined within the Parowan Fremont variant, centered in the Parowan Valley of southwestern Utah (Marwitt 1986). Settlements are considered large by Fremont standards and sites consist of closely spaced pit houses and coursed adobe storage structures. The sites outside of the Parowan Valley exhibit architectural variations such as at the Garnson site (Taylor 1954) where pit houses lack ventilators and deflectors. The material culture includes the Snake Valley Grayware Senes ceramics, the distinctive Parowan basal-notched projectile point, flaked bone scrapers, lateral metapodial awls and bone finger rings (Marwitt 1986:165). Adaptive strategies of Fremont groups consist of seasonal mobility combined with farming, but permanent year-around occupation is evident in specific locals. According to Madsen and Simms (1998:307) fully mobile foragers continued to be scattered among the Fremont farmers, but where they co-occur it is impossible to distinguish the full-time hunter-gatherers from seasonally mobile farmer/foragers on the basis of material culture alone. Fremont habitation sites near the area include the Garnson site (Taylor 1954) and Kanosh Village (Steward 1933) situated at the northern periphery of the Parowan Fremont variant. Common architectural traits at these villages are the surface coiled-adobe granaries which exhibit hard puddled-clay floors laid upon small cobbles and pebbles, probably installed as "rodent proofing" to prevent loss of stored foods (Jennings 1978:206).

The Protohistoric stage (750 B.P. to historic) is represented by the Southern Paiute people members of the Numic population. Several models address the migration of Numic populations to the Great Basin. Some theorize that Numic expansion from the southwestern Great Basin eastward occurred approximately 1,000 years ago. Other models view the expansion taking place

several thousand years ago. On the basis of the co-occurrence of Southern Paiute and Virgin Anasazi ceramics in stratigraphic context it is theorized that entry into the southwestern Utah area by Numic speakers occurred during the late occupational period of the Virgin Anasazi (Westfall et al 1987). Fowler (1994) compares the material culture of the Southern Paiute to that of the Virgin Anasazi, noting similarities such as clay figurine styles, certain features of coiled basketry, and one type of sandal, and concludes that these similarities suggest interaction between the groups. There is some evidence of Southern Paiute-Fremont contemporaneity at the Meadow Valley sites in southeastern Nevada. Based on stratigraphic correlation and thermoluminescence dating, the brown ware (Southern Paiute Utility) and gray ware (Snake Valley Gray) sherds at Conway Shelter strongly indicate coexistence for a time, by at least A.D. 1000, of two distinct cultural traditions (Rhode 1994:127). Diagnostic cultural materials of the proto-Southern Paiute include small projectile points used with the bow and arrow, pottery made by the coil-and-scrape and paddle-anvil technique, as well as coiled and twined basketry. After A.D. 1300, the various Side-notched (Nawthis, Uinta, and Bear River) Fremont point styles disappeared, replaced throughout the same region by Desert Series styles, including Desert Side-notched (DSN) and Cottonwood Triangular (Holmer 1986).

The Southern Paiute were hunter-gatherers and part-time horticulturists, with domesticates playing a minor role in their subsistence strategy (Fowler and Fowler 1971, 1981, Steward 1938). According to ethnographic accounts, the study area was occupied by the Southern Paiute Beaver subgroup, labeled by Kelly (1964:32) as "water people." Sapir (1930) gives the name of this group as the Indian Peak Tribe. Kelly's (1934) northwestern boundary of the Beaver group lies just north of the Wah Wah Mountains (north of the prominent Indian Peak). The Beaver groups relied on small game for food including rabbits, which were often hunted in drives, and other mammals such as rats, mice, gophers, squirrels, chipmunks, and birds (Bradley 1999:31). Pine nuts, roots, and berries were also important, and the Indian Peak area of western Beaver County was known to produce the best pine nuts (ibid). A few decades before occupation by the Whites, Southern Paiute economy was bolstered by the introduction of native agriculture with accounts of the Beaver group tending fields in the vicinity of Indian Peak (Kelly and Fowler 1986:371). In 1865, Utah Superintendent of Indian Affairs O. H. Insh reported that problems in south Utah between White settlers and the Southern Paiute might best be solved by moving the native groups to the Uintah Reservation in northeastern Utah. In the fall of 1865 several Paiute leaders signed the Treaty of Spanish Fork, however, very few Paiutes made the move (ibid:387). In 1915 the Indian Peaks Reservation was established in western Beaver County primarily as a home for the Beaver, Cedar, and Panaca groups (Bradley 1999:33). Residents of this reservation supported themselves with gardens and a few cattle, but the absence of sufficient income made it necessary to seek employment elsewhere. In 1954, four Southern Paiute reservations including those occupied by the Indian Peaks peoples were terminated from federal control. The Indian Peaks Band of Paiute Indians received federal recognition on April 3, 1980 under the Paiute Indian Tribe of Utah Restoration Act.

SURVEY METHODS

An intensive pedestrian survey was performed for this project which is considered 100% coverage. The project area was examined for cultural resources by the archaeologists walking parallel transects spaced no more than 15 m (45 ft) apart. Ground visibility was considered good. A total of 260 acres was inventoried for cultural resources, all on private land.

Cultural resources were recorded as archaeological sites or isolated finds of artifacts. Archaeological sites are defined as spatially definable areas with twenty or more artifacts, or a feature(s) with any number of artifacts. Sites were documented by the archaeologists walking transects across the site, spaced no more than 3 m (10 ft) apart and marking the locations of cultural materials with pinflags. This procedure allowed clear definition of site boundaries and artifact concentrations. At the completion of the surface inspection, a handheld Trimble GeoXH GPS unit was employed to point-provenience diagnostic artifacts and other relevant features in reference to the site datum, a rebar stake with aluminum cap stamped with a temporary site number. Archaeological sites were plotted on 7.5' USGS topographic quadrangle maps, photographed, and documented with site data entered on an Intermountain Antiquities Computer System (IMACS, 1990 version) inventory form (Appendix A). Isolated finds were defined as individual artifacts or light scatters of items lacking sufficient material culture to warrant IMACS forms or to derive interpretation of human behavior in a cultural and temporal context. All isolated artifacts were plotted on 7.5' USGS topographic quadrangle maps and described.

INVENTORY RESULTS

The inventory of the IGES Inc's Circle 4 Farms project area resulted in the documentation of 14 archaeological sites (42In2850 through 42In2862, and one updated site 42In1385). Additionally, two isolated finds of artifacts (IF-A and IF-B) were recorded.

Archaeological Sites

<u>Smithsonian Site No</u>	42In1385
<u>Temporary Site No</u>	N/A
<u>Site Type</u>	Lithic Scatter
<u>NRHP Eligibility</u>	Eligible Criterion D

Description This is a lithic scatter of Early to Middle Archaic affiliation situated in a broad, flat valley of the Escalante Desert. The site was originally documented by the BLM (Dalley et al 1995) as an Archaic lithic scatter and evaluated as not eligible to the NRHP. Sediments consist of light tan silt with minimal gravels. Vegetation includes low sagebrush, dogweed, rabbitbrush, saltbush, and unidentified bunch grasses. The cultural assemblage consists of five tools (not including those that were previously collected by the BLM in 1996), and 114 pieces of lithic debitage. The tools documented during this inventory include a Rocker Side-notched projectile point (Tool 1) and four biface fragments (Tools 2, 3, 4, and 5) that range from Stage III to VI. The bifaces may be the same as those discussed in the previous IMACS, however, the Rocker Side-notched projectile point appears to be newly found. Lithic debitage is dominated by tertiary flakes and lithic material types include obsidian, chert, and siltstone. Additionally, the BLM collected a Pmto projectile point, scrapers, and utilized flakes of unknown quantities during their 1999 documentation.

Smithsonian Site No 42In2850
Temporary Site No 10-039-AV01
Site Type Lithic Scatter
NRHP Eligibility Eligible Criteron D

Description This is a small low density lithic scatter of Archaic affiliation situated on the broad flat valley floor of the Escalante Desert. A two-track road passes through the northern perimeter of the site. Sediments consist of lightly compacted fine-grained tan silty sand. Vegetation includes tall sagebrush, low sagebrush, four-wing saltbush, rabbitbrush, and dogweed. The cultural assemblage consists of 14 pieces of lithic debitage, a large stemmed projectile point (Tool 1), one utilized flake (Tool 2), a metate fragment (Tool 3), and an early stage biface (Tool 4). Tertiary flakes are the most common type of lithic debitage. White mottled chert is the predominant lithic material, but other colors of chert and black opaque obsidian are also present.

Smithsonian Site No 42In2851
Temporary Site No 10-039-AV02
Site Type Lithic Scatter
NRHP Eligibility Eligible, Criteron D

Description This is a lithic scatter of unknown cultural affiliation situated in a broad flat valley of the Escalante Desert. Sediment consists of loosely compacted fine-grained tan silty sand. Vegetation includes both tall and low sagebrush, saltbush, rabbitbrush, and pickleleaf dogweed. The cultural assemblage consists of one utilized flake (Tool 1) and 29 pieces of lithic debitage. Secondary flakes are the most common type of debitage, followed by flake fragments, broken flakes, tertiary flakes, and angular debns. White mottled chert is the predominant lithic material, but pink chert and black, semi-translucent banded obsidian are also present. This is a fairly low density site with an average density of less than 0.5 artifacts per sq. m and a maximum density of 3 artifacts per sq. m.

Smithsonian Site No 42In2852
Temporary Site No 10-039-AV04
Site Type Temporary Camp
NRHP Eligibility Eligible, Criteron D

Description This is a temporary camp of Middle Archaic, Late Archaic, and Fremont affiliation. The site measures 115 x 60 meters and is located in a broad flat valley of the Escalante Desert. Soil is a loosely compacted brown fine sandy silt. Vegetation includes tall sagebrush, four-wing saltbush, pickleleaf dogweed, and rabbitbrush. Cultural materials consist of lithic debitage, chipped stone tools, ground stone, one ceramic, scattered firecracked rock, and four firecracked rock concentrations (Features A-D). Debitage (n=163) is dominated by tertiary flakes, followed by shatter, secondary flakes, and primary flakes. Chipped stone tools include a Gypsum projectile point (Tool 2), a Gatecliff Contracting Stem projectile point (Tool 3), two utilized flakes, a biface, and one scraper. Ground stone is limited to a slab metate fragment. Material types for all lithics include chert, obsidian, basalt, quartzite, and metaquartzite. The ceramic sherd is identified as a Virgin Anasazi Senes grayware body sherd, a probable tradeware. Scattered firecracked rock (n=31) was observed throughout the site, excluding the identified concentrations. Feature A is a firecracked rock concentration located at the southern end of the site, measures 100 x 80 cm, and consists of 12 embedded and partially embedded rocks. Feature B is a firecracked rock concentration located in the south central portion of the site, measures 140 x 70 cm, and consists of 15 embedded volcanic and metaquartzite rocks, including a metate fragment (Tool 4). Feature C is a firecracked rock concentration located at the north end of the site, under the barbed wire fence, measures 80 (NW/SE) x 40 cm, and consists of eight embedded volcanic and quartzite.

rocks Feature 4 is a firecracked rock concentration located centrally in the site measures 100 x 40 cm, and consists of nine embedded volcanic and metaquartzite rocks A barbed wire fence runs NW/SE through the north end of the site and there are a few cattle tracks roaming in the area of the site

Smithsonian Site No 42In2853
Temporary Site No 10-039-AV03
Site Type Lithic Scatter
NRHP Eligibility Eligible, Criterion D

Description This is a low density lithic scatter of unknown aboriginal cultural affiliation measuring 60 x 30 meters The site is located in a broad flat valley of the Escalante Desert Soil is a loosely compact brown fine silty sand Vegetation includes low sagebrush, pnckleaf dogweed, four-wing saltbush, and rabbitbrush Cultural materials consist of lithic debitage and scattered firecracked rock Lithic debitage (n=60) is dominated by tertiary flakes followed by shatter, and secondary flakes Six firecracked rocks are scattered across the site

Smithsonian Site No 42In2854
Temporary Site No 10-039-AV05
Site Type Lithic Scatter
NRHP Eligibility Eligible Criteron D

Description This is a low density lithic scatter of unknown aboriginal cultural affiliation measuring 55 x 49 meters The site is located in a broad flat valley in the Escalante Desert Soil is a fine light brown silty sand with small coppice dunes formed around the base of the vegetation Vegetation includes tall sagebrush, four-wing saltbush rabbitbrush, and pnckleaf dogweed Cultural material consists of lithic debitage a black obsidian Stage V biface midsection, and scattered firecracked rock Debitage (n=90) is dominated by tertiary flakes followed by shatter pnmary flakes and secondary flakes Matenal types include chert obsidian, basalt and rhyolite The anthills on the site contam flakes with a maximum density of 8 per sq m and the remainder of the site density is a maximum of 2 per sq m Four fire cracked volcanic rocks were observed scattered throughout the site

Smithsonian Site No 42In2855
Temporary Site No 10-039-AV06
Site Type Lithic Scatter
NRHP Eligibility Eligible, Cntenon D

Description The site is a small low density lithic scatter of probable Archaic affiliation measuring 39 x 21 meters The site is located in a broad flat valley in the Escalante Desert Soil is loosely compacted fine light brown silty sand with coppice dunes accumulated around the vegetation Vegetation includes tall sagebrush four-wing saltbush and Indian ncegrass Cultural materials consist of lithic debitage, chipped stone tools, and scattered firecracked rock Debitage (n=33) is dominated by tertiary flakes manufactured from pnmanly white chert Chipped stone tools include one white chert Elko Corner-notched projectile point base (Tool 1), and a white chert stage III biface fragment There are five pieces of volcanic firecracked rock scattered randomly in the northern half of the site

Smithsonian Site No 42In2856
Temporary Site No 10-039-AV07
Site Type Temporary Camp
NRHP Eligibility Eligible Criteron D

Description This is a small temporary camp of unknown aboriginal cultural affiliation. The site measures 43 x 29 meters and is located in a broad flat valley of the Escalante Desert. Soil is a light brown soft compacted fine silty sand with small coppice dunes accumulated around the bases of the vegetation. Vegetation includes tall sagebrush, four-wing saltbush, pnckleaf dogweed, and rabbitbrush. Cultural materials consist of lithic debitage, ground stone, scattered firecracked rock, and four firecracked rock concentrations (Features A-D). Debitage (n=63) is dominated by tertiary flakes, followed by shatter, primary reduction and secondary flakes. Materials types include chert, chalcedony, obsidian, and quartzite. Ground stone consists of a fire-altered rhyolite slab metate fragment. There are 23 pieces of volcanic firecracked rock scattered throughout the site excluding the concentrations. Feature A is a firecracked rock concentration measuring 190 cm x 90 cm and consisting of a loose cluster of 20 embedded vesicular basalt and rhyolite rocks. Feature B is a firecracked rock concentration measuring 220 cm x 110 cm and consisting of a loose cluster of 27 vesicular basalt and rhyolite rocks that are embedded and partially embedded. Feature C is a firecracked rock concentration measuring 100 x 90 cm and consisting of a sub-circular cluster of 18 embedded rhyolite, vesicular basalt and unidentified igneous rocks. Feature D is a firecracked rock concentration measuring 90 cm x 80 cm and consisting of a loose cluster of seven embedded igneous rocks.

