

ATTACHMENT B
POST-CLOSURE PLAN

ATTACHMENT B (Application SECTION 6)

POST-CLOSURE PLANS

INSPECTION PLAN

The following is a summary of a proposed site inspection plan, which is contained in the Post-Closure Inspection and Maintenance Plan (see Appendix B-1). In addition, the inspection plan for the soil vapor extraction (SVE) system is described in the Operation and Maintenance Manual for the SVE system (Attachment C). During the post-closure period, the UA staff will perform quarterly inspections of the site. Facility inspection report forms shall be completed during each site inspection and filed in the facility files at the UA Department of Risk Management Services. Site inspection will cover the following:

Access roads

- Erosion
- Vegetation growth

Perimeter Fencing, Gates, and Signage

- Damage
- Integrity of locks on all gates
- Integrity of metal gates on the culverts
- Digging around the fence base
- Presence and legibility of signs
- Presence of excessive vegetation around entrance gates

Final Cover

- Integrity
- Vegetative cover density/distressed vegetation
- Woody vegetation growth

Drainage Structures

- Erosion
- Debris
- Excessive vegetation

Groundwater Monitoring and Soil Vapor Enclosures

- Deterioration
- Vandalism

Groundwater Monitoring Well and Soil Vapor Pumps (to be inspected during sampling events)

- Proper functioning

Survey Monuments

- Damage
- Evidence of tempering

GROUNDWATER MONITORING PLAN

A Post-Closure Groundwater Detection Monitoring Plan is shown in Appendix G-2 and discussed in Attachment G of this application.

MAINTENANCE PLAN

The following is a summary of the proposed site maintenance plan, which is contained in the Post-Closure Inspection and Maintenance Plan (see Appendix B-1). During the post-closure period, site maintenance/repairs will be performed either by the UA staff or their subcontractors as soon as practicable after their discovery. Facility maintenance/repair report forms shall be completed for each maintenance/repair event and filed in the facility files at the UA Department of Risk Management Services. Site maintenance will include the following:

Access Roads

- Road damage repairs
- Mowing of access roads

Perimeter Fencing, Gates, and Signage

- Repairs
- Replacement of locks on gates
- Repair of metal gates on culverts
- Replacement of missing or unreadable signs
- Mowing of entrance gates

Final Cover

- Integrity damage repairs
- Reseeding of repaired or impacted areas
- Removal of any woody vegetation

Drainage Structures

- Maintenance of flow capability in culverts
- Repairing damaged slopes

Groundwater Monitoring Wells

- Repair or replacement of well covers and concrete bases
- Video logging of wells, if warranted by well conditions
- Replacement/repair of well pumps and any other equipment

Survey Monuments

- Re-establishment of damaged monuments.

POST-CLOSURE SECURITY

Security of the facility during the post-closure period is discussed in Attachment D of this application.

POST-CLOSURE CONTACT

Steven C. Holland, Assistant Vice President
Department of Risk Management Services
University of Arizona
12561 E. Sonoran Ridge Drive
Tucson, Arizona 85749
(520) 621-1790 (work)
(520) 349-4273 (cell)

NOTICES

Certification of Closure

The letter of Certification of Closure is included in Appendix B-2.

Survey Plat

Survey Plat is included as Figure B-1.

Notation in Deed

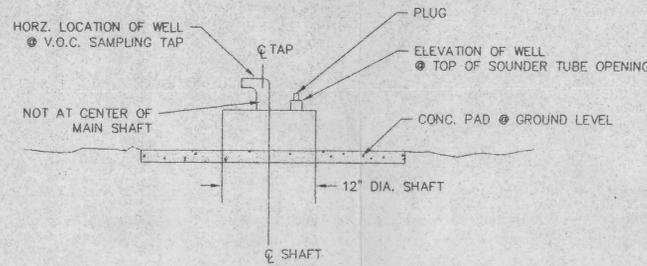
On March 9, 2012, an updated Post Closure Notice document containing the information required by 40CFR §264.119(b) was recorded with the Pinal County Recorder (Fee Number 2012-019244). This document includes a legal description and facility description of the PTRL, statements of property use restriction, the Owner's and Engineer's Certification of Closure from 1998, a previous closure notice recorded with the PTRL property deed in 1986, a survey plat showing the burial areas and permanent benchmarks, and an inventory of wastes buried at PTRL. The complete recorded document is included in Appendix B-3.

Also included in Appendix B-3 is a certification statement from the UA Authorized Official to the Director of ADEQ documenting that the required information has been properly recorded with the zoning authority for the property, which is Pinal County.

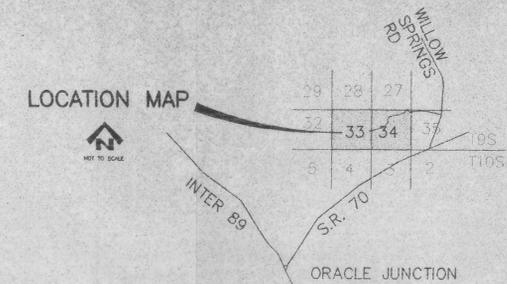
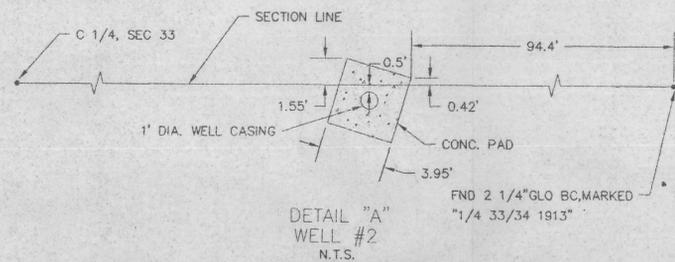
On May 27, 1986, the UA submitted to the Pinal County Zoning Director and the EPA Regional Administrator a notice recorded in the deed to the facility property, that burial activities had ceased and that the use of this land is restricted due to its use for hazardous waste disposal. However, it could not be verified that this notice was updated and submitted as a Post Closure Notice to the zoning authority and Regional Administrator following completion of closure construction. For this reason, the comprehensive document described above was recorded with the Pinal County Recorder's Office as zoning authority on March 9, 2012. A certification of this filing was submitted to the ADEQ Director on March 12, 2012. This action ensures that the presence of the landfill and the property use restriction is connected to the property deed for perpetuity, and available through a simple search to any future purchaser of the PTRL property.

If during the post-closure period the UA wishes to remove wastes from the landfill, then a modification to the permit will be requested. In accordance with the requirements of 40CFR §264 Subpart G, if all wastes are removed, then deed restrictions may be removed or modified at that time to indicate removal.

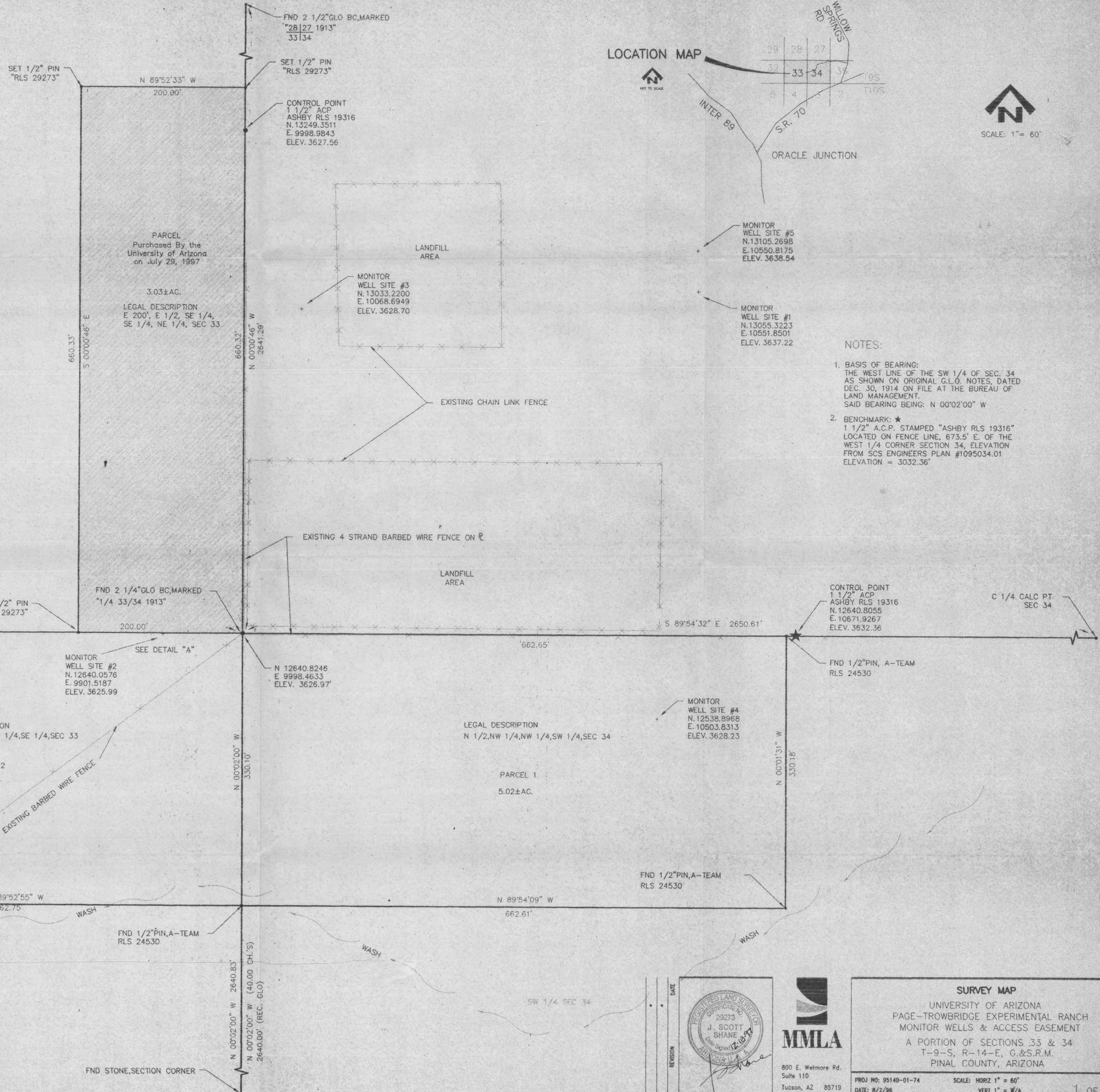
FIGURE B-1
MONITORING WELL LOCATION MAP



TYP. WELL DETAIL
 NOTE: ONLY EXCEPTION TO DETAIL WAS AT WELL #1 WHICH IS NO LONGER IN USE. SAMPLING TAP HAS BEEN REMOVED BUT LOCATION IS STILL AT CENTER OF SAMPLING TAP OPENING



SCALE: 1" = 60'



- NOTES:
1. BASIS OF BEARING: THE WEST LINE OF THE SW 1/4 OF SEC. 34 AS SHOWN ON ORIGINAL G.L.O. NOTES, DATED DEC. 30, 1914 ON FILE AT THE BUREAU OF LAND MANAGEMENT. SAID BEARING BEING: N 00°02'00" W
 2. BENCHMARK: ★ 1 1/2" A.C.P. STAMPED "ASHBY RLS 19316" LOCATED ON FENCE LINE, 673.5' E. OF THE WEST 1/4 CORNER SECTION 34, ELEVATION FROM SCS ENGINEERS PLAN #1095034.01 ELEVATION = 3032.36'

REVISION

DATE

NO.

800 E. Wetmore Rd.
Suite 110
Tucson, AZ 85719
Tel (520) 292-2300
Fax (520) 292-1290

SURVEY MAP

UNIVERSITY OF ARIZONA
PAGE-TROWBRIDGE EXPERIMENTAL RANCH
MONITOR WELLS & ACCESS EASEMENT
A PORTION OF SECTIONS 33 & 34
T-9-S, R-14-E, G.&S.R.M.
PINAL COUNTY, ARIZONA

PROJ NO: 95140-01-74 SCALE: HORIZ 1" = 60'
DATE: 8/2/96 VERT 1" = N/A

1 OF 1

Engineering • Planning • Environmental • Surveying • Water Resources

APPENDIX B-1

POST-CLOSURE INSPECTION AND MAINTENANCE PLAN

APPENDIX B-1 (Application APPENDIX D)

**POST-CLOSURE INSPECTION
AND MAINTENANCE PLAN**

**POST-CLOSURE INSPECTION
AND MAINTENANCE PLAN**

**PAGE-TROWBRIDGE RANCH LANDFILL
EPA I.D. AZD980665814**

Revised March 2012

INTRODUCTION

Regular inspections of the PTRL facility will be performed no less often than quarterly. Inspections will be conducted by UA staff members who have received training to perform work at PTRL in accordance with the Training Plan included as Attachment E. Findings of all inspections will be recorded on the written Inspection Report form included herein as Attachment D-1 (below). Any additional collected documentation such as photographs will be filed with the written Inspection Report. Maintenance and repair activities will be documented on the Maintenance/Repair Report form included as Attachment D-2 (below). Completed Inspection Reports and Maintenance/Repair Reports will be kept on file with UA Risk Management Services for the duration of the Post Closure Permit period.

SCOPE OF INSPECTION

Regular quarterly inspections will include all listed items on the written Inspection Report form shown in Attachment D-1 (below), with the exception of verifying operation of groundwater monitoring wells, which are described below.

GROUNDWATER MONITORING WELLS

Groundwater monitoring wells will be inspected for proper operation no less than twice annually, which will typically correspond with groundwater sample collection. In the event groundwater sample collection frequency changes, proper operation of the groundwater monitoring wells will be verified and documented no less than twice annually, approximately six months apart. Maintenance and/or repair of PTRL facility systems shall be performed, as specified in this plan, either by trained UA personnel or qualified vendors contracted for this purpose.

Preventive and corrective maintenance procedures, equipment procedures, equipment requirements, and materials needs and specifications will all be in accordance with the Project Manual for Final Cover Installation, Page-Trowbridge Ranch Landfill, Oracle Junction, Arizona, dated September 3, 1996 (prepared by SCS Engineers), and enclosed as Attachment D-3 (below).

ACCESS ROADS

UA-owned access roads leading to the facility and those inside the facility will be inspected for erosion and excessive vegetation growth. Significant road damage that may impede access to the facility for normal inspection, monitoring activities, or emergency response will be repaired prior to the next scheduled inspection.

PERIMETER FENCING AND SIGNS

The facility security fence, gates, and signs will be inspected for damage, integrity of the locks, digging under the fence base, the presence and legibility of signs, and the presence of excessive vegetation around entrance gates.

Identified deficiencies or repair needs will be corrected prior to the next scheduled inspection. Reasonable measures for preventing access to the site will be implemented while awaiting fence/gate repairs. Vegetation density will be controlled by trained UA personnel or qualified vendors contracted for this purpose. Missing or unreadable signs will be replaced in kind prior to the next scheduled inspection.

FINAL COVER

Final cover will be inspected for integrity, erosion, and woody vegetation growth. Final cover integrity damages will be repaired prior to the next scheduled inspection. Reseeding of the repaired areas or areas with impacted vegetation will be performed using the native vegetation specified in the closure specifications. Woody vegetation observed on the cover system during inspection will be treated to kill the plant, and marked with flagging for evaluation at the next scheduled inspection. Woody vegetation on the cover system that has not died at the time of the next scheduled inspection will be removed. Vegetation density/height on the cover system will be monitored and controlled as necessary by either trained UA personnel or a qualified contractor to facilitate visual inspection of the cover system surface. If the vegetative cover system deteriorates to a degree that it cannot prevent erosion as designed, consideration will be given to re-seeding or replenishment of vegetation as needed, consistent with the project manual for the original final cover installation.

DRAINAGE STRUCTURES

Drainage structures will be inspected for excessive erosion, debris, and vegetation. The integrity of metal gates on the culverts will also be inspected. Maintenance activities shall include keeping the channels and culverts clean and free of debris, and repairing excessively damaged slopes. Only excessive vegetation will be removed or trimmed. Needed correction action or repair will be performed prior to the next scheduled inspection.

SURVEY MONUMENTS

Survey monuments will be visually inspected for damage and evidence of tampering. Damaged monuments will be re-established as soon as practical by a licensed land surveyor.

GROUNDWATER MONITORING SYSTEM

Groundwater monitoring well enclosures will be inspected for deterioration and/or vandalism. Department of Water Resource well identify markings will be inspected for presence and legibility. Well covers, caps, and concrete bases will be repaired or replaced as required to maintain their proper operation. Submersible well pumps will be exercised and tested for proper operation at the time of groundwater sampling, but no less than twice annually whether samples are collected or not. Pump maintenance/replacement will be performed when the pumped flow rate falls below eight gallons/minute. Television logging of wells will be performed if warranted by well conditions. Should any of the existing monitoring wells be deemed unsuitable or unable to be repaired and restored to proper function during the Post Closure Permit period, UA will consult with ADEQ about strategies for replacement or alternate monitoring options, and submit a proposal for Permit modification as applicable.

Attachment D-1

INSPECTION REPORT

PAGE-TROWBRIDGE RANCH LANDFILL

EPA I.D. 980665814

Month/Day/Year of Inspection: _____ Time: _____

Inspector's Name/Title: (print) _____

Inspector's Signature: _____

Inspection Procedure:

To properly inspect the facility, the Inspector must walk around the perimeter, noting any specific evidence of deterioration. The Inspector must then enter and walk the length and width of the enclosed landfill area. All inspection items listed below and on the reverse of this form must be completed.

INSPECTION ITEMS	YES	NO
ACCESS ROADS		
1. Is the condition of UA-owned roads used to access the site and those within the facility adequate to allow access by emergency vehicles?		
2. Is there excessive vegetation on facility access roads?		
PERIMETER FENCING AND SIGNS		
1. Are the fences in good condition, free of fabric holes, downed fencing, bent poles, and digging under the fence base?		
2. Were all gates/locks closed upon arrival?		
2. Are all fence gates/locks operating properly?		
4. Is there excessive vegetation present around entrance gates?		
5. Are all signs legible?		
FINAL COVER		
1. Are there any signs of integrity problems with the Unit A and Unit B final covers?		
2. Is there any woody vegetation growth?		

3. Does vegetation density/height support inspection and maintenance activity?		
DRAINAGE STRUCTURES		
1. Are there any signs of drainage structure integrity problems?		
2. Are drainage structures at the site clear of any blockage from debris and/or excessive vegetation?		
3. Are metal gates intact and locked?		
SURVEY MONUMENTS		
1. Are survey monuments damaged?		
2. Are there any signs of survey monument tampering?		
GROUNDWATER MONITORING WELLS		
Are all monitoring well enclosures intact and secured?		
1. Is the concrete pad of each monitoring well intact and free of deterioration?		
3. Are groundwater samples being collected during this inspection?		
If YES , complete the following:		
4. Does each well pumping assembly operate properly?		
5. Are all sounding tubes clear?		

If groundwater samples are collected during this inspection, use Groundwater Sampling Log, which is included in the Groundwater Detection Monitoring Plan, to record all monitoring information.

Attachment D-2

MAINTENANCE/REPAIR REPORT

PAGE-TROWBRIDGE RANCH LANDFILL

EPA I.D. 980665814

Name/Title: (print) _____

Signature: _____

Instructions:

Describe below the nature of the inspection deficiency and the action taken to correct the item. If the item represents a deficiency noted during a previous that has not been corrected, explain the reason for the corrective action delay.

DEFICIENCY	ACTION TAKEN	DATE

Comments:

ATTACHMENT D-3

PAGE TROWBRIDGE RANCH LANDFILL (PTRL)
PROJECT MANUAL FOR FINAL COVER INSTALLATION

CONTENTS

	<u>PAGES</u>
DIVISION 1 - GENERAL REQUIREMENTS	
<i>DIVISION 1 NOT INCLUDED IN THIS ATTACHMENT</i>	
Section 01110	Summary of Work 10
Section 01120	Definitions and Abbreviations 9
Section 01130	Coordination and Meetings 3
Section 01200	Submittals 4
Section 01300	Construction Quality Assurance 2
Section 01400	Temporary Controls and Construction Facilities 10
Section 01500	Record Drawings 3
Section 01600	Project Closeout 6

DIVISION 2 - SITE WORK

Section 02110	Site Clearing 6
Section 02120	General Earthwork Excavation 2
Section 02210	Soil Processing 2
Section 02220	Watering 2
Section 02300	Placement of Final Cover System 8
Section 02400	Drainage Channels 3
Section 02610	Geogrid 5
Section 02620	Geonet 5
Section 02710	Site Fence 5
Section 02720	Site Reseeding 10

SECTION 02110
SITE CLEARING

PART 1 - GENERAL

1.01 SCOPE

DEMOLITION

- A. The scope of demolition Work shall include the complete removal of all above-grade and underground interferences with new construction or facilities. Demolition includes, but is not limited to, the following:
- Existing chain link fence, as shown on the Plans, shall be removed down to the existing grade. All existing fence post foundations construction shall be removed. Existing fence fabric, top rails, brace rails, stretcher bars, post tops, and 3-strand barbed wire located on Site A shall be salvaged and neatly stored in an area designated by the Owner. Similar material on Site B are to be removed by the Contractor.
 - Existing barbed wire fence, as shown on the Plans, shall be completely removed.
 - All PVC pipe within the limits of the disposal sites shall be completely removed. The remaining borehole shall be grouted with a cement grout plug that shall extend from 2 feet below the ground surface to the bottom of the well; the remaining well shall be backfilled with processed soil above the top of the cement grout plug to the original ground surface. The cement grout shall have an admixture of 3 percent bentonite by weight. The Contractor shall submit the cement grout mix design for approval.

- Galvanized steel pipe, within the limits of the disposal cells, shall be excavated to a depth of 18 inches below the existing ground surface and cut. The remaining well shall be grouted with a cement grout plug that shall extend from the new top of pipe to the bottom of the well. The hole shall then be backfilled with processed soil material. The cement grout shall have an admixture of 3 percent bentonite by weight. The Contractor shall submit the cement grout mix design for approval.

CLEARING AND GRUBBING

- A. The protected plant species under ARS Title 3, Chapter 7 from all disturbed areas shall be transplanted in the transplantation area as shown on Plans prior to any and all clearing and grubbing operations.
- B. The Scope of Work includes satisfactory clearing and grubbing of unsuitable vegetative growth, debris, and other deleterious material from the site. The limits of Work are the construction areas defined on the Plans, which include all areas receiving fill materials, on-site borrow area, on-site stockpiled clay material, all areas to be developed for roads and drainage channels, topsoil stockpile area, and staging area.
- C. The remaining clearing and grubbing shall consist of clearing the surface of the ground of the designated areas to a minimum of 6 inches of all brush, undergrowth, hedges, heavy growth of grass or weeds, structures (if any), debris, rubbish of any nature, natural obstructions (e.g., standing water); or such material which, in the opinion of the CQA Consultant, is unsuitable for berms or other required structures. Topsoil removed during the clearing and grubbing operation should be placed in the Topsoil Stockpile area for use in revegetation of disturbed areas during the completion of the project.

1.02 JOB CONDITION

- A. The site clearing operation shall be conducted to insure minimum interference with roads and other adjacent occupied or in-use facilities. The Contractor shall not close or obstruct roadways, walks, or other occupied or used facilities without permission from the Owner or Engineer.
- B. Provide protection necessary to prevent damage to existing improvements.
- C. The Contractor shall protect improvements on the Owner's property.
- D. The Contractor shall restore damaged improvements to their original condition, as accepted by the Engineer.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. All materials used in conjunction with this Work shall be considered incidental to the Work.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Areas requiring clearing and grubbing shall be staked on the ground by the Contractor. The clearing and grubbing shall be done prior to the start of the placement of the Final Cover System.
- B. All useable materials, as approved by the Engineer, removed by clearing and grubbing shall be utilized or shall be stockpiled in a designated area as designated by the Engineer.

PAGE IS BLANK

3.02 EXISTING STRUCTURES AND UTILITIES

- A. Any relocation, modification, removal, etc., of existing utilities and/or public improvements required by the proposed development will be at no expense to the Owner. Abandoned structures and utilities shall be removed by the Contractor.