Smithsonian Site No 42In2857
Temporary Site No 10-039-AV08
Site Type Lithic Scatter
NRHP Eligibility Eligible, Criteron D

Description This is a medium density lithic scatter of Archaic cultural affiliation measuring 68 x 57 meters. The site is located on a broad flat valley in the Escalante Desert. Soil is a loosely compacted light brown silty sand with small coppice dunes built up around the vegetation. Vegetation includes tall sagebrush, four-wing saltbush, pnckleaf dogweed and rabbitbrush. Cultural materials consist of chipped stone tools and lithic debitage. Lithic tools include a Stage II biface, a Stage VI biface, a bunn, a Large Side-notched projectile point base (Tool 3), and a Large Corner-notched projectile point base (Tool 4). Debitage consists of approximately 300 flakes and shatter pieces. Four 1 x 1 m counting units were surface inventoried throughout the site to obtain a representative sample of the varying quantity and diversity of debitage. Counting Unit 1 was placed in the western portion of the site and yielded six pieces of chert debitage. Counting Unit 2 was placed in the area of maximum density of the site, excluding the antills, and yielded 12 pieces of chert debitage. Counting Unit 3 was placed just west of the two track road in and yielded nine pieces of chert debitage. Counting Unit 4 was placed east of the two track road and yielded three pieces of chert debitage. The four counting units yielded a total of 30 pieces of chert debitage that was dominated by tertiary flakes. Obsidian debitage was also observed but not within the counting units.

Smithsonian Site No 42In2858
Temporary Site No 10-039-PS01
Site Type Lithic Scatter
NRHP Eligibility Eligible, Criterion D

Description This is a lithic scatter of unknown cultural affiliation situated in a broad, flat valley of the Escalante Desert. Sediments consist of loosely compacted fine-grained light tan silt. Vegetation includes tall sagebrush, low sagebrush, four-wing saltbush, and rabbitbrush. The cultural assemblage consists of a white chert bidirectional core (Tool 1), a pink chert Stage IV biface fragment (Tool 2), and 63 pieces of lithic debitage. Lithic debitage consists primarily of tertiary flakes, with shatter also observed. Debitage material types include chert, obsidian, and orthoquartzite.

Smithsonian Site No 42In2859
Temporary Site No 10-039-AV09
Site Type Lithic Scatter
NRHP Eligibility Eligible, Criterion D

Description This is a lithic scatter of unknown cultural affiliation situated in a broad, flat valley of the Escalante Desert. A jumper post and barbed wire fence line trends north-south through the site. Sediments consist of lightly compacted fine-grained tan silty sand. Vegetation includes four-wing saltbush, low sagebrush, and rabbitbrush. The cultural assemblage consists solely of lithic debitage (n=54) dominated by secondary flakes and tertiary flakes. Lithic material is heavily dominated by chert, primarily white mottled chert, and obsidian is also present.

Smithsonian Site No 42In2860
Temporary Site No 10-039-AV10
Site Type Lithic Scatter
NRHP Eligibility Eligible, Criterion D

Description This is a small moderate density lithic scatter of unknown cultural affiliation situated in a broad, flat valley of the Escalante Desert. Sediments consist of loosely compacted fine-grained tan silty sand. Vegetation includes four-wing saltbush, tall sage, and budsage. The cultural assemblage consists of 54 pieces of lithic debitage and a Stage III biface fragment (Tool 1). Material types are dominated by white chert. Debitage is dominated by tertiary flakes, followed by secondary reduction.

Smithsonian Site No 42In2861
Temporary Site No 10-039-PS04
Site Type Lithic Scatter
NRHP Eligibility Eligible, Criterion D

Description This is a small low density lithic scatter of unknown cultural affiliation situated in a broad, flat valley of the Escalante Desert. Sediments are loosely compacted tan silt with a cover of pea-sized gravel. Vegetation includes low sagebrush, four-wing saltbush, rabbitbrush, and pinkleaf dogweed. The cultural assemblage consists of a retouched flake (Tool 1), one utilized flake (Tool 2), and 14 pieces of lithic debitage. Tertiary flakes are the most common type of lithic debitage, although all stages of reduction are represented. Material types include chert and obsidian.

Smithsonian Site No 42In2862
Temporary Site No 10-039-PS02
Site Type Lithic Scatter
NRHP Eligibility Eligible, Criterion D

Description The is a small lithic scatter of Archaic cultural affiliation situated in a broad, flat valley of the Escalante Desert. Sediment consists of loosely compacted tan silt with a light cover of gravel. Vegetation includes low sagebrush, rabbitbrush, four-wing saltbush, and pncleaf dogweed. The cultural assemblage consists of a large stemmed obsidian projectile point (Tool 1) and 23 pieces of lithic debitage. Debitage is dominated by tertiary flakes manufactured from chert and siltstone.

Isolated Finds of Artifacts

Isolated Find A (IF-A) is located in the NW/NE/SE of Section 5 Township 31S, Range 13W (UTM (NAD 83) 295808E-4223673N). The artifact is an opaque white chert Gypsum projectile point with serrated margins. The point has a transverse bend fracture to the tip, measures 3.7 [IC] x 2.1 x 0.5 cm, and has a random flaking pattern. It is located on the broad flat valley floor of the Escalante Desert. Soil is a loosely compacted light brown sand. Vegetation includes tall sagebrush, four-wing saltbush, and rabbitbrush.

Isolated Find B (IF-B) is located in the NE/NE/SE of Section 5 Township 31S, Range 13W (UTM (NAD 83) 295873E-4223556N). IF-B is a red quartzite hammerstone measuring 8.5 x 7.8 x 3.6 cm exhibiting two battered edges. The battered edges measure 4.5 cm and 4.8 cm long. The artifact is located on the broad flat valley floor of the Escalante Desert. Sediments consist of loosely compacted fine-grained light tan silty sand. Vegetation includes sagebrush, four-wing saltbush, rabbitbrush, and dogweed.

Table 1 IGES Inc's Circle 4 Farms Project Area Archaeological Sites

Smithsonian Site No	Temporary Site No	Land Status	Site Type	Cultural Affiliation	NRHP Eligibility
42In1385	N/A	Private	Lithic Scatter	Middle Archaic	Eligible Criteron D
42In2850	10-039-AV01	Private	Lithic Scatter	Archaic	Eligible Criteron D
42In2851	10-039-AV02	Private	Lithic Scatter	Unknown Abonginal	Eligible Cntenon D
42In2852	10-039-AV04	Prvate	Temporary Camp	Middle Archaic Late Archaic and Fremont	Eligible Criteron D
42In2853	10-039-AV03	Private	Lithic Scatter	Unknown Abonginal	Eligible Criteron D
42In2854	10-039-AV05	Private	Lithic Scatter	Unknown Aboriginal	Eligible Criteron D
42In2855	10-039-AV06	Private	Lithic Scatter	Archaic	Eligible Criteron D
42In2856	10-039-AV07	Private	Temporary Camp	Unknown Aboriginal	Eligible Criteron D
42In2857	10-039-AV08	Private	Lithic Scatter	Archaic	Eligible Cntenon D
42In2858	10-039-PS01	Private	Lithic Scatter	Unknown Aboriginal	Eligible Criteron D
42In2859	10-039-AV09	Private	Lithic Scatter	Unknown Aboriginal	Eligible Criteron D
42In2860	10-039-AV10	Private	Lithic Scatter	Unknown Aboriginal	Eligible Criteron D
42In2861	10-039-PS04	Private	Lithic Scatter	Unknown Aboriginal	Eligible Criteron D
42In2862	10-039-PS02	Private	Lithic Scatter	Archaic	Eligible Criteron D

NATIONAL REGISTER OF HISTORIC PLACES EVALUATION

The National Register Criteria for Evaluation of Significance and procedures for nominating cultural resources to the National Register of Historic Places (NRHP) are outlined in 36 CFR 60.4 as follows:

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

- 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 to 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

The inventory of IGES Inc's Circle 4 Farms project area resulted in the documentation of 14 archaeological sites (42In1385 and 42In2850 through 42In2862). All 14 sites are recommended eligible to the NRHP. Eligible sites consist of 12 lithic scatters (42In1385, 42In2850, 42In2851, 42In2853, 42In2854, 42In2855, 42In2857, 42In2858, 42In2859, 42In2860, 42In2861, and 42In2862), and two prehistoric temporary camps (42In2852 and 42In2856). Cultural affiliations include Archaic, Fremont, and unknown aboriginal. These sites exhibit a diversity of artifacts, some firecracked rock features, and good potential for buried cultural remains. Hence, these sites are likely to address such research topics as cultural affiliation, lithic technology, subsistence strategies, spatial organization, land use patterns, and obsidian sourcing.

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APPENDIX A

INTERMOUNTAIN ANTIQUITIES COMPUTER SYSTEM
(IMACS) SITE FORMS
42In2850 through 42In2862
and 42In1385 (Update)

On file at the
Utah State Historic Preservation Office

Appendix E

December 15, 2009

Circle Four Farms
P O Box 100
Milford, Utah 84751

Attention Mr Jim Webb

Subject Monitoring Well Construction
 Landfill Site, Monitor Well LFMD1
 Circle Four Farms Facilities
 Beaver and Iron Counties, Utah

Dear Mr Webb

At your request, GEM Engineering, Inc has been employed by Circle Four Farms to observe the drilling, log the well borehole with a qualified Geologist or Engineer, and observe the construction of 1 monitoring well for the proposed landfill site

Based on our observations it is our opinion that the monitoring well for the proposed landfill site, LFMD1, has been constructed in accordance the State of Utah rule (R317-6 3H(6))

The purpose of the letter is to certify that the subject monitoring well constructed to date at the landfill site has been, constructed according to the applicable requirements for monitoring well construction as outlined in rule R317-6 3H(6)

In the letter from the Department of Environmental Quality it states that rule R317-6 3H(6) requires that the monitoring well construction conform to the 1986 Resource and Conservation Recovery Act (RCRA) Technical Enforcement Guidance Manual (TEGD) and not State of Utah Water Well Handbook as previously submitted to the state. We have reviewed the (TEGD) and the construction of the monitoring wells at the landfill site generally meet the requirements set forth in the (TEGD)

The following is a summary of the requirements set forth in the (TEGD), and how construction at the landfill site has met the requirements. Chapter 3 "Monitoring Well Design and Construction" of the (TEGD), has been followed during construction of these monitoring wells, and a copy can be provided to you upon request.

3.1.3 (TEGD) Cable Tool Drilling Method

"Cable Tool drilling is relatively slow but offers many advantages for monitoring well construction in relatively shallow consolidated formations and unconsolidated formations. The method allows for the collection of excellent formation samples and detection of even relatively fine-grained permeable zones. The installation of steel casing as drilling progresses also provides an excellent temporary host for the construction of a monitoring well once the desired depth is reached.

Small amounts of water must be added to the hole as drilling progresses until the potentiometric surface is encountered. The owner/operator should only use water that cannot itself contaminate formation water. A minimum six-inch diameter drive pipe should be used to facilitate the placement of the well casing, screen, and gravel pack, and a minimum five-foot long seal should be made prior to beginning the removal of the drive pipe. The drive pipe should be pulled while the sealant is still fluid and capable of flowing outward to fill the annular space vacated by the drive pipe and shoe. The drive pipe also should be pulled in sections and additional sealant added to ensure that a satisfactory seal is obtained. Cable tool rigs have generally been replaced by rotary rigs for water well construction in most areas of the United States. Therefore, cable tool rigs may not be readily available in many regions."

Cable Tool drilling was utilized at the landfill site, LFMD1, to install the monitoring well and is an approved method according to the (TEGD).

3.2.1 Well Casings and Well Screen

"A variety of construction materials have been used for the casings and well screens, including virgin fluorocarbon resins (i.e., fluorinated ethylene propylene (FEP), polytetrafluoroethylene (PTFE), Teflon), stainless steel (304, 316 or 2205), cast iron, galvanized steel, polyvinyl chloride (PVC), Polyethylene, epoxy biphenol, and polypropylene. Any of these materials, however, may affect the quality of ground-water samples and may not have the long-term structural characteristics required of (RCRA) monitoring wells. For example, steel casing deteriorates in

corrosive environments, PVC deteriorates when in contact with ketones, esters, and aromatic hydrocarbons, polyethylene deteriorates in contact with aromatic and halogenated hydrocarbons, and polypropylene deteriorates in contact with oxidizing acids, aliphatic hydrocarbons, and aromatic hydrocarbons. In addition, steel, PVC, polyethylene, and polypropylene may adsorb and leach constituents that may affect the quality of ground-water samples.

The selection of well casing and screen materials should have been made with due consideration to geochemistry, anticipated lifetime of the monitoring program, well depth, chemical parameters to be monitored and other site-specific factors. Fluorocarbon resins or stainless steel should be specified for use in the saturated zone when volatile organics are to be determined, or may be tested, during a 30-year period. In such cases, and where high corrosion potential exists or is anticipated, fluorocarbon resins are preferable to stainless steel. An example of a stainless steel monitoring well is provided in Figure 3-2. National Sanitation Foundation (NSF) or ASTM-approved polyvinylchloride (PVC) well casing and screens may be appropriate if trace metals or non-volatile organics are the contaminants anticipated. As research demonstrates the appropriateness of other materials for screens or casing in the saturated or vadose zones, they may be utilized on a site-specific basis. Stainless steel, fluorocarbon resins, or PVC are appropriate casing materials in the unsaturated zone.

Figure 3-3 illustrates the concept of a composite well. Many combinations of materials may be employed in a manner consistent with this guidance. One combination that should be avoided is the use of dissimilar metals, such as stainless steel and galvanized steel, without an electrically isolating (dielectric) bushing. If such dissimilar metals are in direct contact in the soil, a potential difference is created and leads to accelerated corrosion of the galvanized steel (in this example). More generically, in the galvanic series the less noble metal becomes the anode to the more noble metal and is corroded at an accelerated rate. In well construction, this acceleration in corrosion at the point of connection will lead to failure of the construction materials and loss of a RCRA monitoring well. Theoretically, a potential difference is created in one type of metal penetrating heterogeneous strata, but the difference in potentials would not be as great. In conclusion, a dielectric coupling should be used for connecting dissimilar metals in either the saturated or vadose zone.

There are two reasons why owners/operators should have selected appropriate well screen and casing materials:

- Long term structural integrity, i.e., 30 or more years, is essential to the collection of unbiased ground-water samples over the active life of the facility and post-closure period.

- Owner/operators of facilities whose Part B or post-closure permit application has been called are required under 270.14(c)(4) to analyze any plume(s) for Appendix VIII constituents (see the RCRA Groundwater Monitoring Compliance Order Guide, August 1985). The remainder of plastic pipe sections must be flush threaded or have the ability to be connected by another mechanical method that does not introduce contaminants such as glue or solvents into the well. Also, monitoring wells must be structurally sound in order to withstand vigorous well development procedures. Well casings and screens should be steam cleaned prior to emplacement to ensure that all oils, greases, and waxes have been removed. Because of the softness of casings and screens made of fluorocarbon resins, these materials should be detergent-washed and not steam-cleaned, prior to installation.

The owner/operator should normally use well casing with either a two-inch or four-inch inside diameter. Larger casing diameters, however, may be necessary where dedicated purging or sampling equipment is used or where the well is screened in a deep formation.

The installation of a sump (sampling cup device) at the bottom of a monitoring well (Figure 3-1) is recommended. The sump will aid in collecting fine sediments and result in prolonging the operating life of the screen. An extra benefit of using a sump is its ability to capture intermittent dense-phase contaminants for analysis. In zones composed of fine-grained material (clays and silts) where turbidity may be problematic, the decision flow chart (Figure 3-4) for turbid groundwater samples should be consulted to evaluate well construction and development.”

A PVC Casing and Screen were selected for the well at the landfill site, LFMD1, because of the anticipated low (VOC's) Volatile Organic Compounds and long term performance of the wells. Threaded pipe was used. No Glue was used.

3.2.2 Monitoring Well Filter Pack and Annular Sealant

“The materials used to construct the filter pack should be chemically inert (e.g., clean quartz sand, Silica, or glass beads), well rounded, and dimensionally stable. Fabric filters should not be used as filter pack materials. Natural gravel packs are acceptable, provided that the owner/operator conducts a sieve analysis to establish the appropriate well screen slot size and determine chemical inertness of the filter pack materials in anticipated environments.