3.03 CLEARING AND GRUBBING

- A. In areas requiring clearing and grubbing, all wet and soft soils and other unsatisfactory materials shall be removed.
- B. Rocks and other projections over 6 inches in diameter shall be grubbed out to a depth of at least 18 inches below the finished grade.
- C. All trees and shrubs outside of the clearing area which will not interfere with excavation or development of the facility or cause disintegration of the improvements shall not be disturbed. In any event, the Contractor shall avoid, as far as practicable, injury to shrubbery, plants, grasses, and other vegetation growing outside of the clearing limits.
- D. The protected plant species under ARS Title 3, Chapter 7 shall be transplanted in the transplantation area. The transplantation area is shown on the Plans.
- E. All holes remaining after the grubbing operation in excavation areas shall have the sides broken down to flatten out the slopes, and shall be filled with materials acceptable to the Engineer, moistened, and properly compacted in layers to the density required in Section 02120 "General Earthwork Excavation." The same construction procedures shall be applied to all holes remaining after grubbing in the excavation areas where the depth of holes exceeds the depth of the proposed excavation.

3.04 DISPOSAL OF WASTE MATERIAL

- A. All materials removed in the demolition operation and deemed unsuitable for reuse by the Owner shall be removed from the site. Waste materials shall be disposed of by the Contractor. Materials deemed suitable for reuse by the Owner, shall be stored in a manner to protect the materials from damage.
- B. Contractor shall dispose of all waste materials other than soil resulting from clearing and grubbing at an approved waste disposal facility. The name, address, owner of the facility, and waste acceptance requirements shall be submitted by the Contractor and approved by the Owner prior to any waste disposal activities. Copies of all disposal records shall be submitted to the Engineer in accordance with the Submittals Section.
- C. Temporary stockpiles of excess material shall be located in top soil storage area as shown on the Plans or as directed by the Engineer.

END OF SECTION

SECTION 02120
GENERAL EARTHWORK EXCAVATION

PART 1 - GENERAL

1.01 SCOPE

- A. This item shall consist of the excavation of the borrow area and staging of borrow soils for earthwork related to the Final Cover System, and surface drainage channels. All Work shall be performed in accordance with these Contract Documents, the Specifications, and the CQA/CQC Plan (Part IV), in conformity with the dimensions and typical sections shown on the Plans, and in conformity with the lines and grades shown on the Plans. Existing grades, depicted on the Plans, may have changed and will be verified prior to Contractor excavation activities to establish a baseline for the Work.

- B. All excavated materials shall remain on-site and be used (if suitable) for the installation of the final cover system.

- C. Selection and placement of borrow area soils into the staging area shall be the responsibility of the Contractor. The Contractor shall familiarize himself with the soil materials and performance standards required for the placement of the Final Cover System. The Engineer reserves the right to approve all materials selection and stockpiling.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Materials used in conjunction with this Work shall be furnished by the Contractor or derived from the excavations, and will be considered incidental to the Work items.

PART 3 - EXECUTION

3.01 EXCAVATION

- Does not refer to Excavate for plan*
- A. Excavation in the borrow area and for the drainage channel shall be performed to obtain approximately 25,000 CY of borrow soils. No excavation shall begin until the Engineer has approved construction staking for the proposed Work. All materials excavated shall be placed in the staging area as determined by the Work Plan for the construction of the Final Cover System submitted by the Contractor. During excavation, grades shall be maintained to provide drainage of any surface water that may affect the Work. The Contractor shall not excavate any materials from the borrow area within 20 feet of the access road along the north side. The completion of the excavation shall be sloped and graded to accommodate livestock access to the entire area within the borrow area.
- B. The Contractor shall be responsible for proper drainage of stormwater and for stormwater control during construction at no additional cost to the Owner.
- C. Changes to design excavation grades proposed by the Contractor for the purpose of reducing haul will not be allowed.
- D. Tolerances for the Drainage Channel excavation shall be as follows:
1. Slopes: Line \pm 0.5 foot
 Grade \pm 0.1 foot
 2. Base: Line \pm 0.1 foot
 Grade \pm 0.1 foot

3.03 SUBGRADE RECONSTRUCTION

- A. General: The Contractor may be required to reconstruct subgrade in areas where over-excavations are determined necessary by the Engineer.

END OF SECTION

SECTION 02210
SOIL PROCESSING

PART 1 - GENERAL

1.01 SCOPE

- A. The soils excavated from the borrow area will be mixed with the existing stockpiled clay material. It is estimated that the mix ratio will be about 1 part clay soil to 2 parts borrow soil. The Contractor is responsible for verifying the required mix ratio to insure that all the clay material is used in the construction and that it is uniformly dispersed in the Final Cover System.

- B. Mixing of the soils shall be performed in the staging area. The staging area should be located as shown on the Plans. The Contractor may adjust the size or location of the staging area with approval from Engineer.

- C. Unsuitable Material: Topsoil, peat, organic soils, sand, organic debris or soil with other than required physical properties as determined by the CQA Consultant.

PART 2 - PRODUCTS

2.01 PROCESSED SOILS

- A. The material shall be relatively free of organics (less than 3 percent by volume).

- B. Material shall be processed such that it does not contain particles greater than 2 inches in the largest dimension as required by the Engineer. The coarse fraction of the material shall be removed.

PART 3 - EXECUTION

3.01 EQUIPMENT

- A. The necessary equipment should be specified in the Work Plan for construction of the Final Cover System and utilized to achieve:
- A uniform and consistent mixing of borrow area soils with the existing stockpiled clay.
 - Screening of soils to remove coarser fraction larger than 2 inches.
 - Pulverization of any clay clods present in the soils.
 - Moisture addition as required to meet performance specifications for the Final Cover System.

END OF SECTION

SECTION 02220

WATERING

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. This Work shall consist of furnishing and applying water required (a) for the compaction and preparation of grades, (b) for the alleviation or prevention of dust nuisance, and (c) for any other use which is deemed necessary by the CQA Consultant. The Contractor shall be responsible to supply water for construction activities.
- B. Water for construction shall be obtained from the local water company and transported to the site as required. The Contractor shall be responsible for obtaining all necessary permits and all costs associated with supplying water for the project.
- C. All costs shall be paid by the Contractor.
- D. Provide backflow prevention devices as required by the water supplier.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Water used in the Work shall be free of silts and other materials deleterious to the quality of the material to which it is applied or with which is mixed.

PART 3 - EXECUTION

3.01 EQUIPMENT

- A. Watering shall be by means of tank trucks or water wagons equipped with spray bars, by hose and nozzle, or by other means, any and all of which shall insure uniform and controlled application.

END OF SECTION

SECTION 02300
PLACEMENT OF FINAL COVER SYSTEM

PART 1 - GENERAL

The PTRL was developed through construction of individual 10-foot by 10-foot by 10-foot-deep disposal cells, separated by native soils, thereby creating a "waffle-like" configuration. These cells were developed in a layered manner by placing a level of containerized waste, capping the waste with a layer of plywood sheets, cardboard, and/or 2 feet of soil, then repeating this process until approximately 6 feet of fill depth was achieved. Native soil was then placed to the current landfill grades.

The landfill facility includes an approximate 2.3-acre fenced enclosure, designated as Site B, in the southwest corner of the Page-Trowbridge Ranch, and a separate, approximately 0.9-acre fenced area, designated as Site A. Site A received hazardous in sealed 55-gallon drums (DOT 17C) which were never opened at the site. Site B was used as open neutralization pit and a burn pit prior to being used for direct burial of 1- and 5-gallon containers, as well as 55-gallon drums. Site B received some radioactive waste.

1.01 SCOPE

- A. The Work specified here includes preparation of subgrade and placement of soil components of the final cover system.
- B. The surface to receive compacted fill shall be processed. The processing will include, but not limited to, scarification and compaction. The Contractor shall specify all methods in the Work Plan for construction of the Final Cover System.

- C. The final cover system contains geosynthetic materials, and three (3) general soil layers (from bottom to top):
- Foundation Layer (24 inches);
 - Soil Infiltration Barrier (24 inches); and
 - Vegetative Layer (24 inches).
- D. The processed soil (i.e., borrow area soils mixed with existing stockpiled clay) shall be utilized for all the soil layers of the final cover system.
- E. The Contractor shall notify the CQA Consultant as to the source of any imported material, if required, and shall make arrangements for sampling and approval of those materials prior to the placement of the material.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. The subgrade to receive backfill materials shall be prepared as follows:
- As specified in the Work Plan for construction of the Final Cover System.
 - Moisture-conditioning.
 - Compacted to a minimum of 95 percent of the ASTM D698 density in the top 12-inches.
 - Moisture content - within ± 2 percent of its optimum moisture content.

B. The soil layers of the final cover system shall meet the following properties specified herein:

- Saturated hydraulic conductivity - 1.0×10^{-4} cm/sec (minimum), tested in accordance with ASTM D5084;
- Compaction - At least 95 percent of maximum dry density, tested in accordance with ASTM D698; and
- Moisture content - within ± 2 percent of its optimum moisture content.

2.02 SUBMITTALS

The Contractor shall submit the following:

- A. Subgrade Preparation Plan (part of the Work Plan for Construction of the Final Cover System), including provisions for a method to detect areas which could potentially cause settlement, correction of settlement, and the methods proposed for subgrade preparation to meet the specified performance standards.
- B. Means of placement of the geogrid and geonet to prevent movement during the installation process.
- C. Type of equipment and process that will be used to meet the specified performance standards for compaction and soil permeability for the Final Cover System.
- D. Method of providing bonding between the individual compacted lifts within the Final Cover System.

PART 3 - EXECUTION

3.01 SUBGRADE PREPARATION

- A. During subgrade preparation, visual observations will be made by the Contractor and Engineer to ensure that all soft, organic, and otherwise unsuitable materials are removed.
- B. Any soft areas or areas with cracks or voids will be recompacted to specified density.
- C. Any areas where subsidence or subsurface slump occurs, the resulting cavity will be backfilled with native material or the processed soils and recompacted to specified density and moisture. This will be measured and paid for under excess backfill.

3.02 FILL PLACEMENT AND COMPACTION

- A. Place fill materials in continuous layers. The compacted thickness should not exceed 6 inches for material compacted by compaction equipment, and not more than 3 inches in compacted thickness for material compacted by hand-operated tampers.
- B. Maintain the moisture content of the backfill material within its specified optimum moisture content to aid in achieving compaction density. The fill material may have to be moistened or aerated until the material has the required moisture content to obtain the relative density.

- C. The Contractor shall compact each lift to the required percentage of maximum dry density for each area classified below:

<u>Material</u>	<u>Percent Standard Proctor Compaction</u>
Foundation Layer	95 minimum
Infiltration Barrier Layer	95 minimum
Vegetative Layer	95 minimum

Compaction of fills and backfills with low expansive potentials shall be accomplished to a uniform moisture content within ± 2 percent of its optimum moisture content.

- D. Each trip of the roller shall be offset from the path of the previous trip, so that the total compaction effort shall be evenly distributed over the entire area.
- E. The Contractor shall not place fill material on surfaces that are muddy, soft, frozen, saturated, or contain ice or frost.
- F. Surplus materials shall be removed from the site as directed by the Owner.
- G. Upon completion of all the construction activities, regrade all areas disturbed by storage, hauling, and construction operations to provide drainage and prevent ponding.

3.03 FIELD QUALITY ASSURANCE

- A. The CQA Monitor shall perform the testing of the engineered fill to verify compliance with the Specifications. Each test report shall be sealed by the soil testing company.

- B. The in-place dry density of the compacted materials shall be determined either with a nuclear density gauge (ASTM D 2922), or with sand cone apparatus (ASTM D1556). The in-place moisture content of the compacted material shall be determined with a nuclear gauge (ASTM D 3017) in combination with oven-dried field measurement of moisture content (ASTM D 2216). If the nuclear gauge is selected for the field measurements of both the density and moisture content, the nuclear gauge shall be calibrated against a sand cone test at least once a day. The calibration sample should be obtained from the same hole or at a point directly adjacent from each other. After the gauge reading is taken, a sand cone test (including measurement for moisture) will be conducted on the same volume measured by the gauge. The average of the ratio of the sand cone test to the gauge reading for a series of tests then become the correction factor to be applied to the gauge readings.
- C. The field CQA tests for processed soil, subgrade, foundation layer, infiltration barrier, and vegetative layer shall be performed in accordance with the following frequency:

Processed Soil Properties

- Moisture
 1. 1 per 2,500 cubic yard of soil material.
 2. Using ASTM D2216 or ASTM D3017.
- Compacted soil density
 1. 1 per 5,000 cu. yd of soil material.
 2. Using ASTM D698.

- Particle size distribution
 1. 1 per 15,000 cu. yd. of soil material
 2. Using ASTM C136 and C117.

Subgrade

- Moisture
 1. 1 per 8,000 sq. ft.
 2. Using ASTM D2216 or ASTM D3017
- Field Density
 1. 1 per 8,000 sq. ft.
 2. Using ASTM D1556 or ASTM D 2922

In-Place

- Field density
 1. 1 per 10,000 sq. ft of surface area per lift.
 2. Using ASTM D2922.
- Moisture content
 1. 1 per 10,000 sq. ft of surface area per lift.
 2. Using ASTM D3017.

- Saturated hydraulic conductivity (laboratory permeability)
 1. 1 per 100,000 sq. ft of surface area per lift.
 2. Using ASTM D5084.

Calibration

- Calibrate nuclear gauge at least once a day for density and moisture using ASTM D1556 and ASTM D2216.
- D. If tests indicate that the required performance standards are not achieved, the CQA Consultant shall immediately notify the Contractor. The Contractor shall prepare a Work Plan which shall be reviewed by the CQA Consultant prior to implementing the corrective action. All costs for retesting or reworking the defective area shall be the responsibility of the Contractor. Subsequent failure of retests shall require that the Contractor remove the fill and replace with suitable materials. All additional costs are the responsibility of the Contractor.

END OF SECTION

SECTION 02400
DRAINAGE CHANNELS

PART 1 - GENERAL

1.01 SCOPE

- A. The Work specified in this Section shall include earthwork for drainage channels, installation of corrugated metal pipe arch culverts, and placement of riprap in areas shown on the Plans.

1.02 SUBMITTALS

- A. The Contractor shall submit data regarding gradation and quality of riprap materials and apparent specific gravity, adsorption, and durability of rock, as applicable.
- B. The Contractor shall submit manufacturer technical specification for corrugated metal arch pipe culverts in accordance with AASHTO M36 and AASHTO M213.

PART 2 - PRODUCTS

2.01 DRAINAGE CHANNEL

- A. For drainage channel bottom and sideslope surfaces:
 - 1. Quality: Free from vegetable matter and all deleterious substances; no rocks or lumps greater than 6 inches in the largest dimension.

2.02 CORRUGATED STEEL ARCH PIPE CULVERTS

- A. The culverts should be manufactured with 0.064 inches thick steel and have a span of 35 inches and a rise of 24 inches.
- B. The culvert corrugations should have a pitch of 2-2/3 inches and a depth of 1/2 inches.

2.03 RIPRAP

- A. Grading: As provided in Plans.
- B. Quality: The rock shall be durable and shall not contain any water or other common fluid (encountered at the service environment) nor any soluble minerals.
- C. The mean diameter of the rock shall be between 6 and 8 inches.

PART 3 - EXECUTION

3.01 DRAINAGE CHANNEL

- A. The Contractor shall cut the drainage channel and provide a minimum of 10 (horizontal): 1 (vertical) side slopes.
- B. The drainage channel location and other relevant details are shown on Plans.

3.02 CORRUGATED METAL PIPE ARCH CULVERTS

- A. The backfill around the culverts should be compacted to a minimum of 95 percent of Standard Proctor, in accordance with the ASTM D698.

B. The culvert locations and other pertinent details are shown on the Plans.

3.03 RIPRAP

A. The riprap location and other pertinent details are shown on the Plans.

END OF SECTION

SECTION 02610

GEOGRID

(REV 04/14/97)

PART 1 - GENERAL

1.01 SCOPE

- A. All materials shall conform to the following requirements and shall be of new stock of the highest grade available, free from defects and imperfections, of recent manufacture, and unused.

1.02 SUBMITTALS

The following information shall be submitted by the Geosynthetics Supplier/Installer for the materials and installation of the geogrid. Reference within the Specifications to Manufacturer or independent CQA Consultant does not release the Installer from the responsibility for all materials and installation. The Owner and CQA Consultant shall not be responsible for coordinating transfer of information, scheduling, or any other activities performed by Subcontractors. Submittals to the CQA Consultant shall include:

- A. Laboratory data for the raw materials used in the manufacture of the geogrid and properties of the geogrid. This information shall be submitted before the shipping of the material.
- B. The Installer shall submit the results of laboratory analyses performed on the samples of geogrid prior to delivering to the Project site for installation. The laboratory analyses shall be performed by an accredited independent laboratory. ~~The laboratory analyses for each sample shall be as specified in the MCA's Submittal Plan or the CQA's QC Plan.~~ Sampling frequency shall be: one sample for every 10,000 square feet of geogrid delivered. If the Manufacturer of the geogrid wishes, the results of laboratory analyses performed during the manufacturing of the products

may be submitted for review, provided that the tests and sampling has been completed without bias by an independent laboratory.

- C. An Installation Plan as submitted by the geogrid supplier: The Installation Plan shall include a Construction Quality Assurance/Quality Control (CQA/CQC) Plan, lap requirements, methods and materials for securing the geogrid during placement, panel layout Plan, methodology to be employed for falling tests, copies of all forms to be used to record installation quality assurance/quality control data, résumés of key personnel, copies of the warranties to be provided at the completion of installation, and other applicable information. All installation shall be in conformance with current industry standards. The Installation Plan shall be submitted for approval at least 20 days prior to delivery of the geogrid materials to the site. The CQA Consultant reserves the right to require changes to the Installer's Installation Plan.
- D. Warranties from the Manufacturer and Installer: The Supplier/Installer shall provide warranty of the geogrid materials against physical defects for a period of 20 years. The installation warranty shall be for a period of 5 years. Warranties provided by the Manufacturer for materials and installation in no way release the Installer from responsibility for the materials and installation.
- E. Certification by the Supplier/Installer that the geogrid materials and installation is in accordance with the approved Installation Plan and other applicable Contract Documents.

PART 2 - PRODUCTS

2.01 HIGH DENSITY POLYETHYLENE (HDPE) GEOGRID

- A. The geogrid shall be comprised of HDPE material manufactured of new, first-quality products designed and manufactured. Geogrid materials shall be manufactured by TENSAR, or its approved equal.
- B. The HDPE geogrid materials and installation shall conform to the physical properties requirements shown in the table below.

PHYSICAL PROPERTY	MINIMUM TEST RESULTS	TEST METHOD
<i>deleted</i> Creep Limited Strength, at 10% Strain, lb/ft	2,900	GRI GG3-87 or ASTM D5252
<i>deleted</i> Tensile Strength, at 5% Strain, lb/ft	3,580	GRI GG1-87
Tensile Strength, at ultimate, lb/ft	6,550	GRI GG1-87
Tensile Modulus, lb/ft	<i>deleted</i>	GRI GG1-87
Junction Strength, lb/ft	5,900	GRI GG2-87
Junction Efficiency, %	90	GRI GG2-87
High Density Polyethylene, %	97	ASTM D1248
Carbon Black, %	2.0	ASTM D4218

PART 3 - EXECUTION

3.01 SUBGRADE PREPARATION

- A. Surfaces below the geogrid shall be smooth and free of all rocks, stones, sticks, roots, sharp objects, or debris of any kind. The surface shall provide a firm, unyielding foundation for the geogrid with no sudden, sharp, or abrupt changes or breaks in grade. No standing water or

excessive moisture shall be allowed. The Installer shall certify in writing that the surface on which the geogrid is to be installed is acceptable before commencing Work.

3.02 DELIVERY, STORAGE, AND HANDLING

- A. Each roll shall be delivered to the site bearing markings which provide the roll and Manufacturer's lot number; thickness of the material; and the length and width of the material.
- B. Within the installation report, the CQA Consultant shall correlate the identification numbers for each roll of material to the installation panel location.

3.03 GEOGRID INSTALLATION

- A. The Geosynthetic Installer will provide an Installation Plan and handle all geogrids as to minimize damage to geogrids.
- B. Geogrid installation shall be in accordance with the approved Installation Plan, and in accordance with the Plans.
- C. In presence of wind, all geogrid deployed will be weighed with sandbags or the equivalent. These sandbags will be installed during placement and will remain until replaced with cover material.
- D. The Geosynthetic Installer will take all necessary precautions to prevent damage to the underlying layers during placement of the geogrid.
- E. The two layers of the geogrid shall be placed orthogonal to each other, and separated by 12 inches of Foundation Layer soil.

F. Placement of Soil Materials - The Contractor will place all soil materials on top of the geogrid in such a manner so as to minimize:

- Creep of the geogrid;
- Damage to the geogrid; and
- Excess tensile stresses in the geogrid.

G. Overlaps and Seams:

- The roll end overlap shall be 18 feet minimum and anchoring length shall be at least 18 feet; and
- The rolls shall be overlapped at least 12 inches and tied with plastic ties, if necessary.

H. Repairs - Holes or tears in the geogrid will be repaired by placing a patch extending 10 feet beyond the edges of the hole and tear. The patch will be secured to the original geogrid tying every 6 inches.

3.04 FIELD QUALITY CONTROL

A. All geogrid placement shall be inspected by the CCA Consultant as required, who will direct the Installer to provide geogrid samples for conformance testing in compliance with the Specifications. The sampling frequency shall consist of one sample per lot or 100,000 square feet, whichever is the greater frequency.

1. Each sample shall be tested for those parameters and physical properties as specified for field quality control samples in the COA/QC Plan.

END OF SECTION

SECTION 02610

GEOGRID

PART 1 - GENERAL

1.01 SCOPE

- A. All materials shall conform to the following requirements and shall be of new stock of the highest grade available, free from defects and imperfections, of recent manufacture, and unused.

1.02 SUBMITTALS

The following information shall be submitted by the Geosynthetics Supplier/Installer for the materials and installation of the geogrid. Reference within the Specifications to Manufacturer or independent CQA Consultant does not release the Installer from the responsibility for all materials and installation. The Owner and CQA Consultant shall not be responsible for coordinating transfer of information, scheduling, or any other activities performed by Subcontractors. Submittals to the CQA Consultant shall include:

- A. Laboratory data for the raw materials used in the manufacture of the geogrid and properties of the geogrid. This information shall be submitted before the shipping of the material.
- B. The Installer shall submit the results of laboratory analyses performed on the samples of geogrid prior to delivering to the Project site for installation. The laboratory analyses shall be performed by an accredited independent laboratory. Sampling frequency shall be: one sample for every 10,000 square feet of geogrid delivered. If the Manufacturer of the geogrid wishes, the results of laboratory analysis performed during the manufacturing of the products may be submitted for review, provided

that the tests and sampling has been completed without bias by an independent laboratory.

- C. An Installation Plan as submitted by the geogrid supplier: The Installation Plan shall include a Construction Quality Assurance/Quality Control (CQA/CQC) Plan, lap requirements, methods and materials for securing the geogrid during placement, panel layout Plan, methodology to be employed for failing tests, copies of all forms to be used to record installation quality assurance/quality control data, résumés of key personnel, copies of the warranties to be provided at the completion of installation, and other applicable information. All installation shall be in conformance with current industry standards. The Installation Plan shall be submitted for approval at least 20 days prior to delivery of the geogrid materials to the site. The CQA Consultant reserves the right to require changes to the Installer's Installation Plan.
- D. Warranties from the Manufacturer and Installer: The Supplier/Installer shall provide warranty of the geogrid materials against physical defects for a period of 20 years. The installation warranty shall be for a period of 5 years. Warranties provided by the Manufacturer for materials and installation in no way release the Installer from responsibility for the materials and installation.
- E. Certification by the Supplier/Installer that the geogrid materials and installation is in accordance with the approved Installation Plan and other applicable Contract Documents.

PART 2 - PRODUCTS

2.01 HIGH DENSITY POLYETHYLENE (HDPE) GEOGRID

- A. The geogrid shall be comprised of HDPE material manufactured of new, first-quality products designed and manufactured. Geogrid materials shall be manufactured by TENSAR, or its approved equal.
- B. The HDPE geogrid materials and installation shall conform to the physical properties requirements shown in the table below.