The materials used to seal the annular space must prevent the migration of contaminants to the sampling zone from the surface or intermediate zones and prevent cross contamination between

strata. The materials should be chemically compatible with the anticipated waste to ensure seal integrity during the life of the monitoring well and chemically inert so they do not affect the quality of the ground-water samples. The permeability of the sealants should be one to two orders of magnitude less than the surrounding formation. Figure 3-1 illustrates an appropriate distribution of annular sealants. An example of an appropriate use of annular sealant material is using a minimum of two feet of certified sodium bentonite pellets immediately over the filter pack when in a saturated zone. The pellets are most appropriate in a saturated zone because they will penetrate the column of water to create an effective seal. Coarse grit sodium bentonite is likely to hydrate and bridge before reaching the filter pack. A cement and bentonite mixture, bentonite chips, or antishrink cement mixtures should be used as the annular sealant in the unsaturated zone above the certified-bentonite pellet seal and below the frost line. Again, the appropriate clay must be selected on the basis of the environment in which it is to be used. In most cases, sodium bentonite is appropriate. The addition of bentonite to the cement admixture should generally be in the amount of 2 to 5 percent by weight of cement content. This will aid in reducing shrinkage and control time of setting. Calcium bentonite may be more appropriate in classic sediment soils due to reduced cation exchange potential. Clays should be pure, i.e. free of additives that may affect ground-water quality. From below the frost line, the cap should be composed of concrete blending into a four-inch thick apron extending three feet or more from the outer edge of the borehole.

The untreated sodium bentonite seal should be placed around the casing either by dropping it directly down the borehole or, if a hollow-stem auger is used, putting the bentonite between the casing and the inside of the auger stem. Both of the methods present a potential for bridging. For shallow monitoring wells, a tamping device should be used to reduce this potential. In deeper wells, it may be necessary to pour a small amount of formation water down the casing to wash the bentonite down the hole. In either case, a spacing differential of 3 to 5 inches should exist between the outer diameter of the casing and the inner diameter of the auger or the surface of the borehole to facilitate emplacement of filter pack and annular sealants. Moreover, the precise volume of filter pack and sealant required should be calculated to establish their correct subsurface distribution. The actual volume of materials used should be determined during well construction. Discrepancies between calculated volumes and volumes used require explanation.

The cement-bentonite mixture should be prepared using clean water and placed in the borehole using a tremie pipe. The tremie method ensures good sealing of the borehole from the bottom.

The remaining annular space should be sealed with expanding cement to provide for security and an adequate surface seals. Locating the interface between the cement and bentonite-cement

mixture, below the frost, serves to protect the well from damage due of frost heaving. The cement should be placed in the borehole using the tremie method.

Upon completion of the well, installation of a suitable threaded or flanged cap or compression seal should be placed or locked in properly to prevent either tampering with the well or the entrance of foreign material into it (Figure 3-2). A one-quarter inch vent hole pipe provides an avenue for the escape of gas. Placement of concrete or steel bumper guards around the well will prevent external damage by a vehicular collision with the exposed casing.

Sihca Sand, which was approximately two times the size of the slot, was utilized at the landfill site, LFMD1.

3.3 Well Intake Design

“The owner/operator should have designed and constructed the intake of the monitoring wells to, (1) allow sufficient ground-water flow to the well for sampling, (2) minimize the passage of formation materials (turbidity) into the well, and (3) ensure sufficient structural integrity to prevent the collapse of the intake structure.

For wells completed in unconsolidated materials, the intake of a monitoring well should consist of a screen or slotted casing with openings sized to ensure that formation material is prohibited from passing through the well during development. Extraneous fine-grained material (clays and silts) that has been dislodged during drilling may be left on the screen and the water in the well. These fines should be removed from the screen and filter pack during development of the well. The owner/operator should use commercially manufactured screens or slotted casings. Field slotting of screens should not be allowed.

The annular space between the face of the formation and the screen or slotted casing should be filled to minimize passage of formation materials into the well. The driller should therefore install a filter pack in each monitoring well that is constructed on site. Furthermore, in order to ensure discrete sample horizons, the filter pack should extend no more than two feet above the well screen as illustrated in Figure 3-1.”

The well intake at the landfill site, LFMD1, was constructed to fulfill the 3 steps described above.

3.4 Well Development

“After the owner/operator completed constructing monitoring wells natural hydraulic conductivity of the formation should have been restored and all foreign sediment removed to ensure turbid-free ground-water samples

A variety of techniques are available for developing a well. To be effective they require reversals or surges in flow to avoid bridging by particles, which is common when flow is continuous in one direction. These reversals or surges can be created by using surge blocks, bailers, or pumps. Formation water should be used for surging the well. In low-yield water-bearing formations, an outside source of water may sometimes be introduced into the well to facilitate development. In these cases, this water should be chemically analyzed to evaluate its potential impact on in-situ water quality. The driller should not have used air to develop the wells. All developing equipment should have been decontaminated prior to use, as should have the materials of construction.

The owner / operator should have developed wells to be clay- and silt-free. If after development of the well is complete it continues to yield turbid ground-water samples, the owner/operator should follow the procedure described in Figure 3-4. The recommended acceptance/rejection value of five nephelometric turbidity units (NTU) is based on the need to minimize biochemical activity and possible interference with ground-water sample quality. The same criteria applies to turbidity measurements expressed in other units such as the formazin turbidity unit (FTU) or Jackson turbidity unit (JTU).

One should determine the relative hydraulic conductivity of different layers within the aquifer in which the screen is placed (the transmissivity/pumping test method is recommended). Using this information along with pH, temperature measurements and mean seasonal flow rates, one should evaluate the initial performance of the well and use these values for periodic redevelopment and maintenance assessments.”

The well at the landfill site, LFMD1, was purged and surged as a part of well development until the wells produced less turbulent water.

3.5 Documentation of Well Design and Construction

In the context of a compliance order, the technical reviewer should require the owner/operator to

compile information on the design and construction of wells. Such information may include

- Date/time of construction
- Drilling method and drilling
- Well location (+0.5 ft)
- Bore hole diameter and well casing diameter
- Well depth (+0.1 ft)
- Drilling and lithologic logs
- Casing materials
- Fluid used
- Screen slot size/length
- Filter pack material/size grain analysis (D10)
- Filter pack volume calculations
- Filter pack placement method
- Sealant materials (percent bentonite)
- Sealant volume (lbs/gallon of cement)
- Sealant placement method
- Surface seal design/construction
- Well development procedure
- Type of protective well cap
- Ground surface elevation (+0.01 ft)
- Surveyor's pin elevation (+0.01 ft) on concrete apron
- Top of monitoring well casing elevation (+0.01 ft)

December 16, 2009

- Top of protective steel casing elevation (+0.01 ft)
- Detailed drawing of well (include dimensions)

Where applicable all of the above were performed on the monitoring well at the landfill site, LFMD1, for Circle Four Farms

Certification

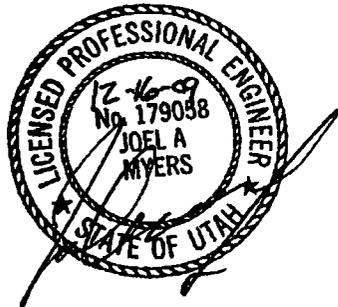
Based on our observations noted above, we certify that the monitoring well for the proposed landfill site, LMFD1, has been constructed in accordance with Chapter 3 of Technical Enforcement Guidance Document (TEGD)

We appreciate the opportunity to be of continued service on this project. Should you have any questions regarding this report please contact us at your convenience

Respectfully submitted,
GEM Engineering, Inc ,



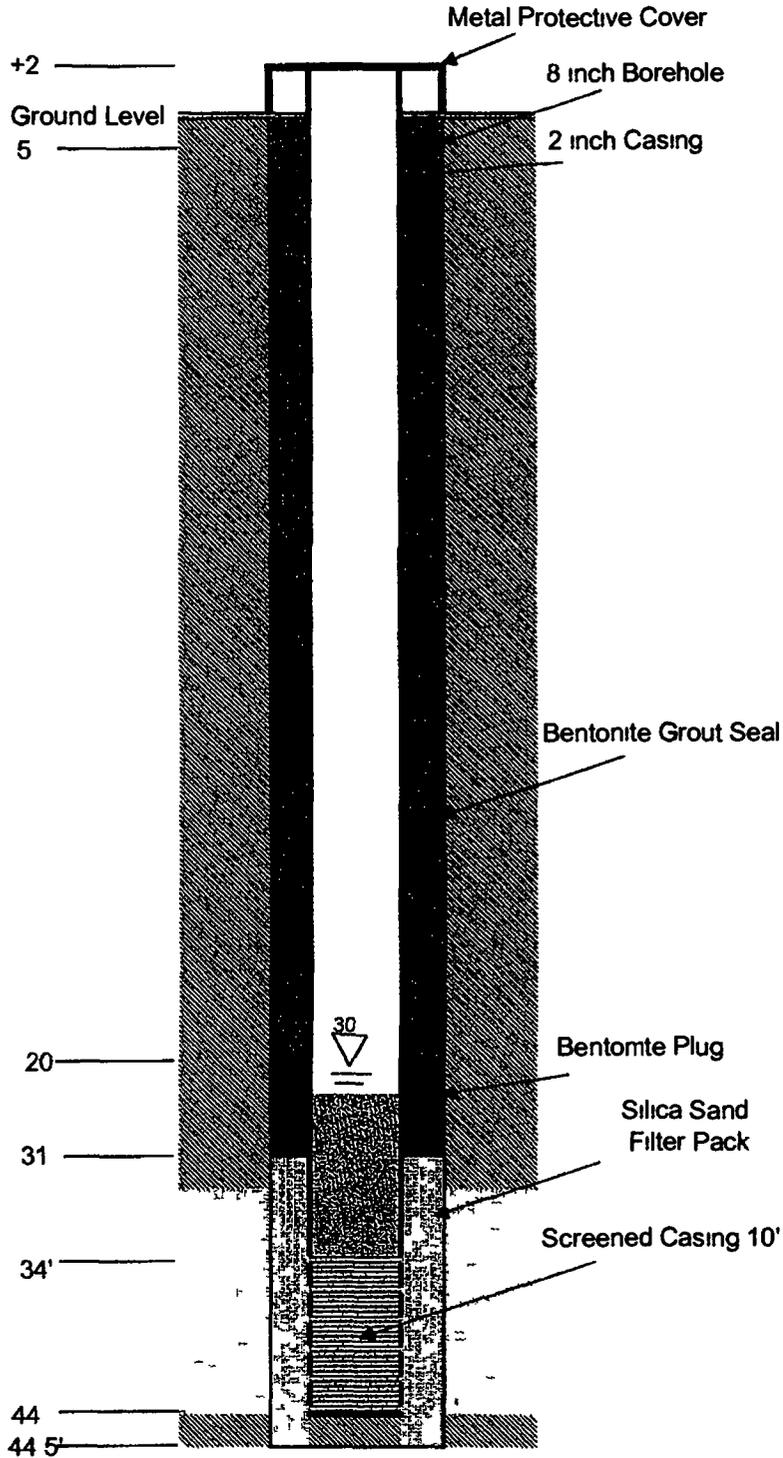
Joel A. Myers, P.E.
President



Well Construction Diagram

Date Drilled 12/7/09

Circle Four Farm Landfill Site - LFMD1 LMFD1 = S 1926 E 1729 from NWC Sec4 T31S R13W SLBM
not to scale



Project
Proposed Landfill Site
Monitor Well LFMD1
Milford Valley Iron County Utah

Date Excavated 12/7/09

Elev Not Measured

Location LFMD1

BORING NO. B-1

Depth (ft)	Field Moisture %	Dry Density (pcf)	BLOW COUNT	Other Tests *	Samples	SYMBOL +	SOIL DESCRIPTION	MOISTURE	CONSISTENCY
						SM	(SM) Silty Sand with some Gravel - Light Brown		
							(SC)- Clayey Sand with trace Gravel - Light Red Brown		
							(CL)- Sandy Clay - Occasional thin lenses of sand and silt encountered		
15							- Light Red Brown		
30							(SC)- Clayey Sand - Light Red Brown		
							(CL)- Sandy Clay - Occasional thin lenses of sand and silt encountered		
							- Light Red Brown		
45							Bottom @ 44 feet		
							LMFD1 = S 1926 E 1729 from NWC Sec4 T31S R13W SLBM		
60									
<p>* Other Tests C = Consolidation AT = Atterberg S = Shear, G = G Size E = Expansion SOL = Solubility, DS = Direction Shear</p> <p>+ Sample Type <input checked="" type="checkbox"/> = Drive Sample <input type="checkbox"/> = Bulk Sample <input checked="" type="checkbox"/> = No Recovery</p>								<p>Notes Ground water encountered at 30'</p>	

GEM Engineering, Inc
485 North 100 Aviation Way,
Cedar City, Utah

Project
Proposed Landfill Site
Monitor Well LFMD1
Milford Valley, Iron County, Utah

Date Excavated 12/8/09 Elev Not Measured
 Location LFMD2 **BORING NO B-2**

Depth (ft)	Field Moisture %	Dry Density (pcf)	BLOW COUNT	Other Tests *	Samples	SYMBOL +	SOIL DESCRIPTION	MOISTURE	CONSISTENCY
0							(CL)- Sandy Clay - Occasional thin lenses of sand and silt encountered - Light Brown		
15							(SC)- Clayey Sand - Light Red Brown		
30						SM	(SM)- Gravelly Sand with Silt - Gravel within layer is fine is size - Light Brown		
45							(CL)- Sandy Clay Bottom @ 40 Feet LFMD2 = S 3346 E 2594 from NWC Sec4 T31S R13W SLBM		
60									

* Other Tests C = Consolidation, AT = Atterberg S = Shear, G = G Size
 E = Expansion SOL = Solubility DS = Direction Shear

+ Sample Type = Drive Sample
 = Bulk Sample
 = No Recovery

Notes
 Ground water encountered at 24'

GEI Engineering, Inc
 485 North Aviation Way
 Cedar City, Utah

Project
Proposed Landfill Site
Monitor Well LFMD2
Milford Valley, Iron County, Utah

Date Excavated 12/4/09

Elev Not Measured

Location LFMU

BORING NO. B-3

Depth (ft.)	Field Moisture %	Dry Density (pcf)	BLOW COUNT	Other Tests *	Samples	SYMBOL +	SOIL DESCRIPTION	MOISTURE	CONSISTENCY
0									
15							(CL)- Sandy Clay - Occasional thin lenses of sand and silt encountered - Light Brown		
30							(SC)- Clayey Sand with some Gravel - Light Red Brown		
45							(CL)- Sandy Clay - Occasional thin lenses of sand and silt encountered Light Brown		
60							Bottom at 48 Feet LFMU = N 2692 W 2596 from SEC Sec5 T31S R13W SLBM		

* Other Tests C = Consolidation AT = Atterberg, S = Shear G = G Size
E = Expansion SOL = Solubility DS = Direction Shear

+ Sample Type = Drive Sample
 = Bulk Sample
 = No Recovery

Notes
Ground water encountered at 35

GEM Engineering, Inc
485 North Aviation Way
Cedar City, Utah

Project
Proposed Landfill Site
Monitor Well LFMU,
Milford Valley, Iron County, Utah

Appendix F

IRON COUNTY SOLID WASTE

PO BOX 743 3127 N IRON SPRINGS ROAD CEDAR CITY UT 84721 0743 OFFICE 435-865 7015 FAX 435-586 5192

June 16 2010

Jared Hawes PE
IGES Inc
4153 South Commerce Dnve
Salt Lake City UT 84107

RF Circle Four Farms Disposal at the Iron County Landfill

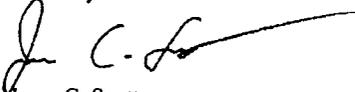
To Whom It May Concern

The Iron County Solid Waste Department understands that Circle Four Farms is currently permitting their own landfill. As part of the permitting process Circle Four Farms would like the Iron County Landfill to serve as part of their contingency plan for disposal of the dead hogs when their facility is inaccessible due to weather or is shut down due to other circumstances.

The Iron County Landfill currently accepts dead hogs from Circle Four Farms and is willing to do so in the future on an as needed basis. However The Iron County Landfill will not accept more than 15 loads in any 30 day period.