PHYSICAL PROPERTY	MINIMUM TEST RESULTS <i>(Tensar Specs)</i>	TEST METHOD
Open Area, %	68 (nominal)	COE Method <i>58-62</i>
Creep Limited Strength, at 10% Strain, lb/ft <i>13 no test</i>	2,900	GRI GG3-87 or ASTM D5262
Flexural Rigidity, mg-cm	5,100,000	ASTM D1388-84 <i>2.4-2.30</i>
Tensile Strength, at 5% Strain, lb/ft	3,580	GRI GG1-87 <i>3.8 8.5</i>
Tensile Strength, at ultimate, lb/ft	6,550	GRI GG1-87 <i>3.8 8.5</i>
Tensile Modulus, lb/ft <i>200 9.5</i>	95,000	GRI GG1-87 <i>4.1 1.1</i>
Junction Strength, lb/ft	5,900	GRI GG2-87
Junction Efficiency, %	90	GRI GG2-87
High Density Polyethylene, %	97	ASTM D1248
Carbon Black, %	2.0	ASTM D4218

Geophysical Research Institute

PART 3 - EXECUTION

3.01 SUBGRADE PREPARATION

- A. Surfaces below the geogrid shall be smooth and free of all rocks, stones, sticks, roots, sharp objects, or debris of any kind. The surface shall provide a firm, unyielding foundation for the geogrid with no sudden, sharp, or abrupt changes or breaks in grade. No standing water or

excessive moisture shall be allowed. The Installer shall certify in writing that the surface on which the geogrid is to be installed is acceptable before commencing Work.

3.02 DELIVERY, STORAGE, AND HANDLING

- A. Each roll shall be delivered to the site bearing markings which provide the roll and Manufacturer's lot number; thickness of the material; and the length and width of the material.
- B. Within the installation report, the CQA Consultant shall correlate the identification numbers for each roll of material to the installation panel location.

3.03 GEOGRID INSTALLATION

- A. The Geosynthetic Installer will provide an Installation Plan and handle all geogrids as to minimize damage to geogrids.
- B. Geogrid installation shall be in accordance with the approved Installation Plan, and in accordance with the Plans.
- C. In presence of wind, all geogrid deployed will be weighed with sandbags or the equivalent. These sandbags will be installed during placement and will remain until replaced with cover material.
- D. The Geosynthetic Installer will take all necessary precautions to prevent damage to the underlying layers during placement of the geogrid.
- E. The two layers of the geogrid shall be placed orthogonal to each other, and separated by 12 inches of Foundation Layer soil.

F. Placement of Soil Materials - The Contractor will place all soil materials on top of the geogrid in such a manner so as to minimize:

- Creep of the geogrid;
- Damage to the geogrid; and
- Excess tensile stresses in the geogrid.

G. Overlaps and Seams:

- The roll end overlap shall be 18 feet minimum and anchoring length shall be at least 18 feet; and
- The rolls shall be overlapped at least 12 inches and tied with plastic ties, if necessary.

H. Repairs - Holes or tears in the geogrid will be repaired by placing a patch extending 10 feet beyond the edges of the hole and tear. The patch will be secured to the original geogrid tying every 6 inches.

3.04 FIELD QUALITY CONTROL

A. All geogrid placement shall be inspected by the CQA Consultant as required, who will direct the Installer to provide geogrid samples for conformance testing in compliance with the Specifications. The sampling frequency shall consist of one sample per lot or 100,000 square feet, whichever is the greater frequency.

1. Each sample shall be tested for those parameters physical properties found in Part 2.01, Subpart B.

END OF SECTION

SECTION 02620

GEONET

PART 1 - GENERAL

1.01 SCOPE

- A. The Work specified here includes supplying materials, equipment, labor, and service to install geonet. The geonet will serve purposes of biotic barrier and soil reinforcing. This section is applicable to geonets made of high density polyethylene.
- B. The placement and installation of the geonet shall be in accordance with the specifications listed here and in the Project Plans.

1.02 SUBMITTALS

- A. The installer shall submit Manufacturer's certifications, product data, installation procedures, and CQA sample results to the CQA Consultant prior to installation for CQA Consultant review and approval.

1.03 QUALITY ASSURANCE

- A. The Installer shall notify the Owner and the CQA Consultant prior to the Work, and during the deployment and at the completion of the geonet installation. The Installer shall also allow and cooperate with the CQA Consultant to inspect the material, installation, collect samples (when necessary), and determine compliance with the Specifications.
- B. The Installer shall submit the results of laboratory analyses performed on the samples of geonet prior to delivering to the Project site for installation. The laboratory analyses shall be performed by an accredited independent laboratory. Sampling frequency shall be: one sample for

every 10,000 square feet of geonet delivered. If the Manufacturer of the geonet wishes, the results of laboratory analysis performed during the manufacturing of the products may be submitted for review, provided that the tests and sampling has been completed without bias by an independent laboratory.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. All geonet shall be a high density polyethylene (HDPE) plastic. The HDPE materials shall be manufactured from virgin, first-quality domestic polyethylene resin. Reprocessed material shall not be used. Additionally, the geonet shall comply with the physical properties provided in the Subpart B below.
- B. The geonet shall conform to the minimum physical properties, as determined by the indicator test methods:

PHYSICAL PROPERTY	MINIMUM TEST RESULTS	TEST METHOD
Polymer Density, g/cm ³	0.937 ± 0.002 (range)	ASTM D-1505
Polymer Melt Index, g/10 min	1.0 (maximum)	ASTM D-1238
Carbon Black Content, %	2 - 3 (range)	ASTM D-1603
Nominal Thickness, inches	0.200 ± 0.022 (range)	ASTM D-1777
Tensile Strength Machine Direction, lbs/in	50 ± 10	ASTM D-1682

- C. All geonet rolls shall be furnished with suitable wrapping for protection against moisture and extended ultraviolet exposure prior to placement. Each roll received at the Project site shall be labeled to provide identification for quality control and shall be stored in a manner which protects them from the elements.

PART 3 - EXECUTION

3.01 PLACEMENT AND HANDLING

- A. Installer shall unload, store, and handle all geonet in accordance with the Manufacturer's guidelines. All damaged or torn or otherwise unusable geonet shall be removed at the responsible party's expense.
- B. The geonet shall be placed in a manner and at location shown on the Plans. The receiving surface shall be smooth, clean, and free of depressions or perturbations.
- C. The geonet rolls should be protected against dust and dirt during shipment and storage. The geonet rolls shall be delivered wrapped in plastic to protect geonet from contamination.
- D. The CQA Engineer shall examine rolls upon delivery and any deviation from the above requirements shall be reported to the Owner.
- E. During the placement of the geonet folds or wrinkles shall be avoided and fabrics shall be placed in loose conditions.
- F. On slopes, the geonet shall be secured and rolled down the slope in such a manner as to continually keep the geonet sheet in tension. If necessary, the geonet shall be positioned by hand after being unrolled to minimize wrinkles.
- G. In the presence of wind, all geonet shall be weighted with sandbags or the equivalent. Such sandbags shall be installed during deployment and shall remain until replaced with cover material.
- H. Geonet shall only be cut using scissors or other cutting tools approved by the CQA Engineer. Care shall be taken not to leave tools in the geonet.

I. Seams and Overlap - At a minimum, the following requirements for joining the adjacent geonet shall be met:

- Adjacent rolls shall be overlapped by at least 4 inches.
- The geonet overlaps shall be tied with plastic fasteners. Tying devices shall be white or yellow for easy inspection. Metallic devices are not allowed.
- Tying shall be every 5 feet along the length at the adjacent rolls.
- In general, no horizontal seams shall be allowed on sideslopes.
- In the corners of the sideslopes of rectangular landfills, where overlaps between perpendicular geonet strips are required, an extra layer of geonet shall be unrolled along the slope, on top of the previously installed geonet, from top to bottom of the slope.

J. Defects and Repairs - If a defect is identified in the geonet, the CQA Engineer shall determine the extent and nature of the defect and following actions should be taken:

- After determining the extent and nature of the defect, the CQA Engineer shall promptly notify the Installer, Designer, Owner, and any other necessary parties to assess the problem, review alternative solutions, and implement an action plan.
- The final decision as to the appropriate repair shall be agreed upon the Owner, Installer, Designer, and CQA Engineer.
- If the hole or tear is less than 50 percent of the width of the roll, the damaged area shall be repaired as follows:

1. A patch shall be placed extending 2-foot beyond the edges of the hole or tear.

2. The patch shall be secured to the original geonet by tying every 6 inches. Tying devices shall be as indicated in Subpart I.

- If the hole or tear width across the roll is equal to or more than 50 percent of the width of the roll, the damaged area shall be repaired by cutting out the damaged portion and joining the two portions of the geonet as indicated in Subpart I.

K. The CQA Engineer shall observe any repair and report any noncompliance with the above requirements in writing to the Owner.

3.02 FIELD QUALITY CONTROL

A. All geonet placement shall be inspected by the CQA Consultant as required, who will direct the installer to provide geonet samples for conformance testing in compliance with the Specifications. The sampling frequency shall consist of one sample per lot or 100,000 square feet, whichever is the greater frequency.

1. Each sample shall be tested for those parameters physical properties found in Part 2.01, Subpart B.

END OF SECTION

SECTION 02710

SITE FENCE

PART 1 - GENERAL

1.01 SCOPE

The Work under this Section shall consist of furnishing all labor, materials, tools, equipment, transportation and performing all operations necessary and reasonably incidental to the proper execution and completion of the installation of fence in the area as shown on the Plans. A chain link security fence shall be used for this project. A barbed wire fence shall be installed as shown on the Plans.

PART 2 - PRODUCTS

2.01 MATERIALS

CHAIN LINK FENCE

- A. New fencing fabric shall consist of 6-foot, chain link fabric, complying with Federal Specifications RR-F-191D, Type I (zinc-coated). The top and bottom salvage shall be twisted and barbed. Fabric shall be No. 9 gauge with 1 3/4-inch diamond mesh size.
- B. Fence posts, gates, and accessories shall comply with Federal Specifications RR-F-183(4), and shall be hot dip galvanized in accordance with ASTM A120-69 for pipe, ASTM A123-71 for shapes, and ASTM A153-71 for hardware.
- C. Other specifications are as follows:
 - 1. Intermediate posts (line posts) shall be 2-inch (I.D.) Pipe.

2. Terminal posts - All end, corner and pull posts shall be 3-inch (I.D.) Pipe: gate posts shall be 6-inch (I.D.) Pipe.
3. Top rails shall be 1-5/8-inch (I.D.) pipe.
4. Brace rails shall be of the same size and material as top rails.
5. Stretcher bars shall be 1/4-inch by 3/4-inch bars with square edges.
6. Tension wire shall be No. 7 gauge steel wire.
7. Hog ring fasteners shall be No. 9 gauge steel wire.
8. Post tops for intermediate, end, corner, and pull posts shall be combination type with barbed wire supporting arms attached at an angle of 45 degrees; gate posts and end post adjacent to gate shall have standard post caps.
9. Barbed wire shall consist of 3-strands of 12-1/2 gauge wire, with 14 gauge 4 point barbs spaced 5 to 6 inches apart.
10. Tension rods shall be 3/8-inch galvanized steel rods.
11. Gates shall be sliding cantilever type complete with latches, stops, keepers, rollers, roller tracks, and barbed wire supports. Gate frames shall be 2-inch I.D. pipe, welded at all corners or assembled with fittings. Truss rods shall be 3/8-inch nominal diameter to prevent sag or twist. Intermediate horizontal, diagonal, and vertical braces shall be provided to assure rigid construction. Gate filler fabric shall be of the same fabric as specified for the fence and shall be attached to the gate frame at 15-inch intervals. Gate shall have no overhead obstruction.

BARBED WIRE FENCE

- A. Barbed wire shall be galvanized, ASTM A121, Class 2; two 12-1/2 gauge steel wires with 4 point barbs.

- B. Posts:
 - 1. Line Posts - Shall be studded or punched T-shaped posts with anchor plates or acceptable alternate, weighing 1.33 lb. per ft. Length shall be 8 feet minimum, and spacing shall be maximum of 8 feet on centers.
 - 2. Terminal and Corner Posts - Shall be 2 3/8-inch OD pipe, 3.65 lb. per foot, and galvanized.
 - 3. Gate Posts - Shall be 4-inch OD pipe, 9.10 lb. per foot, and galvanized.

- C. Ties:
 - 1. As recommended by the Manufacturer.

- D. Stabilizers:
 - 1. As recommended by the Manufacturer.
 - 2. Installed at mid-points between the line posts.