Loads should be scheduled at least 24 hrs in advance and they should be scheduled through Jaren Scott (see contact info below).

Sincerely



Jaren C. Scott
Iron County Solid Waste Supervisor
jscott@ironcounty.net
435 865 7015

Jim Webb

From Jared Hawes [jaredh@igesinc.com]
Sent Thursday, June 17, 2010 9:57 AM
To Jim Webb
Subject FW: Dead Animal Bulky Waste

From Beaver County, goes in Appendix F of your permit

Jared

From Amy Woodside [mailto:bcwaste@scinternet.net]
Sent Tuesday, June 15, 2010 4:09 PM
To jaredh@igesinc.com
Subject Dead Animal Bulky Waste

Jared

As per your conversation with Mike Nielsen, Landfill Manager, Beaver County Waste Management Service District #5 is able to take up to four (4) loads of dead pigs per year from Circle Four Farms. If you have any further questions please don't hesitate to contact myself at (435) 386-2530 or Mike at (435) 691-0721.

Thank you

Amy Woodside
District Secretary

No virus found in this incoming message
Checked by AVG - www.avg.com
Version 9.0.829 / Virus Database 271.1.1/2940 - Release Date 06/15/10 12:35:00

Fire-
J Ryan Riddle
Fire Warden

Comintssioners-
Ahna Adams
Lois Gulloch
Wayne Smith

Iron County Fire



IGES, Inc
4153 Commerce Dnve
Salt Lake City, UT 84107

December 9, 2009

RE Circle 4 Farms Conditional Use Permit "landfill"

Attention Brett Mickelson

The only condition for the project is obtain pennission/pennits from the local Fire Department and the State/County Fire Warden pnor to any outdoor burning

Burning of any matenal other than natural vegetation is prohibited without proper approvals from the State Department of Environmental Quality

If there are any questions, please fell free to contact me

Respectfully,

J Ryan Riddle
Fire Warden
88 East Fiddlers Canyon Dr Suite 1
Cedar City, Utah 84720
Cell 435-590-4714
Fax 435-865-6874

Post-it® Fax Note	7671	Date	12-9	# of pages	1
To	IGES	From	Iron County Fire		
Co./Dept	Brett Mickelson	Co	Ryan Riddle		
Phone #	801-270-9400 x 101	Phone #	435 590 4714		
Fax #	801-270-9401	Fax #	435 865-6874		



State of Utah
DEPARTMENT OF NATURAL RESOURCES

JON M. HUNTSMAN JR.
Governor

GARY R. HERBERT
Lieutenant Governor

MICHAEL R. STAHLER
Executive Director

Division of Wildlife Resources

JAMES F. RARPOWITZ
Division Director

November 30 2009

Brett Mickelson
Intermountain GeoEnvironmental Services Inc
4153 South Commerce Drive
Salt Lake City Utah 84107

Subject Species of Concern Near the Circle Four Farms Landfill Iron County

Dear Brett Mickelson

I am writing in response to your letter dated November 24, 2009 regarding information on species of special concern proximal to the proposed Circle Four Farms Landfill located in Sections 4 and 5 of Township 31 South Range 13 West SLB&M in Iron County Utah

Within the project area noted above, the Utah Division of Wildlife Resources (UDWR) has historical records of occurrence for kit fox 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 southern region Bruce Bonebrake at (435) 865-6111 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 Bruce Bonebrake SRO



Appendix H

CIRCLE FOUR FARMS LANDFILL (CFFL)

FUGITIVE DUST CONTROL PLAN

PART I – General Information

- 1 **Name of your operation (source)**
Circle IV Farms Class IIIb Landfill
- 2 **Address of Location of your operation of Construction Site**
25 200 North 12,500 West
Iron County, Utah
See Attachment 1
- 3 **UTM coordinates of Latitude/Longitude of stationary emission points**
N/A
- 4 **Length of the project, if temporary**
As yet undetermined
- 5 **Description of process (include all sources of dust and fugitive dust)**
Excavation, temporary stockpiles haul and access roads associated with landfill operations See Attachment 2 for general arrangement
- 6 **Type of material processed or disturbed**
Site soils
- 7 **Amount of material processed**
As yet undetermined
- 8 **Destination of product**
Site disturbance only, material will remain on site
- 9 **Identify the individual who is responsible for the implementation and maintenance of fugitive dust control measures**
Circle 4 LLC
Mr Jim Webb – Environmental and Public Affairs Manager
PO Box 100
Milford UT 84751
(435) 387-6046 O, (435) 691-0825 M
jimwebb@murphybrownllc.com
- 10 **List and attach copies of any contract lease, liability agreement with other companies that may, or will be responsible for dust control on site or during the project**
N/A

PART II – Description of Fugitive Dust Emission Activities

- 1 Type of activities**
Excavation, handling and stockpiling of native site soils, hauling of waste to site on unpaved roads
- 2 List type of equipment generating the fugitive dust**
Backhoe/loader, haul trucks
- 3 Diagram the location of each activity or piece of equipment on site**
See Attachments 3 and 4
- 4 Provide pictures or drawings of each activity Include drawing of the unpaved/paved road network used to move loads on and off the property**
See Attachments 3 and 4
- 5 Vehicle miles traveled on unpaved roads associated with the activity (average speed)**
Vanes with location of available landfill cell speeds will be limited to 35 miles/hour on gravel roads 25 miles/hour on all "natural" roads and 15 miles/hour in active excavation, loading/unloading areas
- 6 Type of dust emitted at each source**
Anticipated dust emitted will be soil and clay dust
- 7 Estimate the size of the release area at which the activity occurs For haul or dirt roads include total miles of road in use during the activity**
As yet undetermined

PART III – Description of Fugitive Dust Emission Controls on Site

- 1 Types of ongoing emission controls proposed for each activity, each piece of equipment and haul roads**
Dust in active work areas and haul roads will be suppressed by water, traveling speeds on haul roads will be kept low (25 mph max),
- 2 Types of additional dust controls proposed for bare, exposed surfaces**
Magnesium chloride spray
- 3 Method of application of dust suppressant**
Water truck
- 4 Frequency of application of dust suppressant**
Water will be applied in active work areas and haul roads every two hours, or more often if necessary
- 5 Explain what triggers the use of a special control measure other than routine measures already in place**
Higher traffic and wind, extended dry (precipitation free) periods will initiate preemptive measures, additional water use will be warranted any time dust stays in the air for 5 minutes or reaches 20 feet in height
- 6 Explain what strategies will be implemented in off-hours**
Water will be applied on all roads used during the day prior to leaving the site each night

PART IV – Description of Fugitive Dust Emission Controls off Site

- 1 Types of emission controls initiated by your operation that are in place off property**

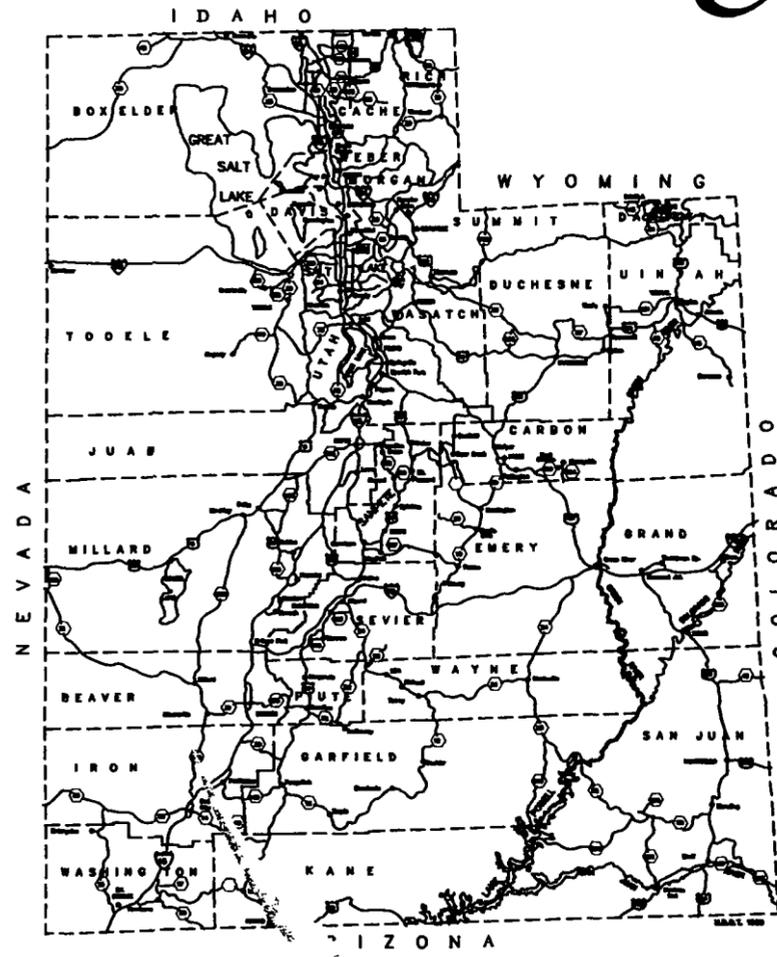
Waste loads will be covered as they travel to the site Imported gravel will be used to stabilize unpaved access roads within 500 feet of intersections with paved roads

- 2 Proposed remedial controls that will be initiated promptly if materials, which may create fugitive dust are deposited on public and private paved roads**

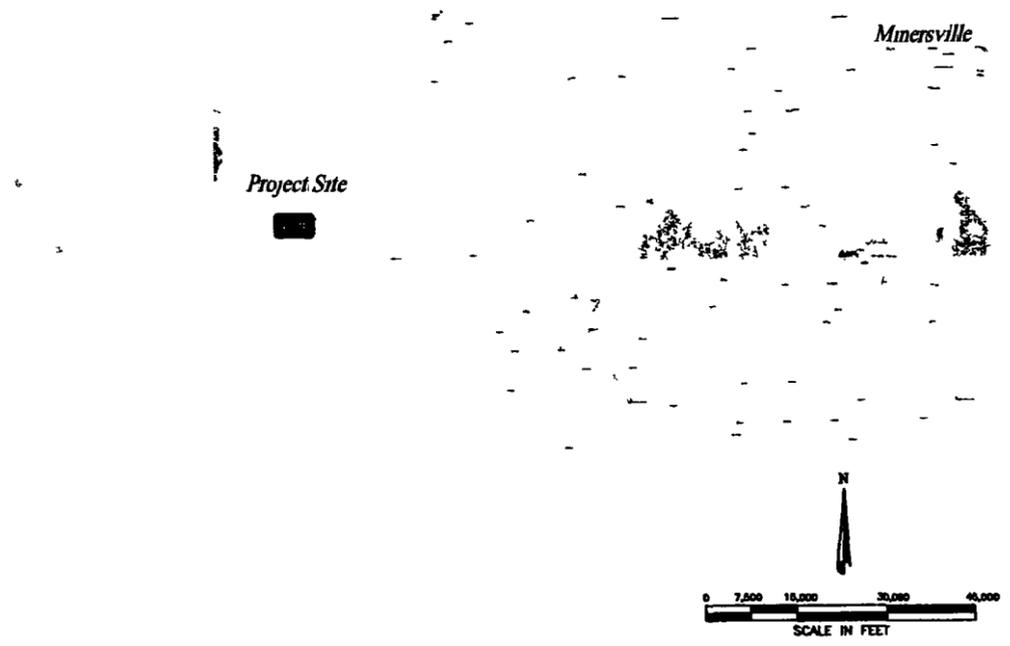
Water trucks will be used to wash affected areas any soil tracked onto a paved road that extends more than 50 feet from the point of origin will be cleaned up by the Owner within 4 hours of discovery Any soil tracked onto a paved road that extends less than 50 feet will be cleaned up by the end of the working day

CIRCLE FOUR FARMS

Class IIIb Landfill Fugitive Dust Control Plan Iron County, Utah



LIST OF DRAWINGS	
SHEET	DRAWING NAME
1	TITLE SHEET
2	GENERAL ARRANGEMENT
3	PHASED CONSTRUCTION
4	SECTION VIEW AND DETAILS



CIRCLE 4 FARMS
341 S MAIN STREET
MILFORD UT 84751

CONSULTANTS



ideas for a changing world

4153 South Commerce Drive
Salt Lake City Utah 84107
(801)270-9400 Fax (801)270-9401

MARK	DATE	DESCRIPTION
	06/11/10	REVISION 1
	01/25/10	FINAL
	12/07/09	FINAL DRAFT

ISSUE
PROJECT NO 01260-001
CAD DWG FILE 01260-001/04 Dust Control.dwg
DRAWN BY JAH
DESIGNED BY JCM
CHECKED BY JW
COPYRIGHT ICES 2010

SHEET TITLE
CIRCLE 4 FARMS-Fugitive Dust
TITLE SHEET

ATTACHMENT
1

X:\PROJECTS\01260-001-Circle-Four-Farms\C4-Dust-Control-June-2010.dwg 6/10/2010 9:59:33 AM

REFERENCE
USCS 2 14 T1 QU DRANGLE 2 145
THE MO, BURNS KNOLL, LATTIMER, B DOR CREEK LT



CIRCLE 4 FARMS
341 S MAIN STREET
MILBORD UT 84751

CONSULTANTS



ideas for a changing world

4153 South Commerce Drive
Salt Lake City Utah 84107
(801)270-9400 Fax: (801)270-5401

- GROUNDWATER MONITORING WELL (EXISTING)
- GROUNDWATER MONITORING WELL (PROPOSED)

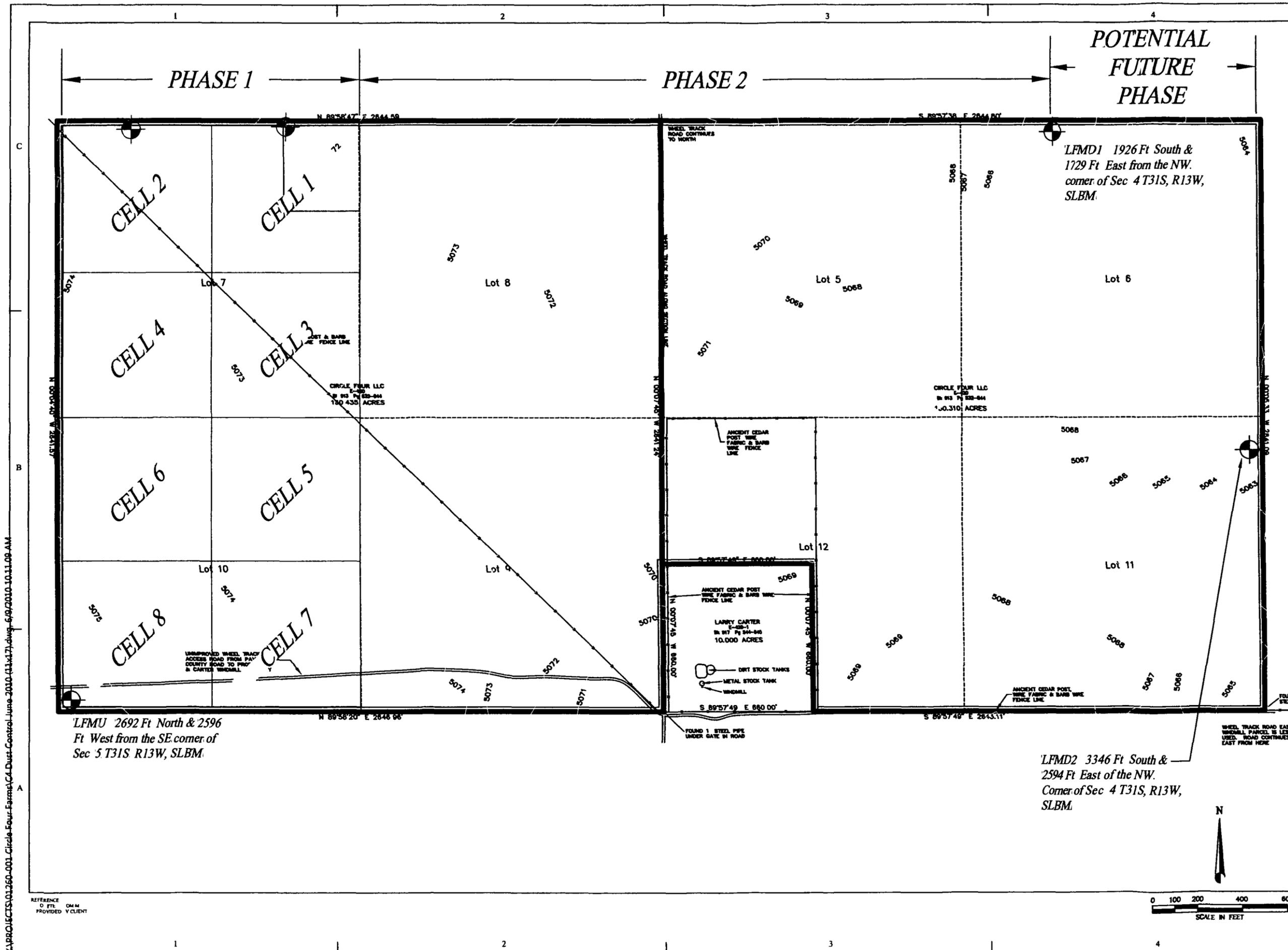
MARK	DATE	DESCRIPTION
	06/11/10	REVISION 1
	01/25/10	FINAL
	12/07/09	FINAL DRAFT

ISSUE	
PROJECT NO	01260-001
CAD DWG FILE	01260-001/C4 Dust Control.dwg
DRAWN BY	JAH
DESIGNED BY	EDM
CHECKED BY	JW
COPYRIGHT	IGES 2010

SHEET TITLE
CIRCLE 4 FARMS-Fugitive Dust
GENERAL
ARRANGEMENT

ATTACHMENT

2



X:\PROJECTS\01260-001 Circle Four Farms\C4 Dust Control.dwg 6/9/2010 10:11:09 AM

NORTHEAST CORNER OF PHASE 1, CELL 1 CONCEPTUAL TRENCH LAYOUT



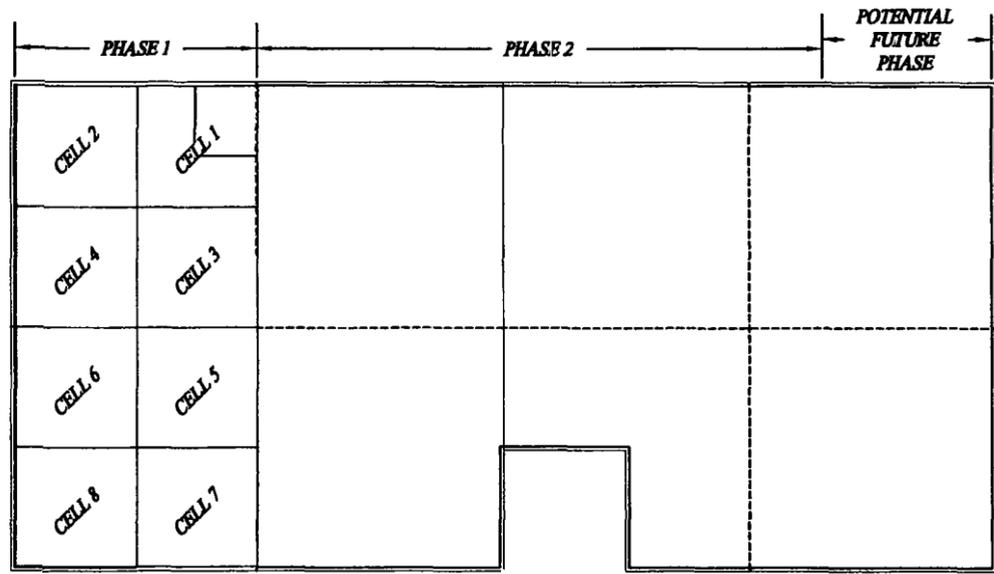
CIRCLE 4 FARMS
341 S MAIN STREET
MILBORD UT 84751

CONSULTANTS

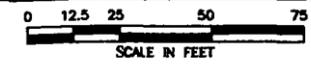
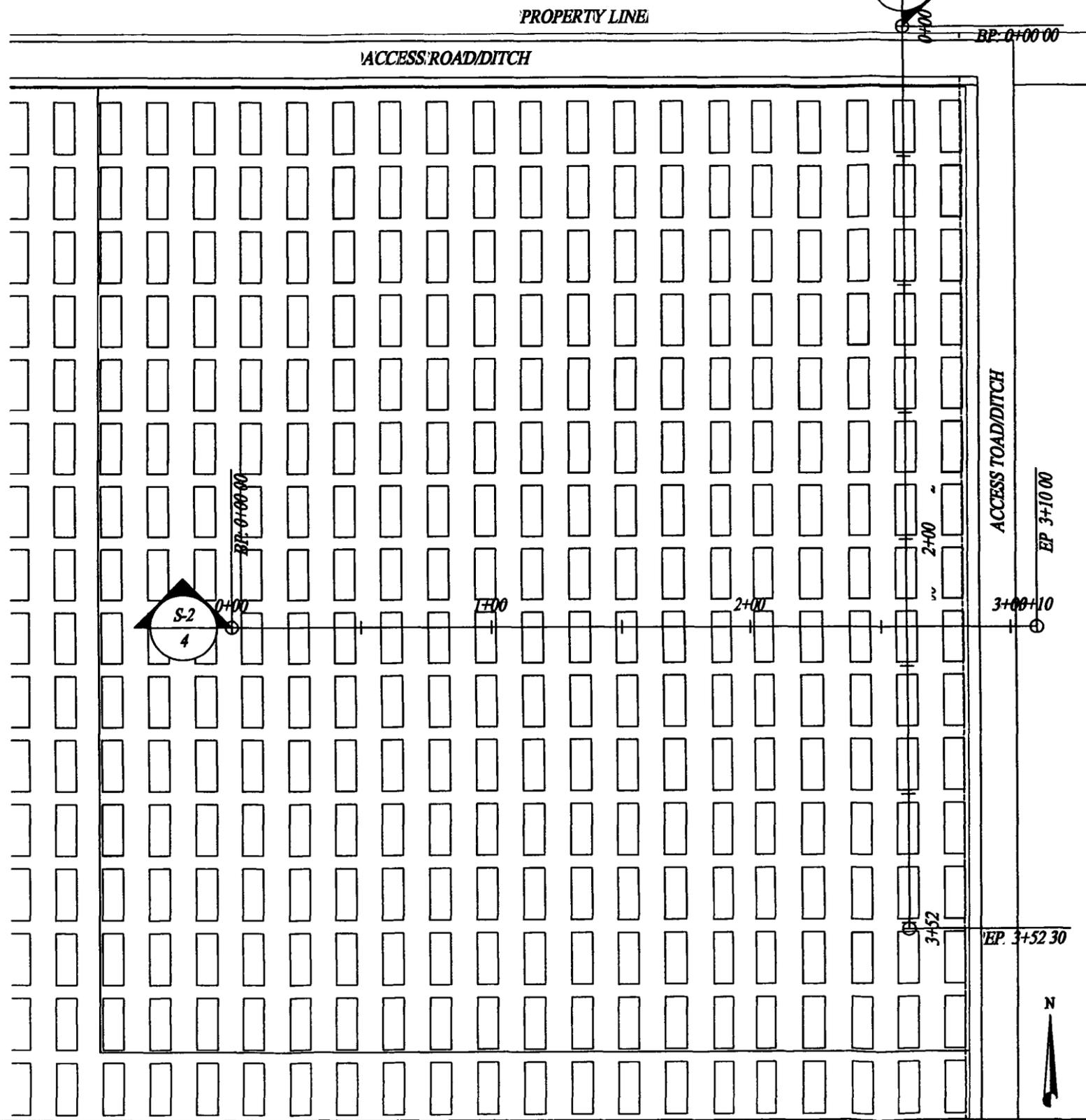


ideas for a changing world

4153 South Commerce Drive
Salt Lake City Utah 84107
(801)270-9400 Fax (801)270-0401



LANDFILL PHASE &
CELL DEVELOPMENT



INDIVIDUAL TRENCH

MARK	DATE	DESCRIPTION
	06/11/10	REVISION 1
	01/25/10	FINAL
	12/07/09	FINAL DRAFT

ISSUE
PROJECT NO 01260-001
CAD DWG FILE 01260-001/C4 Dust Control.dwg
DRAWN BY JMH
DESIGNED BY BOM
CHECKED BY JW
COPYRIGHT IGES 2010

SHEET TITLE
CIRCLE 4 FARMS Fugitive Dust
**PHASED
CONSTRUCTION**

ATTACHMENT

X:\PROJECTS\01260\C4 Dust Control June 2010 (11x17) dwg 6/11/2010 8:53:43 AM

REFERENCE
D PTD FROM MAP
O IDED BY CLIENT



CIRCLE 4 FARMS
341 S MAIN STREET
MILFORD UT 84751

CONSULTANTS



ideas for a changing world

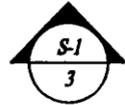
4153 South Commerce Drive
Salt Lake City Utah 84107
(801)270-9400 Fax (801)270-0401

PROPERTY LINE

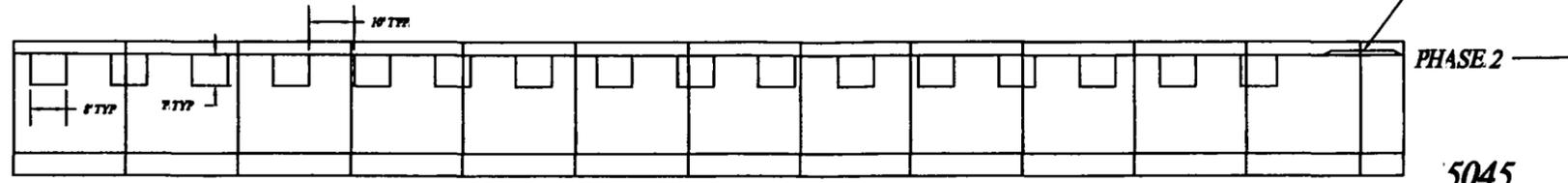
ACCESS ROAD (SEE SECTION 3)

5055

5055



ELEVATION VIEW - TRENCH EXCAVATION PLAN (NORTH-SOUTH)
NOT TO SCALE

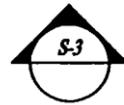
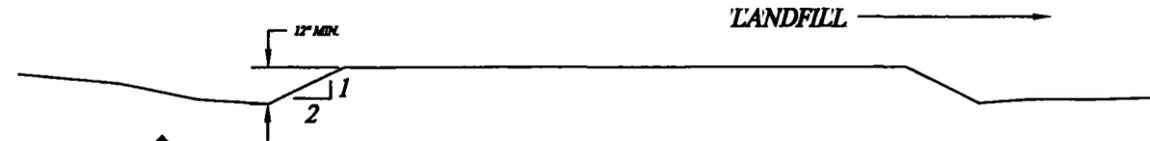


5045

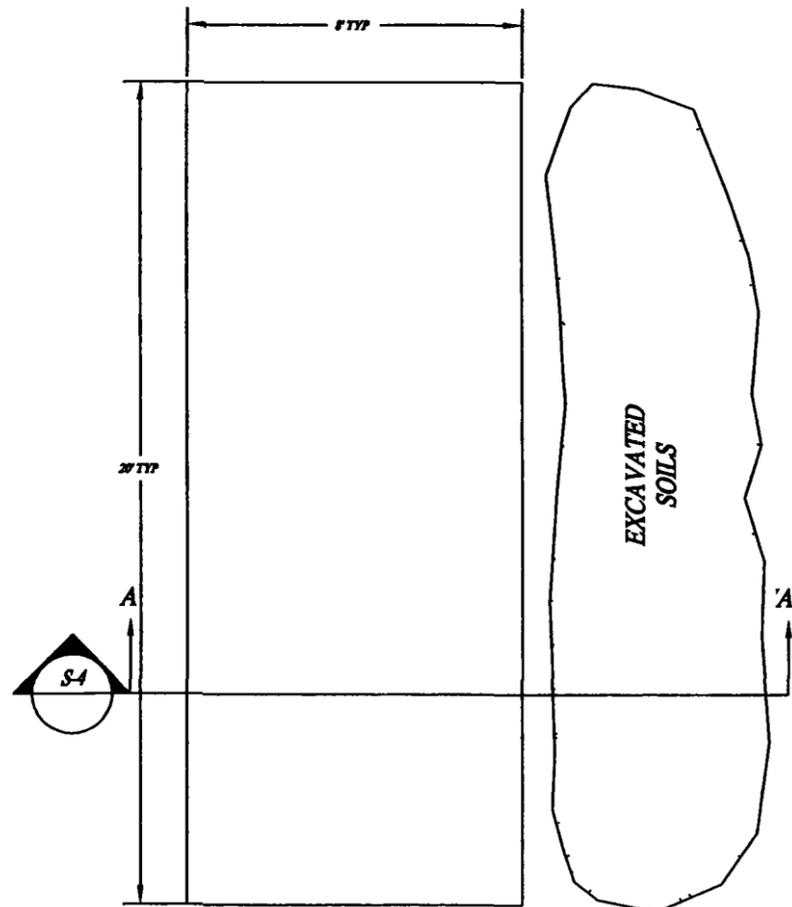
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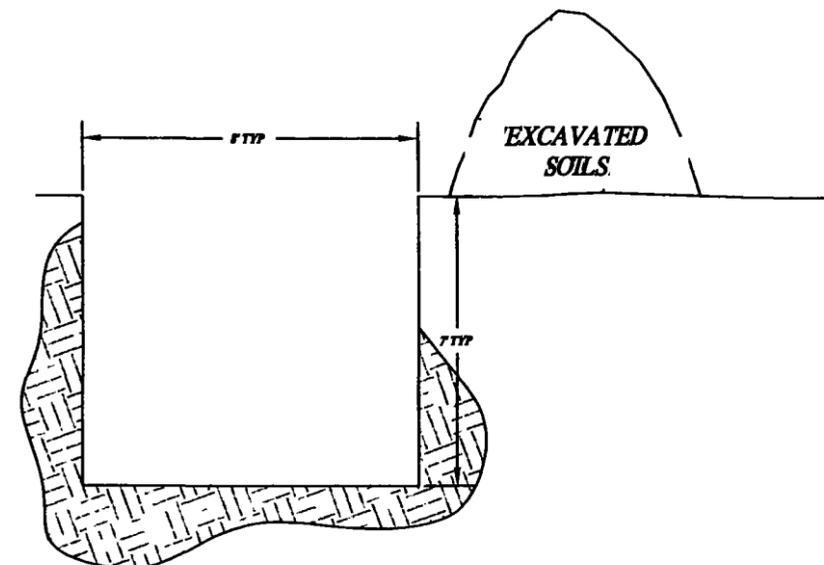
ELEVATION VIEW - TRENCH EXCAVATION PLAN (WEST/EAST)
NOT TO SCALE



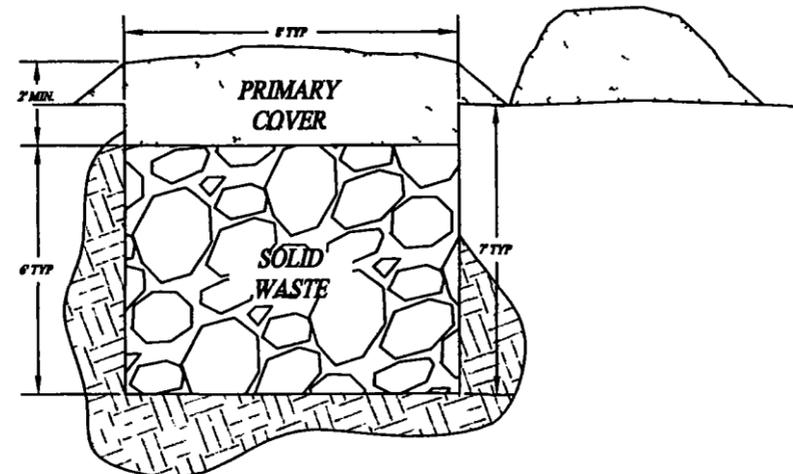
PERIMETER ACCESS ROAD/RUN-ON DIVERSION BERM
NOT TO SCALE