PART 3 - EXECUTION

3.01 INSTALLATION

CHAIN LINK FENCE

- A. Fence fabric shall be installed at ground level and securely fastened to the line post ties at a maximum of 24-inch intervals. Line post ties or wire fabric ties shall be of 9 gauge, galvanized steel wire. The fabric shall be tightened to provide a smooth, uniform appearance. Stretcher bars shall be provided at each gate and terminal post. Each stretcher bar shall be threaded through the fabric and anchored to the post at 15-inch intervals by positive mechanical means.
- B. Tension wire shall be attached to the bottom of the chain link fabric by means of hog-ring type of fasteners at a maximum of 24-inch intervals and secured at the terminal posts by means of brace bands.
- C. Top rails shall form a continuous brace from end to end of each stretch of fence. Top rail lengths shall be joined with expansion sleeves. Top rails shall be securely fastened to terminal posts by means of brace ends and brace bands.
- D. Brace rails (horizontal braces) shall be provided at all terminal posts midway between top rail and ground and shall extend from the terminal posts to the first adjacent line post. Braces shall be securely fastened to the line posts by brace ends and brace bands and to the terminal posts by rail ends and brace bands.
- E. Line and terminal posts shall be spaced equidistant in the fence line on a maximum of 10-foot centers. Posts shall be plumb and tops of the posts properly aligned. Line and terminal posts shall be set in concrete footings. The dimensions of the concrete footings for line posts shall be 30 inches deep, 12 inches in diameter with an embedment of 24 inches. The dimensions of the concrete footings for terminal posts shall be 36 inches deep, 12 inches in diameter with an embedment of 30 inches.

Excess concrete shall be removed and not permitted to spread over the ground adjacent to the post. Post tops shall be firmly seated on the top of posts and barbed wire stretched tightly and secured to the support arms.

- F. Gate posts shall be set in cylindrical concrete footings. The dimensions of the concrete footing shall be 42 inches deep, 24 inches in diameter, post embedment 36 inches. The top exposed surface of the footing shall be sloped to shed water. Post tops shall be firmly seated on the top of posts.
- G. To protect against lightning, all wires of the chain link fence shall be securely fastened, with galvanized wire ties, to fence grounding electrodes at intervals of 300 feet, in accordance with the United States of America Standards Institute, C5-1, Lightning Protection Code, and the National Fire Protection Association Bulletin No. 78. Electrodes for the grounding fences shall be driven into firm earth to a minimum depth of 3 feet and shall be either a standard galvanized steel post of a 3/4-inch galvanized steel pipe at intervals of 300 feet.

BARBED WIRE FENCE

- A. Line posts for the barbed wire fence shall be driven into firm earth to a minimum depth of 3 feet.
- B. The dimensions of the concrete footings for terminal, corner, and gate posts shall be 30 inches deep, 12 inches in diameter, with an embedment of 24 inches.
- C. The barbed wire fence shall consist of four strands of barb wire evenly spaced.

END OF SECTION

**SECTION 02720
SITE RESEEDING**

PART 1 - GENERAL

Work under this section shall consist of furnishing all labor, materials, tools, seed equipment, transportation and performing all operations necessary and reasonably incidental to the proper execution and completion of all seeding operations. The seeding will be performed by hay mulch seeding and hydroseeding methods. The hydroseeding method shall be used on the final surfaces of the landfill (Sites A and B). The hay-mulch seeding method shall be employed for all the other disturbed areas including, staging area, Contractor's area, topsoil stockpile area, and borrow soil area.

1.01 SCOPE

Apply the hay-mulch seeding and hydroseeding materials to all areas noted on plans. Seeding shall be Class II and shall be performed in accordance with the requirements of these specifications.

PART 2 - PRODUCTS

2.01 MATERIALS FOR HYDROSEEDING

SEED

- A. The seed shall be delivered to the project site in standard, sealed, undamaged containers.

- B. Each container shall be labeled in accordance with Arizona Revised Statutes and the U.S. Department of Agriculture rules and regulations under the Federal Seed Act. Labels shall indicate the variety of strain of seed, the percentage of germination, purity and weed content, and the

date of analysis which shall not be more than nine months prior to the delivery date.

- C. Seeds shall be 95 percent true-to-variety specified; germination to be 60 percent minimum. Seed shall be of the latest season's crop. Seed that has become wet, moldy or otherwise damaged will not be accepted.
- D. Legume seed shall be inoculated with appropriate bacteria cultures approved by the Engineer, in accordance with the culture manufacturer's inspection.
- E. The following seed mix to be applied to all disturbed areas as prescribed with overspray 10-foot into all existing native vegetation and undisturbed site areas:

Common Name	Botanical Name	Rate of Application in Pounds per Acre
Sand Dropseed	<i>Sporobolus cryptandrus</i>	3.0
Blue Grama	<i>Bouteloua gracilis</i> var. "Hatchita"	2.0
Side Oats Grama	<i>Bouteloua curtipendula</i> var. "Niner"	2.0
Cane Bluestem	<i>Bothriochloa barbinoidea</i>	1.5
Yellow Bluestem	<i>Bothriochloa ischaemum</i>	2.5

WOOD CELLULOSE FIBER MULCH

- A. Natural wood cellulose fiber shall have the property of dispersing readily in water and shall have no toxic effect when combined with seed or other materials.
- B. A green dye which is noninjurious to plant growth shall be used. Wood cellulose fiber shall be delivered in undamaged containers labeled and

bearing the name of the manufacturer and showing air-dry weight content.

- C. Conwed Fiber of Silva-Fiber or approved equal to be used.
- D. The wood cellulose fiber shall be manufactured so that:
 - 1. After addition and agitation in slurry tanks with fertilizers, seeds, water, and other approved additives, the fibers in the material will become uniformly suspended to form a homogeneous slurry.
 - 2. When hydraulically sprayed on the ground, the material will form a blotter like cover impregnated uniformly with seed.
 - 3. The cover will allow the absorption of moisture and allow rainfall or applied water to percolate to the underlying soil.
- E. Weight specifications from suppliers, and for all applications, shall refer to air dry weight of the fiber, a standard equivalent of 10 percent moisture. The mulch shall be supplied in packages having a gross weight not in excess of 100 pounds, and shall be marked by the manufacturer to show the air dry weight content. Suppliers shall certify that laboratory and field testing of their product has been accomplished, and that it meets all of the foregoing requirements pertaining to wood cellulose fiber mulch.

HAY OR STRAW MULCH

- A. Hay or straw mulch shall be free of all contaminants. The hay or straw mulch shall also be from a source that is free of noxious weeds.
- B. The hay or straw shall be approved by the Engineer prior to application.

WATER

- A. Water shall be free of oil, acid, salts or other substances harmful to plants.
- B. The source shall be approved by the Engineer prior to use.

TACKING AGENT

- A. An approved tackifier should have strong adhesive characteristics, as well as imparting a high lubricity to the mixture to allow for the uniform dispersion of the hydroseeding slurry. It shall also have gelling properties to inhibit the tendency of water and fiber to move downhill as they are sprayed on steep slopes.
- B. The stabilizer should readily disperse in water without the formation of gel balls and its properties should not be changed by the addition of fertilizer to the slurry mix (AZ-TACK, AMTAX, or equal).

CHEMICAL FERTILIZER

- A. Chemical fertilizer shall be commercially produced pelleted granular form, state-inspected to meet 16-20-0 percentages derived from inorganic sources meeting the following guaranteed analysis:
 - 1. Percentage (minimum)
 - 2. Ingredients
 - Nitrogen
 - Phosphoric acid
 - Water soluble Potash

- B. Chemical fertilizer shall be furnished in standard containers with the name, weight, and guaranteed analysis of the contents clearly marked.
- C. When a mixed fertilizer is specified, such as 16-20-0:
 - 1. The first number shall represent the minimum percent of soluble nitrogen.
 - 2. The second number shall represent the minimum percent of available phosphoric acid.
 - 3. The third number shall represent the minimum percent of water soluble potash.

2.02 MATERIALS FOR HAY MULCH SEEDING

SEED

- A. Shall meet the specifications as presented in Part 2.

HAY OR STRAW MULCH

- A. The mulch for areas to receive seeding shall include straw of oats, barley, wheat, rye or clean field hay, and shall not contain seeds of noxious weeds.
- B. Straw or hay mulch shall be dry, unweathered, and show no signs of discoloration and mold damage. Straw shall be of 2 to 6 inches in length. Old dry straw which breaks in the crimping process will not be accepted.

WOOD CELLULOSE FIBER MULCH

- A. Wood cellulose fiber shall meet the specifications as presented in Part 2.

- WATER

- A. Shall meet the specifications as presented in Part 2.

CHEMICAL FERTILIZER

- A. Fertilizer shall meet the specifications as presented in Part 2.

PART 3 - EXECUTION

3.01 HYDROSEEDING

- A. Seeding shall be of the class and variety specified, and shall be applied at the rate specified.
- B. The Contractor shall notify the Engineer at least two days prior to commencing seeding operations.
- C. Seeding shall not be performed when wind would prevent uniform application of materials or would carry seeding materials into areas not to be seeded.
- D. Preparation of the areas for seeding shall be as specified rates.
- E. Equipment and methods of distributing seeding materials shall be such as to provide an even and uniform application of the seed, mulch and/or other materials in accordance with the specified rates.
- F. Seeding operations shall not be performed on undisturbed soil outside the clearing and grubbing limits of the project or on steep rock cuts, except as specified.

3.01.01

SEEDING

- A. Seeding shall consist of furnishing and planting range grass seed, and include mulching.
- B. Where equipment can operate, the area to be seeded shall be prepared by discing, harrowing or by other approved methods of loosening the surface soils to 4 inches.
- C. On slopes too steep for equipment to operate, the area shall be prepared by hand-raking to the specified depth.
- D. On sloping areas, all discing, harrowing, and raking shall be directional along the contours of the areas involved.
- E. The surface to receive seeding shall be cleared of all trash, debris and stones larger than 1-1/2 inches in diameter, and of all roots, brush, wire, grade stakes, and other objects that would interfere with planting or maintenance operations.
- F. Rake and smooth the seed bed to even grade. All areas which are eroded shall be restored to the specified condition, grade and slope, as directed prior to seeding.
- G. On cut and fill slopes, the operation shall be conducted in such a manner as to form minor ridges thereon to assist in retarding erosion and favor germination of the seed.
- H. Due care should be taken during the seeding operations to prevent damage to existing trees and shrubs in the seeding area.
- I. Mulch material which is placed upon trees and shrubs, roadways, structures and upon any areas where mulching is not specified or is

placed in excessive depths on mulching areas shall be removed as directed. Mulch materials which are deposited in a matted condition shall be loosened and spread uniformly over the mulching areas to the specified depth.

- J. During seeding and mulching operations, care shall be exercised to prevent drift and displacement of materials. Any unevenness in materials shall be immediately corrected by the Contractor.
- K. Prior to the application of the slurry mix, protective covering shall be placed on all structures and objects where stains would be objectionable. All necessary means shall also be taken to protect the traveling public and vehicles from damage due to drifting spray.

3.01.02 SLURRY MIX AND APPLICATION

- A. The slurry mix of seed, fertilizer, and wood cellulose fiber mulch shall consist of or meet the following proportions:

Material	Rate
Seed	As noted in Subpart 2
Fertilizer	300 lbs/acre
Wood Fiber	1st application: 1,000 lbs/acre
Tacking Agent	1st application: 80 lbs/acre
Hay Mulch	2nd application: 2,500 lbs/acre

- B. After the first application containing seed, fertilizer, wood fiber mulch and tacking agent is applied, a second mulch layer of hay or straw broadcast with a straw blower shall be applied at the specified rate.
- C. Water shall be added to the fiber and seed mix to bring both seed and fiber to a mulch/slurry consistency. The slurry must be adequately

emulsified and mixed to allow for a consistent and uniform spread once hydraulically applied.

- D. The mixed slurry shall then be hydraulically applied, using conventionally accepted hydromulching equipment over the prepared areas. All spraying patterns shall maintain a uniform color and texture consistent with aforementioned rates.
- E. Care shall be taken during the seeding operation to prevent damage to existing trees, shrubs, and structures in the seeding area.
- F. The Contractor shall guarantee irrigated Work covered by this specification to the extent that planted seed will yield an average of at least five healthy germinated plants per square foot after 90 days.
- G. The Contractor shall protect seeded areas from damage by traffic or construction equipment. Surfaces gullied or otherwise damaged following seeding shall be repaired by regrading and reseeding.