TRENCH EXCAVATION (PLAN VIEW)



TRENCH EXCAVATION (ELEVATION VIEW)
NOT TO SCALE



INITIAL FILL AND COVER (ELEVATION VIEW)
NOT TO SCALE

MARK	DATE	DESCRIPTION
	06/11/10	REVISION 1
	01/25/10	FINAL
	12/07/09	FINAL DRAFT

PROJECT NO	01260-001
CAD DWG FILE	01260-001/CA Dust Control.dwg
DRAWN BY	JMH
DESIGNED BY	BOM
CHECKED BY	JW
COPYRIGHT	IGES 2010

SHEET TITLE
CIRCLE 4 FARMS Fugitive Dust
**ELEVATION VIEW
& DETAILS**

ATTACHMENT

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REFER TO CE
ADAPTED FROM MAP
NO DED BY CLIENT

Appendix I

28
CIRCLE FOUR FARMS
PO Box 100
MILFORD UT 84751
ATTN Jim Whisler

29
21

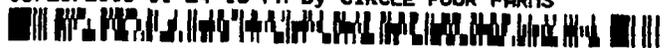
IRON COUNTY
82 North 100 East Suite # 102
Cedar City, Utah 84720

CONDITIONAL USE PERMIT

Date October 1, 2009

APN E-420

00601661

B 1187 P 1858 Fee \$22.00
Debbie B Johnson, Iron County Recorder Page 1 of 9
03/26/2010 01:24:16 PM By CIRCLE FOUR FARMS


The Petitioners, Circle 4 Farms having duly submitted a request for a Conditional Use Permit to the Iron County Planning Commission. The Iron County Planning Commission having reviewed, discussed, and voted on the Conditional Use Permit application as submitted by the Petitioners and having determined that the applicable ordinances and statutes have been complied with and that good cause exists and supportive of granting a Conditional Use Permit. Now therefore, the Iron County Planning Commission does hereby grant the Petitioners a Conditional Use Permit as related to certain real property described as follows:

Lots 5, 6, 11 and 12 in Section 4 and Lots 7, 8, 9 and 10 in Section 5, Township 31 South, Range 13 West, SLB&M

EXCLUDING THEREFROM Beginning at the West Quarter Corner of Section 4, Township 31 South, Range 13 W, SLB&M and running thence South 89°57'49" East along the quarter section line 669 feet, thence North 00°07'45" West 660 feet, thence North 89°57'49" West 660 feet, thence South 00°07'45" East along the section line 660 feet to the point to beginning

All of said property being located in Iron County, State of Utah, and said Conditional Use Permit being granted for the use or uses of LANDFILL in the zone presently classified as Industrial, and said Conditional Use Permit granted subject to the following terms, provisions, and conditions, to wit:

1. Petitioners shall comply with all federal, state, Iron County, Department of Environmental Quality (DEQ), Occupational Safety and Health Administration (OSHA), National Institute of Occupational Safety and Health (NIOSH), and Southwest Utah Public Health Department laws, rules, and regulations related to the operation of a landfill
2. The information provided by the Petitioner in the application for this permit, including the final approved application submitted to the State, is hereby incorporated as the description of the project authorized by this conditional use permit, except as modified by the conditions herein. Development and operation of

Circle 4 Farms
C U P – Landfill
October 1, 2009

the landfill must closely resemble the authorized project, with any significant alterations or additional uses subject to authorization by the Planning Commission

- 3 Petitioners shall submit an acceptable dust plan to Iron County Zoning Department, DEQ, and Southwest Utah Public Health Department for the control of dust at the proposed Landfill. Said plan is subject to approval by the aforementioned departments. Petitioners shall adhere to submitted plans and shall be proactive in responding to any potential dust problems.
- 4 All private roads and driveways serving the project shall be designed and maintained to minimize the generation of dust and tracking of soil onto adjacent public roads. Such roads shall be kept in safe condition and maintained to allow vehicles utilizing the operation or facility to have reasonable all-weather access to the site.
- 5 The Petitioner shall be responsible for the acquisition and installation of ingress and egress lanes of the County road at locations accessing the landfill, should the need for such arise.
- 6 Adequate parking area(s) shall be provided for transfer vehicles.
- 7 All means and methods utilized in the transportation of dead animals or other wastes shall fully contain all substances being transported, solids, liquids or otherwise, and prevent leakage or loss of any materials being transported.
- 8 All outside and security lighting shall be downward directed and directed away from adjacent neighboring properties.
- 9 Petitioners shall provide and utilize water to control dust and for proper operation of the landfill, sanitation facilities, etc. Petitioner shall provide proof of availability and quantity of water needed to control dust to the Iron County Building & Zoning Department. A safe and adequate water supply for drinking and emergency use (i.e. first aid) shall be provided, as required by the Southwest Utah Public Health Department.
- 10 Petitioners shall provide sanitation facilities as approved by the Southwest Utah Public Health Department. All sanitation facilities, temporary or otherwise, shall be kept in a sanitary state and maintained regularly in accordance with Southwest Utah Public Health Department standards.
- 11 Petitioners shall follow emission regulations and requirements as set forth or recommended by the Department of Environmental Quality (DEQ).
- 12 Petitioners shall obtain building permits for the onsite sanitation facilities and any accessory structures from the Iron County Building Department.

00601661

B 1187 P 1859 Fee \$28.00
Debbie B. Johnson, Iron County Recorder Page 2 of 9
03/26/2010 01:24:18 PM By CIRCLE FOUR FARMS



Circle 4 Farms
C U P – Landfill
October 1, 2009

- 13 Petitioners shall obtain a septic system permit for any onsite sanitation facilities from the Southwest Department of Public Health and adhere to any imposed requirements
- 14 A letter or plan of approval from the Iron County Fire Warden shall be filed with the Iron County Zoning Department. Petitioner shall adhere to submitted plans
- 15 Petitioners must obtain an Impact of the Wildlife Habitat Statement from the Division of Wildlife Resources. Petitioners shall obtain clearance from the Division of Wildlife Resources prior to the clearing of any ground or the erecting of any structures. Petitioners hereby agree to follow the Iron County Habitat Conservation Plan. Petitioners agree to continue to cooperate with the Division of Wildlife Resources in obtaining all necessary clearances for future expansion of landfill operations
- 16 Petitioners shall provide a closure and maintenance plan including a plan of reclamation for the disturbed area to be approved by the Iron County Building & Zoning Department. The reclamation plan shall include revegetation of the disturbed surfaces, using plant species recommended by the Bureau of Land Management
- 17 Petitioners must provide evidence of a financial guarantee (e.g. bond) for the operation and reclamation of the landfill to the county, in an amount equal to one thousand dollars (\$1,000.00) per acre of landfill. The financial guarantee as accepted and enforced by the State of Utah will suffice for meeting the financial objectives of Iron County. If a bond is issued to Iron County, said bond may be reduced by five thousand dollars (\$5,000.00) for each five acre section that is closed and thereafter reclaimed. At no time shall the landfill utilize more than 40 acres prior to reclamation
- 18 The Petitioner shall provide evidence of insurance coverage to the Iron County Building & Zoning Department. Such coverage shall be maintained throughout the term of this permit and until such time as all post-closure requirements are met and certified by the appropriate local, state and federal agencies. Such insurance coverage shall include but not necessarily be limited to the following: general liability, professional liability, and, environmental impairment liability coverage insuring clean-up costs, and endorsing for "Sudden and Accidental" contamination or pollution. Such coverage shall be in an amount sufficient to meet all applicable state and federal requirements, with no special limitations
- 19 Petitioner shall install a perimeter security fence, designed to discourage unauthorized access by persons and vehicles, around landfill prior to beginning operations. Fence design shall be submitted to Iron County Building & Zoning Department for approval prior to installation. Access to landfill shall be through gates which shall remain locked except when landfill personnel are onsite

00601661

B 1187 P 1860 Fee \$28.00
Debbie B. Johnson, Iron County Recorder Page 3 of 9
03/26/2010 01:24:16 PM By CIRCLE FOUR FARMS



Circle 4 Farms
C U P – Landfill
October 1, 2009

- 20 Each point of access shall be posted with an easily visible sign indicating the facility name and emergency contact information
- 21 Any litter at operations and facilities shall be contained onsite and collected daily to prevent safety hazards, nuisances or similar problems and off-site migration
- 22 The Petitioner shall provide adequate housekeeping for the maintenance of facility equipment and shall minimize accumulations of fuel drums, moperable equipment, parts, tires, scrap, and similar items
- 23 All storage tanks shall be located at the original ground level and potentially hazardous materials shall be stored in State approved containers
- 24 Petitioners shall maintain landfill operations an adequate distance from adjacent properties to prevent damage to adjacent properties, which properties include but are not limited to, fences, ditches, irrigation systems, roads, easements, rights-of-way, and utilities. In no case shall the banks, berms, or deposited materials be closer than twenty (20) feet from any adjacent properties
- 25 The grading, digging, and placement of dirt shall be in accordance with Mining Health & Safety (MSHA) standards and in a manner consistent with this permit. Depth of landfill cells shall not exceed the depth authorized through the state landfill permit
- 26 Materials deposited at the landfill shall be limited to wastes consistent with 'solid waste' as defined by the State of Utah. Hazardous wastes including but not limited to batteries, oil, paint, poisons, medical wastes, pesticides and other materials capable of causing public health or safety problems shall not be accepted, stored, or deposited at the landfill
- 27 Petitioners shall protect the ground water source. Petitioner shall install and test sufficient monitoring wells to identify any contamination from the landfill. The number and placement shall be as recommended by the Utah Department of Environmental Quality. The monitoring wells shall be used to verify that ground and surface waters are protected from potential contamination by the landfill operations
- 28 The Petitioner shall comply with all drainage requirements of the Utah Department of Environmental Quality and any additional requirements of the Iron County Engineer and Southwest Department of Public Health. All drainage shall be designed and constructed so as to meet all applicable drainage and grading requirements of the Department of Environmental Quality. The landfill and drainage shall in all cases be designed so as to cause surface water to be diverted away from disposal areas. All design modifications must have the prior approval of the Department of

00601661

Environmental Quality Petitioner shall prevent diversion or run-off of drainage onto neighboring properties in excess of historical amounts

- 29 The landfill operations shall be able to operate between 7 00 a m and 10 00 p m daily The landfill operations may also operate during other hours provided the noise, dust and hghtmg do not unreasonably mterfere with the surrounding property owner's quiet enjoyment of their land The landfill operations shall be deemed to be unreasonably mterfering with surrounding property owner's qmet enjoyment of theu land if there is a structure within ½ mile of the boundary of the landfill, and a reasonable noise, dust, or lighting complaint is received by law enforcement or the Iron County Bmldmg & Zonmg Department Either party is entitled to a hearing with the Iron County Planmng Comission to determine whether the complamt is reasonable The burden of cost for such hearings shall be home by the Petitioner Each party shall follow heanng procedures set forth in the Iron County Land Management Code
- 30 Open bumng of solid waste, except for the infrequent burning of landcleannng debris, or debns from emergency clean-up operations, or any other wastes as approved by the Department of Environmental Quahty, and local fire authorities, is prohibited at all landfill operations and facilities
- 31 Petitioner shall keep a site operatmg record which shall contam at the mmimum the followmg mformation
 - a) Copy of the Conditional Use permit,
 - b) Copy of the Landfill Pemut issued by the State of Utah,
 - c) The approved Site Development Plan,
 - d) The Site Operatmg Plan,
 - e) The Landfill Gas Management Plan,
 - f) Records of mconung weights or volumes or residual weights or volumes for all loads,
 - g) Inspection records, traming procedures, and notification procedures relatmg to excluding the receipt of prohibited waste,
 - h) All results from gas momtormg and any remediation plans relatmg to explosive and other gases,
 - i) Any and all demonstration, certification, findmgs, momtormg, testing, and analytical data relating to groundwater momtormg and corrective action,
 - j) Closure and post-closure care plans and any momtonng, testmg, or analytical data relatmg to post-closure requirements,
 - k) Any and all cost estimates and financial assurance documentation relatmg to financial assurance for closure and post-closure,
 - l) Copies of all correspondence and responses relating to the operation of the facility, modifications to the permit, approvals, and other matters pertainmg to techmcal assistance,

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- m) Any and all documents, manifests, shipping documents, trip tickets, etc , involving special or irregular waste,
- n) Training records,
- o) Records documenting the facilities annual waste acceptance,
- p) A record of unauthorized material removal,
- q) A record of alternate operating hours,
- r) All landfill gas management plan required reports and submittals,
- s) A record of all cover inspections,
- t) A log of litter cleanup activities,
- u) Fire occurrence notices (if applicable),
- v) A log of dust nuisance control efforts,
- w) A daily log book or file of special occurrences encountered during operations and methods used to resolve problems arising from these events, including details of all incidents that required implementing emergency procedures. Special occurrences shall include but are not limited to fires, injury and property damage, accidents, explosions, receipt or rejection of prohibited wastes, flooding, earthquake damage and other unusual occurrences,
- x) Any written public complaints received, including
 - i the nature of the complaint,
 - ii the date the complaint was received,
 - iii if available, the name, address, and telephone number of the person or persons making the complaint, and
 - iv any actions taken to respond to the complaint

All information contained in the operating record must be made available for inspection by the appropriate regulatory agencies upon request, including but not limited to the Iron County Building & Zoning Department, the Southwest Department of Public Health, and the Department of Environmental Quality (DEQ). The landfill shall retain all information contained within the operating record and the different plans required for the facility for the life of the facility including the post-closure period.

- 32 The operator of the landfill facility shall implement a load checking program to prevent the acceptance of waste which is prohibited by this permit. A copy of the load checking program and copies of the load checking records for the previous year shall be maintained in the operating record and be available for review by the appropriate regulatory agencies upon request, including but not limited to the Iron County Building & Zoning Department, the Southwest Department of Public Health, and the Department of Environmental Quality (DEQ). This program must include at a minimum

- a) The number of random load checks to be performed,

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Cucle 4 Farms
C U P – Landfill
October 1, 2009

- b) A location for the storage of prohibited wastes removed during the load checking process that is separately secured or isolated,
 - c) Records of load checks and the training of personnel in the recognition, proper handling, and disposition of prohibited waste
- 33 Personnel assigned to the operation or facility shall be adequately trained in subjects pertinent to site solid waste operations and maintenance, hazardous materials recognition and screening, use of mechanized equipment, environmental controls, emergency procedures and the requirements of this permit. A record of training history shall be maintained and shall be made available for inspection by the Iron County Building & Zoning Department upon request
- 34 Due to the remote nature of the landfill, all personnel shall receive annual emergency first aid training as recommended and approved by the Iron County Ambulance Supervisor
- 35 The Petitioner shall be responsible for the installation and maintenance of all required signage including regulatory, safety and directional signage
- 36 Notification of the restrictions on disposal of prohibited waste and the procedures for proper disposal at other approved disposal sites shall be provided to waste haulers on a routine basis. Notices shall also be posted at prominent locations at the landfill facility to inform waste haulers of the rules governing the disposal of prohibited waste and that anyone negligently or intentionally bringing in any prohibited waste shall be prosecuted under the fullest extent of the law
- 37 The Petitioner shall provide adequate supervision and a sufficient number of qualified personnel to ensure proper operation of the site in compliance with all applicable laws, regulations, permit conditions and other requirements. The operator shall notify the Iron County Building & Zoning Department, the Iron County Sheriff's Department, the Iron County Fire Warden, the Department of Environmental Quality and the Southwest Department of Public Health in writing of the current name, address and telephone number of the operator or other person responsible for the operation. A copy of the written notification shall be placed in the operating record
- 38 The landfill facility shall have adequate communication equipment available to site personnel to allow quick response to emergencies
- 39 The Petitioner shall take adequate steps to control or prevent the propagation, harborage and attraction of flies, rodents, or other vectors, and animals, and to minimize bird attraction
- 40 Salvaging or scavenging of any type within the landfill shall be prohibited

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B 1187 P 1864 Fee \$28 00
Debbie B Johnson, Iron County Recorder Page 7 of 9
03/26/2010 01 24 16 PR By CIRCLE FOUR FARMS



Circle 4 Farms
C U P – Landfill
October 1, 2009

- 41 Petitioner agrees to remove subject property involved in landfill operations from any existing Agricultural Protection Areas and Greenbelt designations
- 42 This conditional use permit does not authorize the composting (above-ground decomposition) of dead animals on the site, or the acceptance of wastes generated from sources other than Circle 4 farms. Sufficient information on such alternatives was not available at the time of this review. These uses may be considered through a future supplemental conditional use permit review, without prejudice.
- 43 By signing this Conditional Use Permit, the applicant agrees to adhere to the conditions contained herein.
- 44 This Conditional Use Permit is not valid until a signed and notarized copy recorded in the office of the Iron County Recorder is returned to the Iron County Building & Zoning Department.
- 45 This Conditional Use Permit runs with the property described herein and is non-transferable to any other location.
- 46 In the case of conflict between the conditions or limitations of this permit and any other permit related to the landfill property, the more restrictive shall prevail.