3.02 HAY MULCH SEEDING

3.02.01 SEEDING

- A. Seeding shall be accomplished by means of an acceptable mechanical power-drawn drill, followed by packer wheels and broadcast-type seeders. Any seeding equipment used must produce uniform distribution of the various types of seeds at the rate specified.
- B. Mechanical power-drawn drills shall have depth bands set to maintain a planting depth of at least 1/4 inch. All seed not covered in drilling process shall be "raked-in" or otherwise covered with soil to a depth of at least 1/3-inch and rolled to obtain a firm seed bed. Water shall be applied when ordered.

- C. Seed shall not be drilled or sown during windy weather or otherwise unsuitable. When a seed drill is used, it shall be set to space the rows not more than 6 inches apart. The hand method of broadcasting seeds will be permitted only on small areas not accessible to machine methods.
- D. If inspections indicate that strips wider than the specified space between the rows planted have been left, or other areas skipped, the Engineer may require immediate resowing of seed in such areas at the Contractor's expense.

3.02.02 MULCHING

- A. After seeding has been completed, a uniform coating of straw or hay shall be applied at the rate of 1-1/2 tons per acre, crimped in with a crimper or other acceptable equipment. The Engineer may order the employment of hand-crimping operation of such areas where excessive ground slope or confined areas would cause unsatisfactory crimping to result by mechanical methods.
- B. The seeded areas shall be mulched and crimped within 24 hours after seeding. Areas not mulched and crimped within 24 hours after seeding must be re-seeded with the specified seed mix, at the Contractor's expense, prior to mulching and crimping. Areas not properly mulched or damaged due to the Contractor's negligence shall be repaired and remulched in an acceptable manner, at the Contractor's expense. Mulch removed by wind prior to acceptance shall be reestablished immediately.
- C. Apply soil binder to all areas with 2:1 slopes or greater at the rate recommended by the Manufacturer.

END OF SECTION

APPENDIX B-2
CERTIFICATION OF CLOSURE

APPENDIX B-2 (Application APPENDIX M)

CERTIFICATION OF CLOSURE

FACILITY CLOSURE

OWNER OR OPERATOR CERTIFICATION

(The owner or operator must certify that the activities performed in closing the facility are in accordance with the specifications of the closure plan approved by the Arizona Department of Environmental Quality, Waste Programs Division. Accordingly, the certification will be straight forward, no matter how complex closure itself has been.)

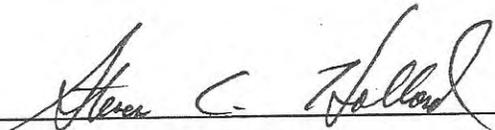
I, Steven C. Holland, of
Owner or Operator

Page-Trowbridge Ranch Landfill

Name and address of hazardous waste facility

hereby state and certify that, to the best of my knowledge and belief, the above-named hazardous waste facility has been closed in accordance with specifications of the approved closure plan, and that the closure was completed on

the 6th day of February, 19 98.


Signature

2-26-98
Date

SCS ENGINEERS

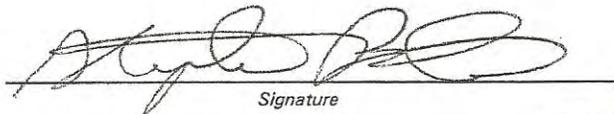
PROFESSIONAL ENGINEER

CLOSURE CERTIFICATION

I, Stephen B. Smith, a registered professional engineer, hereby certify, that I have made a visual inspection of the hazardous waste management unit as described in the Modified Closure Plan dated June 27, 1996, Project Manual for Final Cover System Installation dated September 3, 1996, Construction Plans dated September 4, 1996, and designated for:

Closure of the Page-Trowbridge Ranch Landfill, EPA ID No. AZD 980665814
Closure Plan or Facility Title

I also verify to the best of my knowledge and belief that all activities as required per the approved closure plan or approved amendments to the closure plan, except for the sprig count conformance for Site B, have been performed in accordance with the specifications contained in the closure plan for the facility approved by the Arizona Department of Environmental Quality, Waste Programs Division for the facility.


Signature

02/23/98
Date





Professional Seal

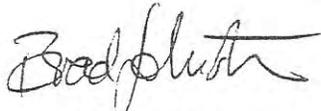
Pursuant to ARS &32-125

Issued by the Arizona State Board of Technical Registration



CERTIFICATION STATEMENT

SCS Engineers' personnel provided Construction Quality Assurance services during the construction of the Final Cover System at the Page-Trowbridge Ranch Landfill located near Oracle Junction, Arizona. Based on the results of the quality assurance program and our observations, SCS certifies that, with the exception of the sprig count conformance for Site B, the Construction Quality Assurance Plan has been successfully implemented and the construction of the Final Cover System is in general accordance with the design criteria and Specifications in the Construction Documents.

(for) 
Henry O' Bryan
CQA Monitor
SCS ENGINEERS



Stephen B. Smith, P.E.
Project Director
SCS ENGINEERS

RECEIVED
FEB 04 1998
ADEQ-HAZARDOUS
WASTE PERMITS



APPENDIX B-3
POST-CLOSURE CERTIFICATION

APPENDIX B-3 (Application APPENDIX N)

POST CLOSURE NOTICES



Department of Risk Management & Safety
Division of Business Affairs

University Services Annex
Building 300A
220 W. Sixth St., 4th Floor South
P.O. Box 210300
Tucson, AZ 85721-0300
(520) 621-1790
Fax: (520) 621-3706
<http://risk.arizona.edu/>

March 12, 2012

Mr. Henry R. Darwin, Director
Arizona Department of Environmental Quality
1110 West Washington Street
Phoenix, Arizona 85007

**RE: UA Page Trowbridge Ranch Landfill (PTRL), EPA ID No. AZD980665814
CERTIFICATION OF POST-CLOSURE NOTICE TO ZONING AUTHORITY
PINAL COUNTY RECORDER FEE NUMBER 2012-019244**

Director Darwin:

The University of Arizona manages the closed Page-Trowbridge Ranch Landfill (PTRL), and is currently working with the ADEQ Hazardous Waste Permit Unit on renewal of the Post Closure Permit for this facility. A Facility Closure Certification was completed in 1998, and was included in the first Post Closure Permit. However, the UA has been unable to ascertain that the Post Closure Notice was recorded with the local zoning authority or certified to the ADEQ Director as required by 40CFR §264.119(b).

To bring the current Post Closure Permit renewal application current, the UA had the attached document recorded with the Pinal County Recorder's Office on March 9, 2012. This letter is Certification of that filing with the Director of ADEQ as required.

The document filed with Pinal County includes the following sections:

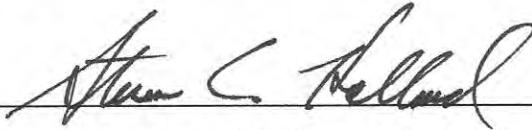
1. Legal Description, Facility Description, and Property Use Restriction
2. Owner (UA) and Engineer Closure Certifications from February, 1998
3. Owner's Closure Notice of 1986 recorded with Pinal County documenting cessation of landfill waste burials at PTRL
4. Survey Plat indicating burial cells and permanent benchmarks
5. Inventory of buried waste chemicals at PTRL

OWNER'S CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based upon my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate,

and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signed:



Date:

3/11/2012

Steven C. Holland, Assistant Vice President
Department of Risk Management Services
University of Arizona

Enclosures: Post Closure Notice Regarding Restricted Property Use for PTRL



Risk Management Services
Division of Business Affairs

University Services Annex
Building 300B
220 W. Sixth St., 2nd Floor
P.O. Box 210300
Tucson, AZ 85721-0300
(520) 621-1790
Fax: (520) 621-3706
<http://risk.arizona.edu/>

MARCH 9, 2012

UNIVERSITY OF ARIZONA

PAGE-TROWBRIDGE RANCH LANDFILL (PTRL)

**POST-CLOSURE NOTICE REGARDING RESTRICTED PROPERTY USE
AS REQUIRED BY 40CFR §264, SUBPART G**

TABLE OF CONTENTS

- 1. LEGAL DESCRIPTION AND FACILITY DESCRIPTION**
- 2. OWNER AND ENGINEER'S CLOSURE CERTIFICATIONS OF FEB. 6, 1998**
- 3. CLOSURE NOTICE OF MAY 27, 1986 WITH ORIGINAL DEED**
- 4. SURVEY PLAT**
- 5. INVENTORY OF BURIED WASTE CHEMICALS**

FACILITY CONTACT:

**UNIVERSITY OF ARIZONA
RISK MANAGEMENT SERVICES DEPARTMENT
P.O. BOX 210300
TUCSON, ARIZONA 85721-0300
(520) 621-1790**



SECTION 1 – LEGAL DESCRIPTION AND FACILITY DESCRIPTION

Facility Name: Page-Trowbridge Ranch Landfill (PTRL)
EPA ID No. AZD980665814

Facility Owner: Arizona Board of Regents on behalf of the University of Arizona

Legal Description: Southwest quarter of the Southwest quarter of the Northwest quarter (SW1/4 SW1/4 NW1/4), of Section thirty-four (34), Township nine (9) South, Range fourteen (14) East of the Gila and Salt River Base and Meridian.

The Page-Trowbridge Ranch Landfill is located in the Oracle/Oracle Junction area of Pinal County, Arizona, north of State Highway 77, approximately seven miles west of Oracle and 30 miles north of Tucson. The landfill occupies 3.25 acres in the southwest corner of the larger 640 acre Page-Trowbridge Ranch owned by the University of Arizona, which includes the southern half of Section 27 and the northern half of Section 34.

From 1962 until February 1986, PTRL was used for burial disposal of low-level radioactive and chemical wastes, generated from operations of the University of Arizona, Arizona State University, Northern Arizona University, and the Veterans Hospital in Tucson. The PTRL burial areas occupy a total of 3.25 acres, and consist of two units: Unit A (northern unit 200 feet by 200 feet), and Unit B (southern unit, 200 feet wide by 500 feet long).

A Closure Plan approved by ADEQ for PTRL was completed in 1997. The Closure system entailed construction of a single, monolithic earthen final cover system over each burial unit (A and B), comprised of multiple engineered layers designed to stabilize the surface above the landfill with a vegetative cover, absorb and evaporate precipitation, and manage surface water flows to avoid impacts on buried waste materials.

A ten-year Post-Closure Permit for PTRL was issued by ADEQ on November 6, 2001, and is in process for renewal in 2012. The Post-Closure Permit specifies requirements for site security and maintenance, site inspections, groundwater monitoring, contingency plan, and reporting.

PROPERTY USE RESTRICTION PER 40CFR §264.119(b)(1)

- a. THE PROPERTY DESCRIBED HEREIN HAS BEEN USED TO MANAGE HAZARDOUS WASTES**
- b. USE OF THE PROPERTY DESCRIBED HEREIN IS RESTRICTED UNDER 40CFR §264, SUBPART G.**
- c. A SURVEY PLAT OF WASTE BURIAL AREAS AND INVENTORY OF BURIED WASTES IS INCLUDED IN SECTIONS 4 AND 5 OF THIS DOCUMENT.**
- d. ANY ACTION BY THE CURRENT OR ANY FUTURE OWNER OF THE PROPERTY THAT INVOLVES REMOVAL OF HAZARDOUS WASTES, RESIDUES, LINER, OR CONTAMINATED SOILS MUST REQUEST A MODIFICATION TO THE POST-CLOSURE PERMIT IN ACCORDANCE WITH APPLICABLE REQUIREMENTS IN 40CFR §124 AND §270.**

FACILITY CLOSURE

OWNER OR OPERATOR CERTIFICATION

(The owner or operator must certify that the activities performed in closing the facility are in accordance with the specifications of the closure plan approved by the Arizona Department of Environmental Quality, Waste Programs Division. Accordingly, the certification will be straight forward, no matter how complex closure itself has been.)

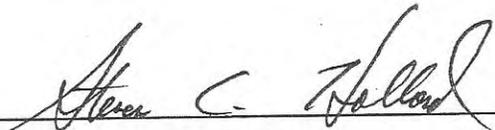
I, Steven C. Holland, of
Owner or Operator

Page-Trowbridge Ranch Landfill

Name and address of hazardous waste facility

hereby state and certify that, to the best of my knowledge and belief, the above-named hazardous waste facility has been closed in accordance with specifications of the approved closure plan, and that the closure was completed on

the 6th day of February, 19 98.