DATED this 1 day of October, 2009

IRON COUNTY ZONING DEPARTMENT


Zoning Officer or Administrator

IRON COUNTY PLANNING COMMISSION


Chris Dahlm, Chairman

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B 11B7 P 1865 Fee \$28.00
Debbie B. Johnson, Iron County Recorder Page 8 of 9
03/26/2010 01:24:16 PM By CIRCLE FOUR FARMS



Circle 4 Farms
CUP - Landfill
October 1, 2009

PETITIONERS

CIRCLE 4 FARMS

Debbie Batten, General Manager 3/23/10
, Petitioner

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B 1187 R 1866 Fee \$28 00
Debbie B Johnson, Iron County Recorder Page 9 of 9
03/26/2010 31 24 18 PM By CIRCLE FOUR FARMS



Appendix J

CLOSURE COST ESTIMATES (Phase I)

PHASE I AREA (Sq Ft) = 3 484 800

	Stan	Finish
Cell 1 (Sq Ft) = 435 600	Jan 11	Jul 13
Cell 2 (Sq Ft) = 435 600	Jul 13	Feb-16
Cell 3 (Sq Ft) = 435 600	Feb-16	Sep-18
Cell 4 (Sq Ft) = 435 600	Sep 18	Apr 21
Cell 5 (Sq Ft) = 435 600	Apr 21	Oct 23
Cell 6 (Sq Ft) = 435 600	Oct 23	May 26
Cell 7 (Sq Ft) = 435 600	May 26	Dec 28
Cell 8 (Sq Ft) = 435 600	Dec 28	Jul 31

(Landfill usage will be approximately 3.9 acres/year)

1 0 SITE SECURITY AND FACILITIES	UNITS	UNIT RATE	COST	COMMENTS
1 1 Entrance Gate	0	LS	\$0	Gate installed at beginning of operation (7 920 Ft / 8) Maintenance of 1/8 penmeter Maintained as pan of daily operations
1 2 Penmeter Fencmg	990	LS	\$990	
1 3 Access Roads	0	LS	\$0	
Subtotal			\$990	
Contingency (10%)			\$99	
Section 1 0 Total			\$1,089	

2 0 ENVIRONMENTAL CONTROL SYSTEMS	UNITS	UNIT RATE	COST	COMMENTS
2 1 Landfill Gas Monitoring System				No Monitoring Required
2 2 Ground Water Monitoring System				No Monitoring Required
2 3 Run On Diversion Channel Construction				Additional Run On diversion is not required Access road and associated ditches will already be constructed as pan of ongoing operations
2 3 1 Mob./Oemob	0	NA	\$0	
2 3 2 Clearing and Grubbing	0	NA	\$0	
2 3 3 Rough Excavation	0	NA	\$0	
2 3 4 Finish Grading	0	NA	\$0	
2 5 Storm Water Detention Basin Costs				No Storm Water Detention Basin
2 6 Run Off Collection System Costs				Additional Run Off diversion is not required access road and associated ditches will already be constructed as pan of ongoing operations
2 6 1 Mob /Demob	LS 0	\$3 000	\$0	
2 6 2 Drainage Swale	Ft 0	\$5	\$0	
2 6 3 Drainage Swale Erosion Mauing	Sq Ft 0	0 07	\$0	
2 6 4 Swale Rip Rap Lining	Cu Yd 0	\$44	\$0	
2 6 5 Channel Erosion Matting	Sq Ft 0	\$0 07	\$0	
2 6 6 Channel Rip Rap Lining	Cu Yd 0	\$44	\$0	
Subtotal			\$0	
Contingency (10%)			\$0	
Bond Fees (1.5%)			\$0	
Contractor Fees (5%)			\$0	
Section 2 0 Total			\$0	
Section 2 0 Total			\$0	

3 0 FINAL COVER REGRADING AND DOCUMENTATION	UNITS	UNIT RATE	COST	COMMENTS
3 1 Final Cover				
3 1 1 Mob /Demobe	LS 1	\$3 000	\$3 000	
3 1 2 Finish Grading of Final Cover	Sq Ft 433 600	\$0 04	\$17 424	
3 1 3 Foundation Soil Compaction	Sq Ft 0	\$0 10	\$0	
3 1 4 Water Truck	Week 2	\$1 000	\$2 000	
3 1 5 Revegetation	Acre 10	\$550	\$5 500	
3 2 Final Cover Construction Monitoring Costs				
3 2 1 Project Mangement	Hours 30	\$80	\$2 400	
3 2 2 Final Certification Repon	LS 1	\$2 000	\$2 000	
Subtotal			\$32 324	
Re engineering /Contingency (10%)			\$3 232	
Bond Fees (1.5%)			\$485	
DSHW Fees (5%)			\$1 616	
Section 3 0 Total			\$37 657	

NA Not Applicable Sq Ft Square Foot
 LS Lump Sum Cu Yd Cubic Yard
 Ft Foot Ea Each

\$38 746 Total Closure Costs

CLOSURE COST ESTIMATES (Phases 2)

PHASE 2 AREA (Sq Ft) = 6 185 520

Cell 1 (Sq Ft) =	435 600	Jul 31	Jan 34
Cell 2 (Sq Ft) =	435 600	Jan 34	Aug 36
Cell 3 (Sq Ft) =	435 600	Aug 36	Mar 39
Cell 4 (Sq Ft) =	435 600	Mar 39	Sep-41
Cell 5 (Sq Ft) =	435 600	Sep-41	Apr-44
Cell 6 (Sq Ft) =	435 600	Apr-44	Nov 46
Cell 7 (Sq Ft) =	435 600	Nov-46	Jun-49
Cell 8 (Sq Ft) =	435 600	Jun 49	Dec 51
Cell 9(Sq Ft) =	435 600	Dec 51	Jul 54
Cell 10 (Sq Ft) =	435 600	Jul 54	Feb-57
Cell 11 (Sq Ft) =	435 600	Feb-57	Sep-59
Cell 12 (Sq Ft) =	435 600	Sep-59	Mar 62
Cell 13 (Sq Ft) =	435 600	Mar-62	Oct-64
Cell 14 (Sq Ft) =	435 600	Oct-64	May 67

(Landfill usage will be approximately 3.9 acres/year)

1 0 SITE SECURITY AND FACILITIES	UNITS	UNIT RATE	COST	COMMENTS
1 1 Entrance Gate	0	NA	\$0	Gate installed at beginning of operation (8 200 Ft / 14) Maintenance of 1/14 perimeter Maintained as part of daily operations
1 2 Perimeter Fencmg	585	NA	\$585	
1 3 Access Roads	0	NA	\$0	
Subtotal			\$585	
Contingency (10%)			\$0	
Section 1 0 Total			\$585	

2 0 ENVIRONMENTAL CONTROL SYSTEMS	UNITS	UNIT RATE	COST	COMMENTS
2 1 Landfill Gas Monitoring System				No Monitoring Required
2 2 Ground Water Monitoring System				No Monitoring Required
2 3 Run On Diversion Channel Constmction				Additional Run On diversion is not required, Access road and associated ditches will already be constructed as part of ongoing operations
2 3 1 Mob /Demob	0	NA	\$0	
2 3 2 Cleaning and Grubbing	0	NA	\$0	
2 3 3 Rough Excavation	0	NA	\$0	
2 3 4 Finish Grading	0	NA	\$0	
2 5 Storm Water Detention Basin Costs				No Storm Water Detention Basin
2 6 Run Off Collection System Costs				Additional Run Off diversion is not required access road and associated ditches will already be constructed as pan of ongoing operations
2 6 1 Mob /Demob	LS 0	\$3 000	\$0	
2 6 2 Drainage Swale	Ft 0	\$5	\$0	
2 6 3 Drainage Swale Erosion Matting	Sq Ft 0	0 07	\$0	
2 6 4 Swale Rip Rap Lming	Cu Yd 0	\$44	\$0	
2 6 5 Channel Erosion Matting	Sq Ft 0	\$0 07	\$0	
2 6 6 Channel Rip Rap Lming	Cu Yd 0	\$44	\$0	
Subtotal			\$0	
Contingency (10%)			\$0	
Bond Fees (1.5%)			\$0	
Contractor Fees (5%)			\$0	
Section 2 0 Total			\$0	
Section 2 0 Total			\$0	

3 0 FINAL COVER REGRADING AND DOCUMENTATION	UNITS	UNIT RATE	COST	COMMENTS
3 1 Final Cover				
3 1 1 Mob /Demobe	LS 1	\$3 000	\$3 000	
3 1 2 Finish Grading of Final Cover	Sq Ft 435 600	\$0 04	\$17 424	
3 1 3 Foundation Soil Compaction	Sq Ft 0	\$0 10	\$0	
3 1 4 Water Truck	Week 2	\$1 000	\$2 000	
3 1 5 Revegetation	Acre 10	\$550	\$5 500	
3 2 Fmal Cover Constmction Monitoring Costs				
3 2 1 Project Mangement	Hours 30	\$80	\$2 400	
3 2 2 Fmal Certification Report	LS 1	\$2 000	\$2 000	
Subtotal			\$32 324	
Re engineering /Contingency (10%)			\$3 232	
Bond Fees (1.5%)			\$485	
DSHW Fees (5%)			\$1 616	
Section 3 0 Total			\$37,657	

NA Not Applicable Sq Ft Square Foot
 LS Lump Sum Cu Yd Cubic Yard
 Ft Foot Ea Each

\$38,242 Total Closure Costs

POST CLOSURE COST ESTIMATES

1 0 SITE SECURITY AND FACILITIES	UNITS	UNIT RATE	COST	COMMENTS	
1 1 Entrance Gate	LS	1	\$400	\$400	Cost to replace the gate once in 30 years
1 2 Penmeter Fencing	LS	1	\$5 000	\$5 000	
1 3 Access Roads	Day	30	\$1,000	\$30,000	One day of grading work once a year
Subtotal				\$35 400	
Contingency (10%)				\$3 540	
Section 1 0 Total				\$38,940	

2 0 ENVIRONMENTAL CONTROL SYSTEMS	UNITS	UNIT RATE	COST	COMMENTS
2 1 Landfill Gas Monitoring	0	NA	\$0	
2 2 Ground Water Monitoring	Year	30	\$1 000	\$30 000
2 3 Leachate Collection System Monitoring	0	NA	\$0	
2 4 Run On Diversion Channel Construction	0	NA	\$0	
2 5 Storm Water Detention Basin Repairs	0	NA	\$0	
2 6 Run On / Run Off Collection System Repairs				
2 6 1 System Inspection	Hour	30	\$100	\$3 000
2 6 2 System Repairs	Day	30	\$500	\$15,000
Subtotal				\$48 000
Re engineering /Contingency (10%)				\$4 800
Bond Fees (1 5%)				\$720
DSHW Fees (5%)				\$2 400
Section 2 0 Total				\$55,920

3 0 FINAL COVER SYSTEM	UNITS	UNIT RATE	COST	COMMENTS	
3 1 Final Cover Inspection / Documentation	Hour	30	\$100	\$3 000	5% of the 222 Acres repaired per year
3 2 Surface Revegetation	Acre	11 1	\$1 000	\$11 100	
3 3 Final Cover Repairs	Day	11 1	\$1,000	\$11,100	
Subtotal				\$25 200	5% of the 222 Acres repaired per year
Re engineering /Contingency (10%)				\$2 520	
DSHW Fees (5%)				\$555	
Section 3 0 Total				\$28,275	

\$123 135 Total required at end of landfill life

\$6 157 Average required to be funded at the end of each year
 \$15 392 Average required to be funded at the beginning of each of the first 8 cells (20 years)

CLOSURE AND POST CLOSURE COST ESTIMATES

			Closure Cost	Yearly Post Closure Cost (fully funded during first 30 years of operation)	Total Financial Assurance Required	Date of New Cell (2011 landfill beginning) *
Phase 1	Cell	1	\$38 746		\$15 392	Jan 11
	Cell	2	\$38 746		\$15 392	Jul 13
	Cell	3	\$38 746		\$15 392	Feb-16
	Cell	4	\$38 746		\$15 392	Sep-18
	Cell	5	\$38 746		\$15 392	Apr 21
	Cell	6	\$38 746		\$15 392	Oct 23
	Cell	7	\$38 746		\$15 392	May 26
	Cell	8	\$38 746		\$15 392	Dec 28
Phase 2	Cell	9	\$38 242		\$161 882 * *	Jul 31
	Cell	10	\$38 242		\$161 882	Jan 34
	Cell	11	\$38 242		\$161 882	Aug 36
	Cell	12	\$38 242		\$161 882	Mar 39
	Cell	13	\$38 242		\$161 882	Sep-41
	Cell	14	\$38,242		\$161 882	Apr-44
	Cell	15	\$38 242		\$161 882	Nov 46
	Cell	16	\$38 242		\$161 882	Jun-49
	Cell	17	\$38 242		\$161 882	Dec 51
	Cell	18	\$38 242		\$161 882	Jul 54
	Cell	19	\$38 242		\$161 882	Feb-57
	Cell	20	\$38 242		\$161 882	Sep-59
	Cell	21	\$38 242		\$161 882	Mar 62
	Cell	22	\$38 242		\$161 882	Oct-64

Assumptions

Initial financial assurance required is \$ 54 069

Initial financial assurance required is the amount for closure of the first cell (10 acres) plus post closure costs for the first cell

** Post closure costs are contributed before each of the first 8 cells (Phase 1)

*** Post closure costs for Phase 1 and Phase 2 will be collected over the Phase 1 operational life (20 years)

Once post closure account is fully funded (at the end of Phase 1) post closure costs will remain constant throughout the rest of the landfill life

Note

Existing Financial Assurance SunTrust Letter of Credit \$179 000 see Appendix K

Appendix K

COPY

JPMorgan Chase Bank, N A
Trade Services
South Riverside Plaza
Mail Code H 1-0236
Chicago IL 60606-0236

JUL 15, 2009
OUR L/C NO TPTS-763244

BENEFICIARY
EXECUTIVE SECRETARY, SOLID AND HAZARDOUS WASTE CONTROL BOARD
OF THE STATE OF UTAH
PO BOX 144880
SALT LAKE CITY, UTAH 84114-4880

APPLICANT
CIRCLE FOUR FARMS
PO BOX 100
341 SOUTH MAIN
MILFORD, UTAH 84751

EXPIRY· JUNE 1, 2010
AT OUR COUNTERS

AMOUNT· USD179,000.00

WE HEREBY ISSUE OUR IRREVOCABLE STANDBY LETTER OF CREDIT NO TPTS-763244
IN YOUR FAVOR ON BEHALF OF CIRCLE FOUR FARMS, HEREINAFTER KNOWN AS THE
COMPANY, FOR A SUM OF USD179,000 00 (ONE HUNDRED SEVENTY NINE THOUSAND AND
00/100 UNITED STATES DOLLARS), AVAILABLE BY YOUR DRAFTS AT SIGHT DRAWN ON
US DRAFTS MUST BE MARKED 'DRAWN UNDER JPMORGAN CHASE BANK, N A ,
IRREVOCABLE STANDBY LETTER OF CREDIT NO TPTS-763244'

THIS IRREVOCABLE STANDBY LETTER OF CREDIT IS ISSUED TO PROVIDE FINANCIAL
ASSURANCE TO THE EXECUTIVE SECRETARY OF THE SOLID AND HAZARDOUS WASTE
CONTROL BOARD FOR THE COST OF CLOSURE, POST-CLOSURE MAINTENANCE AND
MONITORING, AND IF NECESSARY, CORRECTIVE ACTION PURSUANT TO UTAH CODE
ANNOTATED 19-6-108(9)(C) AND UTAH ADMINISTRATIVE CODE (UAC) R315-309-7,
FOR THE SOLID WASTE DISPOSAL FACILITY KNOWN AS

'CIRCLE FOUR FARMS LANDFILLS LOCATED IN IRON COUNTY, UTAH, FACILITY
BUSINESS OFFICE AT 341 SOUTH MAIN, MILFORD, UTAH 84751'

REQUESTS TO DRAW ON THIS IRREVOCABLE STANDBY LETTER OF CREDIT MUST BE
ACCOMPANIED BY THE FOLLOWING DOCUMENTS.

YOUR SIGNED STATEMENT AS FOLLOWS I, (EXECUTIVE SECRETARY), CERTIFY

COPY

JPMorgan Chase Bank, N.A.
Trade Services
100 North Riverside Plaza
Chicago, IL 60606-0236

JUL 15, 2009

OUR L/C NO TPTS-763244

THAT I HAVE ISSUED A NOTICE OF VIOLATION OR OTHER ORDER TO THE COMPANY INDICATING THAT THE COMPANY HAS FAILED TO COMPLY WITH THE CLOSURE, POST-CLOSURE MAINTENANCE AND MONITORING, OR CORRECTIVE ACTION REQUIREMENTS OF UAC R315-301 THROUGH 320

AND

2 A COPY OF THE NOTICE OF VIOLATION OR OTHER ORDER ISSUED TO THE COMPANY BY THE EXECUTIVE SECRETARY, OR

3 YOUR SIGNED STATEMENT AS FOLLOWS I, (EXECUTIVE SECRETARY), CERTIFY THAT THE COMPANY HAS FAILED TO PROVIDE THE EXECUTIVE SECRETARY WITH AN EXTENSION OF LETTER OF CREDIT NO TPTS-763244, OR WITH AN ACCEPTABLE REPLACEMENT IRREVOCABLE STANDBY LETTER OF CREDIT OR OTHER ACCEPTABLE FINANCIAL ASSURANCE WITHIN 90 DAYS OF RECEIPT OF THE NON-EXTENSION NOTICE BY THE ISSUING INSTITUTION

AND

4 YOUR SIGHT DRAFT, BEARING REFERENCE TO THIS IRREVOCABLE STANDBY LETTER OF CREDIT NO. TPTS-763244

PARTIAL DRAWINGS ARE PERMITTED THIS ORIGINAL IRREVOCABLE STANDBY LETTER OF CREDIT NO. TPTS-763244 MUST BE SUBMITTED TO US TOGETHER WITH ANY DRAWINGS HEREUNDER FOR OUR ENDORSEMENT OF ANY PAYMENTS EFFECTED BY US AND/OR CANCELLATION

THIS IRREVOCABLE STANDBY LETTER OF CREDIT IS EFFECTIVE AS OF JULY 15, 2009, AND SHALL EXPIRE ON JUNE 1, 2010, BUT SUCH EXPIRATION DATE SHALL BE AUTOMATICALLY EXTENDED, WITHOUT AMENDMENT, FOR ONE YEAR FROM THE EXPIRY DATE HEREOF, OR ANY FUTURE EXPIRATION DATE, UNLESS AT LEAST 120 DAYS PRIOR TO ANY EXPIRATION DATE WE NOTIFY YOU BY CERTIFIED MAIL, OR OVERNIGHT COURIER, RETURN RECEIPT REQUESTED, THAT WE ELECT NOT TO CONSIDER THIS LETTER OF CREDIT EXTENDED FOR ANY SUCH ADDITIONAL PERIOD IN THAT EVENT, YOU MAY DRAW HEREUNDER ON OR PRIOR TO THE THEN RELEVANT EXPIRATION DATE, UP TO THE FULL AMOUNT THEN AVAILABLE HEREUNDER, AGAINST YOUR SIGHT DRAFT(S) ON US, BEARING THE NUMBER OF THIS LETTER OF CREDIT

JPMorgan Chase Bank, N.A.
Trade Services
150 North Riverside Plaza
Suite 2000
Chicago, IL 60606-2236

JUL 15, 2009

OUR L/C NO TPTS-763244

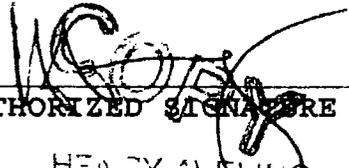
IN THE EVENT THE EXECUTIVE SECRETARY IS SO NOTIFIED, ANY UNUSED PORTION OF THE CREDIT SHALL BE AVAILABLE UPON PRESENTATION OF A SIGHT DRAFT FOR 120 DAYS AFTER THE DATE OF RECEIPT BY BOTH THE EXECUTIVE SECRETARY AS SHOWN ON THE SIGNED RETURN RECEIPTS

WHENEVER THIS IRREVOCABLE STANDBY LETTER OF CREDIT IS DRAWN ON UNDER AND IN COMPLIANCE WITH THE TERMS OF THIS LETTER OF CREDIT, WE SHALL DULY HONOR SUCH DRAFT UPON PRESENTATION TO US. WE SHALL DEPOSIT THE AMOUNT OF THE DRAFT DIRECTLY INTO A STANDBY TRUST OF THE CIRCLE FOUR FARMS IN ACCORDANCE WITH THE EXECUTIVE SECRETARY'S INSTRUCTIONS.

THE ISSUING INSTITUTION FURTHER WARRANTS THAT THIS IRREVOCABLE STANDBY LETTER OF CREDIT CONFORMS IN ALL RESPECTS WITH THE REQUIREMENTS UTAH ADMINISTRATIVE CODE R315-309, AS APPLICABLE AND AS SUCH REGULATIONS WERE INSTITUTED ON THE DATE SHOWN IMMEDIATELY BELOW IT IS AGREED THAT ANY PROVISION OF THIS IRREVOCABLE STANDBY LETTER OF CREDIT THAT IS INCONSISTENT WITH SUCH REGULATIONS IS HEREBY AMENDED TO ELIMINATE SUCH INCONSISTENCY

THIS LETTER OF CREDIT SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF UTAH, WITHOUT REGARD TO PRINCIPLES OF CONFLICT OF LAWS

EXCEPT AS OTHERWISE STATED HEREIN, THIS IRREVOCABLE LETTER OF CREDIT SHALL BE SUBJECT TO THE UNIFORM CUSTOMS AND PRACTICE FOR DOCUMENTARY CREDITS (2007 REVISION) INTERNATIONAL CHAMBER OF COMMERCE, PUBLICATION NO 600


AUTHORIZED SIGNATURE

HENRY AVELLINO
VICE PRESIDENT

Appendix L

Adjacent Property Owners	Iron County Account #	Mailing Address
Bureau of Land Management	N/A	Cedar City Field Office 176 East D L Sargent Drive Cedar City UT 84721
Robert Van Bree	E 1892 3	P O Box 42872 Tucson AZ 85733
Sure Holdings LLC	E-1892-4	2202 N Mam Street Ste 103 Cedar City UT 84721
Denver & Arliss Charleville Trustees	E-421	5409 F 27th St Long Beach CA 90815 1210
Jim & Arlene Bablyon Trust	E-419	HC 63 Box 87 Eufala OK 74432
College Park Baptist Church	E 419-1	2101 E Owens Ave North Las Vegas NV 89030 7270
Larry Carter	E 420 1	P O Box 39 Milford UT 84751



PO Box 100 Milford, UT 84751 (435) 387 2107 Fax (435) 387 2530

May 1, 2009

Larry Carter
P O Box 39
Milford, UT 84751

RE Circle Four Farms – Proposed Class IIIb Landfill in Iron County

To Whom this May Concern,

Circle Four Farms owns and operates several large hog farms in Beaver and Iron County. Circle Four Farms is in the process of applying for a permit (with the State of Utah Department of Environmental Quality Division of Solid and Hazardous Waste) to operate a Class IIIb landfill in northern Iron County near property you own.

State of Utah Solid Waste Rules, specifically Section R315-310-3(2)(u) have requirements to notify property owners within 1,000 feet of the proposed landfill that an application has been made to the Division of Solid and Hazardous Waste.

If you have any questions about the proposed landfill project or would like to discuss the project further, please contact me at the following telephone number (435) 387-6046.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Jim Webb', is written over a diagonal line that extends from the signature down to the typed name below.

Jim Webb

Circle Four Farms
Environmental and Public Affairs Manager



PO Box 100 Milford UT 84751 (435) 387 2107 Fax (435) 387 2530

May 1, 2009

Denver & Arliss Charleville
5409 F 27th St
Long Beach, CA 90815-1210

RE Circle Four Farms – Proposed Class IIIb Landfill in Iron County

To Whom this May Concern,

Circle Four Farms owns and operates several large hog farms in Beaver and Iron County. Circle Four Farms is in the process of applying for a permit (with the State of Utah Department of Environmental Quality Division of Solid and Hazardous Waste) to operate a Class IIIb landfill in northern Iron County near property you own.

State of Utah Solid Waste Rules, specifically Section R315-310-3(2)(ii) have requirements to notify property owners within 1,000 feet of the proposed landfill that an application has been made to the Division of Solid and Hazardous Waste.

If you have any questions about the proposed landfill project or would like to discuss the project further, please contact me at the following telephone number (435) 387-6046.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Jim Webb', is written over the typed name.

Jim Webb
Circle Four Farms
Environmental and Public Affairs Manager



PO Box 100 Milford, UT 84751 (435) 387 2107 Fax (435) 387-2530

May 1, 2009

Sure Holdings, LLC
2202 N Main Street Ste 103
Cedar City, UT 84721

RE Circle Four Farms – Proposed Class IIIb Landfill in Iron County

To Whom this May Concern,

Circle Four Farms owns and operates several large hog farms in Beaver and Iron County. Circle Four Farms is in the process of applying for a permit (with the State of Utah Department of Environmental Quality Division of Solid and Hazardous Waste) to operate a Class IIIb landfill in northern Iron County near property owned by Sure Holdings, LLC.

State of Utah Solid Waste Rules, specifically Section R315-310-3(2)(u) have requirements to notify property owners within 1,000 feet of the proposed landfill that an application has been made to the Division of Solid and Hazardous Waste.

If you have any questions about the proposed landfill project or would like to discuss the project further, please contact me at the following telephone number (435) 387-6046.

Respectfully submitted,

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Jim Webb
Circle Four Farms
Environmental and Public Affairs Manager



PO Box 100 Milford, UT 84751 • (435) 387 2107 Fax (435) 387 2530

May 1, 2009

Bureau of Land Management
Cedar City Field Office
176 East DL Sargent Drive
Cedar City, UT 84721

RE Circle Four Farms – Proposed Class IIIb Landfill in Iron County

To Whom this May Concern,

Circle Four Farms owns and operates several large hog farms in Beaver and Iron County. Circle Four Farms is in the process of applying for a permit (with the State of Utah Department of Environmental Quality Division of Solid and Hazardous Waste) to operate a Class IIIb landfill in northern Iron County near property owned by the BLM.

State of Utah Solid Waste Rules, specifically Section R315-310-3(2)(ii) have requirements to notify property owners within 1,000 feet of the proposed landfill that an application has been made to the Division of Solid and Hazardous Waste.

If you have any questions about the proposed landfill project or would like to discuss the project further, please contact me at the following telephone number (435) 387-6046.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Jim Webb', is written over a large, light-colored scribble or watermark.

Jim Webb
Circle Four Farms
Environmental and Public Affairs Manager



PO Box 100 Milford UT 84751 (435) 387 2107 Fax (435) 387 2530

May 1, 2009

College Park Baptist Church
2101 E Owens Ave
North Las Vegas, NV 89030-7270

RE Circle Four Farms – Proposed Class IIIb Landfill in Iron County

To Whom this May Concern,

Circle Four Farms owns and operates several large hog farms in Beaver and Iron County. Circle Four Farms is in the process of applying for a permit (with the State of Utah Department of Environmental Quality Division of Solid and Hazardous Waste) to operate a Class IIIb landfill in northern Iron County near property owned by the College Park Baptist Church.

State of Utah Solid Waste Rules, specifically Section R315-310-3(2)(n) have requirements to notify property owners within 1,000 feet of the proposed landfill that an application has been made to the Division of Solid and Hazardous Waste.

If you have any questions about the proposed landfill project or would like to discuss the project further, please contact me at the following telephone number (435) 387-6046.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Jun Webb', is written over a diagonal line that extends from the signature down to the typed name below.

Jun Webb
Circle Four Farms
Environmental and Public Affairs Manager



PO Box 100 • Millford, UT 84751 (435) 387 2107 • Fax (435) 387 2530

May 1, 2009

Jim and Arlene Bablyon Trust
HC 63 Box 87
Eufala OK 74432

RE Circle Four Farms – Proposed Class IIIb Landfill in Iron County

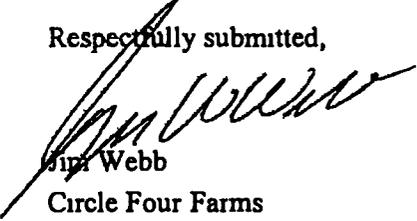
To Whom this May Concern,

Circle Four Farms owns and operates several large hog farms in Beaver and Iron County. Circle Four Farms is in the process of applying for a permit (with the State of Utah Department of Environmental Quality Division of Solid and Hazardous Waste) to operate a Class IIIb landfill in northern Iron County near property owned by the Bablyon Trust.

State of Utah Solid Waste Rules, specifically Section R315-310-3(2)(ii) have requirements to notify property owners within 1,000 feet of the proposed landfill that an application has been made to the Division of Solid and Hazardous Waste.

If you have any questions about the proposed landfill project or would like to discuss the project further, please contact me at the following telephone number (435) 387-6046.

Respectfully submitted,



Jim Webb

Circle Four Farms
Environmental and Public Affairs Manager



PO Box 100 Millford, UT 84751 (435) 387 2107 Fax (435) 387 2530

May 1, 2009

Mr Robert Van Bree
P O Box 42872
Tucson, AZ 85733

RE Circle Four Farms – Proposed Class IIIb Landfill in Iron County

Dear Mr Van Bree,

Circle Four Farms owns and operates several large hog farms in Beaver and Iron County. Circle Four Farms is in the process of applying for a permit (with the State of Utah Department of Environmental Quality Division of Solid and Hazardous Waste) to operate a Class IIIb landfill in northern Iron County near property you own.

State of Utah Solid Waste Rules, specifically Section R315-310-3(2)(ii) have requirements to notify property owners within 1,000 feet of the proposed landfill that an application has been made to the Division of Solid and Hazardous Waste.

If you have any questions about the proposed landfill project or would like to discuss the project further, please contact me at the following telephone number (435) 387-6046.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Jim Webb', written over a horizontal line.

Jim Webb
Circle Four Farms
Environmental and Public Affairs Manager