Signature

2-26-98
Date

SCS ENGINEERS

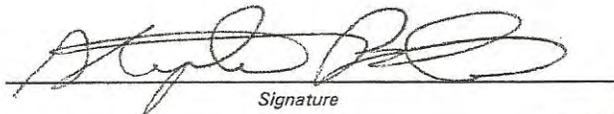
PROFESSIONAL ENGINEER

CLOSURE CERTIFICATION

I, Stephen B. Smith, a registered professional engineer, hereby certify, that I have made a visual inspection of the hazardous waste management unit as described in the Modified Closure Plan dated June 27, 1996, Project Manual for Final Cover System Installation dated September 3, 1996, Construction Plans dated September 4, 1996, and designated for:

Closure of the Page-Trowbridge Ranch Landfill, EPA ID No. AZD 980665814
Closure Plan or Facility Title

I also verify to the best of my knowledge and belief that all activities as required per the approved closure plan or approved amendments to the closure plan, except for the sprig count conformance for Site B, have been performed in accordance with the specifications contained in the closure plan for the facility approved by the Arizona Department of Environmental Quality, Waste Programs Division for the facility.


Signature

02/23/98
Date





Professional Seal

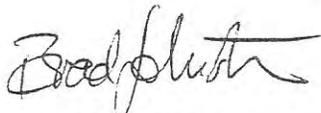
Pursuant to ARS &32-125

Issued by the Arizona State Board of Technical Registration



CERTIFICATION STATEMENT

SCS Engineers' personnel provided Construction Quality Assurance services during the construction of the Final Cover System at the Page-Trowbridge Ranch Landfill located near Oracle Junction, Arizona. Based on the results of the quality assurance program and our observations, SCS certifies that, with the exception of the sprig count conformance for Site B, the Construction Quality Assurance Plan has been successfully implemented and the construction of the Final Cover System is in general accordance with the design criteria and Specifications in the Construction Documents.

(for) 
Henry O' Bryan
CQA Monitor
SCS ENGINEERS



Stephen B. Smith, P.E.
Project Director
SCS ENGINEERS

RECEIVED
FEB 04 1998
ADEQ-HAZARDOUS
WASTE PERMITS





THE UNIVERSITY OF ARIZONA
TUCSON, ARIZONA 85721

CONTRACTING OFFICER

May 27, 1986

To Whom It May Concern:

The University of Arizona has managed a low-level radioactive and hazardous waste site on the Southwest quarter of the Southwest quarter of the Northwest quarter (SW 1/4 SW 1/4 NW 1/4), of Section thirty-four (34), Township nine (9) South, Range fourteen (14) East of the Gila and Salt River Base and Meridian since the early 1960's.

On February 1, 1986 the University ceased all landfill activities at the site. In accordance with the provisions of the approved closure plan, the University of Arizona agrees that the post closure use of the property will never disturb the integrity of the final cover and that proper maintenance of the closed site will continue for the time established in the post closure plan. Further, this notice will be sent to the state (Arizona) and county (Pinal) land authorities upon completion of closure activities at the site.

ARIZONA BOARD OF REGENTS ON BEHALF
OF THE UNIVERSITY OF ARIZONA



Floyd A. Swenson
Contracting Officer

Deed

For the consideration of Ten and no/100 ----- Dollars,
lawful currency of the United States of America, and other valuable considerations, the receipt
whereof is hereby acknowledged, I (or we) Joseph T. Page

do hereby CONVEY unto Board of Regents of the University of Arizona, a
corporation,

Pinal
the following described real property in the County of ~~Pinal~~ State of Arizona, to-wit:

The South Half of Section 27, Township 9 South, Range
14 East of the G. & S. R. B. & M., Pinal County,
Arizona.



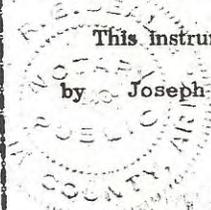
IN WITNESS WHEREOF, I (or we) have hereunto subscribed my (or our) name
this 22nd day of January, 1941.

Joseph T. Page

*Ledger
Deed F41*

(41)

STATE OF ARIZONA, }
County of Pima } ss.



This instrument was acknowledged before me this 22nd day of January, 1941

by Joseph T. Page

R. C. Real

Notary Public.

My Commission Expires: July 2, 1944

INDEXED

COMPARED

STATE OF ARIZONA, }
County of Pinal } ss.

I, Esta L. Bayless, Recorder in and
for the County of Pinal, State aforesaid,
do hereby certify that the annexed instru-
ment was filed and recorded at request of
PINAL TITLE & TRUST CO.

on the 22nd day of January
A. D., 1941, at 1:00
of 1:00 o'clock P.M., in Book No. 645
of 237

Witness my hand and official seal the
day and year first above written.

ESTA L. BAYLESS

Recorder

By *[Signature]*

Deputy

83599



Bargain and Sale Deed

THIS INDENTURE, Made the 26th day of September in the year of our Lord, One Thousand Nine Hundred and Forty-one between EMMA G. KERR, widow of James Alex C. Kerr, of Tucson, Arizona, in her sole and separate right,

part Y of the first part, and Board of Regents of the University of Arizona, the part Y of the second part,

WITNESSETH: That the said part Y of the first part, for and in consideration of the sum of TEN - - - - (\$10.00) - - - - -

Dollars, legal tender of the United States of America, to in hand paid by the said part Y of the second part, the receipt whereof is hereby acknowledged, do. ss. by these presents bargain, sell, convey and confirm unto the said part Y of the second part, and to its successors ~~its~~ and assigns forever, all that certain lot, piece or parcel

of land, situate, lying and being in the County of Pinal, State of Arizona, and bounded and described as follows, to-wit:

The North Half of Section Thirty-four (34) Township nine (9) South, Range Fourteen (14) East, of the Gila and Salt River Base and Meridian, Pinal County, Arizona.

Subject to taxes for the year 1941

Subject to reservations and provisions contained in United States Patent.

Ledger Deed F41

Together with all and singular the tenements, hereditaments and appurtenances thereunto belonging or in anywise appertaining, and the rents, issues and profits thereof; and, also, all the estate, right, title, interest, claim of homestead, property, possession, claim and demand whatsoever, as well in law as in equity, of the said party.....of the first part, of, or to the said premises, and every part and parcel thereof, with the appurtenances.

TO HAVE AND TO HOLD, all and singular, the above described premises, together with the appurtenances and privileges thereunto incident, unto the said party..... of the second part, ^{SUCCESSORS} its / ~~heirs~~ and assigns forever.

IN WITNESS WHEREOF, the said party..... of the first part ha.S... hereunto sether hand.... and seal.... the day and year first above written.

Emma G. Kerr
.....
.....
.....

STATE OF ARIZONA

County of Pima

} ss.

This instrument was acknowledged before me this 26th day of September

A. D., 1941, by Emma G. Kerr, widow of James Alex C. Kerr,

(My Commission expires

July 1, 1945) *S. A. Randall*
Notary Public

STATE OF

County of

} ss.

This instrument was acknowledged before me this _____ day of _____

A. D., 19 _____, by _____

(My commission expires _____)

Notary Public

F-11

INDEXED

COMPARED

**BARGAIN AND SALE
DEED**

FROM

TO

Dated _____, 19____

State of Arizona, }
County of Pima, } ss.

I hereby certify that the within instrument

was filed and recorded at request of

..... A. D. 19____

at..... M, Book..... Page.....

Witness my hand and Official Seal the day
and year aforesaid.

County Recorder.

By Deputy Recorder.

STATE OF ARIZONA, }
County of Pinal } ss.

I, Esta L. Bayless, Recorder in and
for the County of Pinal, State aforesaid,
do hereby certify that the annexed instru-
ment was filed and recorded at request of
PINAL TITLE & TRUST CO.

on the 29 day of Sept

A. D., 1944, at 1:55

o'clock P.M., in Book No. 65

of 18000 Page 487

Witness my hand and official seal the
day and year first above written.

Esta L. Bayless
Recorder.

87317 Deputy.

Lawyers Title

OF ARIZONA

MAIN OFFICE
STONE AT ALAMEDA

BROADWAY OFFICE
5311 EAST BROADWAY

KOLB
1350 N. KOLB, SUITE 126

CASAS ADOBES
7120-B N. ORACLE RD.

MIDTOWN OFFICE
717 S. ALVERNON

P.O. BOX 5406
TUCSON, ARIZONA 85703
PHONE 624-6131

P.O. BOX 5406
TUCSON, ARIZONA 85703
PHONE 745-1771

P.O. BOX 5406
TUCSON, ARIZONA 85715
PHONE 298-3325

P.O. BOX 5406
TUCSON, ARIZONA 85703
PHONE 297-6181

P.O. BOX 5406
TUCSON, ARIZONA 85703
PHONE 881-7875

November 7, 1984

ARIZONA BOARDS OF REGENTS,
on behalf of the U of A
Administration Building
Room 103
Tucson, Az 85721
Attn: Mr. Jim Richmond

Re: Escrow No: 187,110 LFH

Dear Customer:

We are pleased to deliver herewith the papers listed below pertaining to your escrow which has recently been closed.

Thank you for this opportunity of allowing us to serve you and we trust your transaction has been handled to your satisfaction. The policy issued by Lawyers Title Insurance Corporation gives the protection of one of the nation's strongest title insurance companies.

Should you buy, sell or mortgage property in the future, please instruct your agent to have the transaction handled by our office.

Our sincere thanks,

LAWYERS TITLE OF ARIZONA

By: LaVonne F. Hays
Escrow Officer

Enclosed: Recorded Deed - DK 1245-338
Standard Coverage Policy
Preliminary Title Report
Copy of recorded Resolution - DK 1245-336

LFH;ejc



Original deed & title policy sent to purchasing 12/14/84.

STATE OF ARIZONA
COUNTY OF _____ } ss.
Witness my hand and Official Seal

I hereby certify that the within instrument was filed for record in _____ County,

No. 1245-338
Book _____ Page _____

State of Arizona

Date: _____

County Recorder

Request of: _____

By _____
Deputy

W **LAWYERS TREE OF ARIZONA**
Fee: _____

Indexed	Paged	Blotted

WHEN RECORDED
MAIL TO:

42-1614 Exempt
by reason of A-3.

Deed

For the consideration of Ten Dollars and other valuable considerations, I (or we)

FALCON VALLEY RANCHES, INC., an Arizona corporation

do hereby CONVEY unto

ARIZONA BOARD OF REGENTS, ON BEHALF OF THE UNIVERSITY OF ARIZONA

the following described real property situated in Pinal County, Arizona

PARCEL NO. 1: The North half of the Northwest quarter of the Northwest quarter of the Southwest quarter (N $\frac{1}{2}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$), Section Thirty-four (34), Township Nine (9) South, Range Fourteen (14) East of the Gila and Salt River Base and Meridian.

PARCEL NO. 2: The North half of the Northeast quarter of the Northeast quarter of the Southeast quarter (N $\frac{1}{2}$ NE $\frac{1}{4}$ NE $\frac{1}{4}$ SE $\frac{1}{4}$), of Section Thirty-three (33), Township Nine (9) South, Range Fourteen (14) East of the Gila and Salt River Base and Meridian.

SUBJECT TO: Current taxes and assessments, and to all easements, restrictions, encumbrances, Reservations in State and Federal Patents, and other matters of record in the office of the County Recorder of Pinal County, Arizona.

Dated this 11th day of September, 1984

FALCON VALLEY RANCHES, INC., an Arizona corporation

BY: Boyd M. Wilson
President

By: Ralph S. Wilson
Secretary

STATE OF Arizona

COUNTY OF Pima

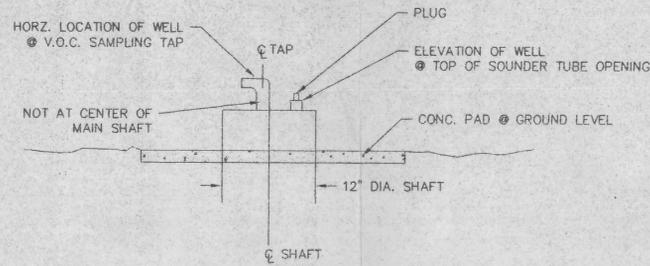
This instrument was acknowledged before me this 11th day of September, 1984

by Boyd M. Wilson as President & Ralph S. Wilson as Secretary of Falcon Valley Ranches, Inc., an Arizona corporation, as the act of said corporation.

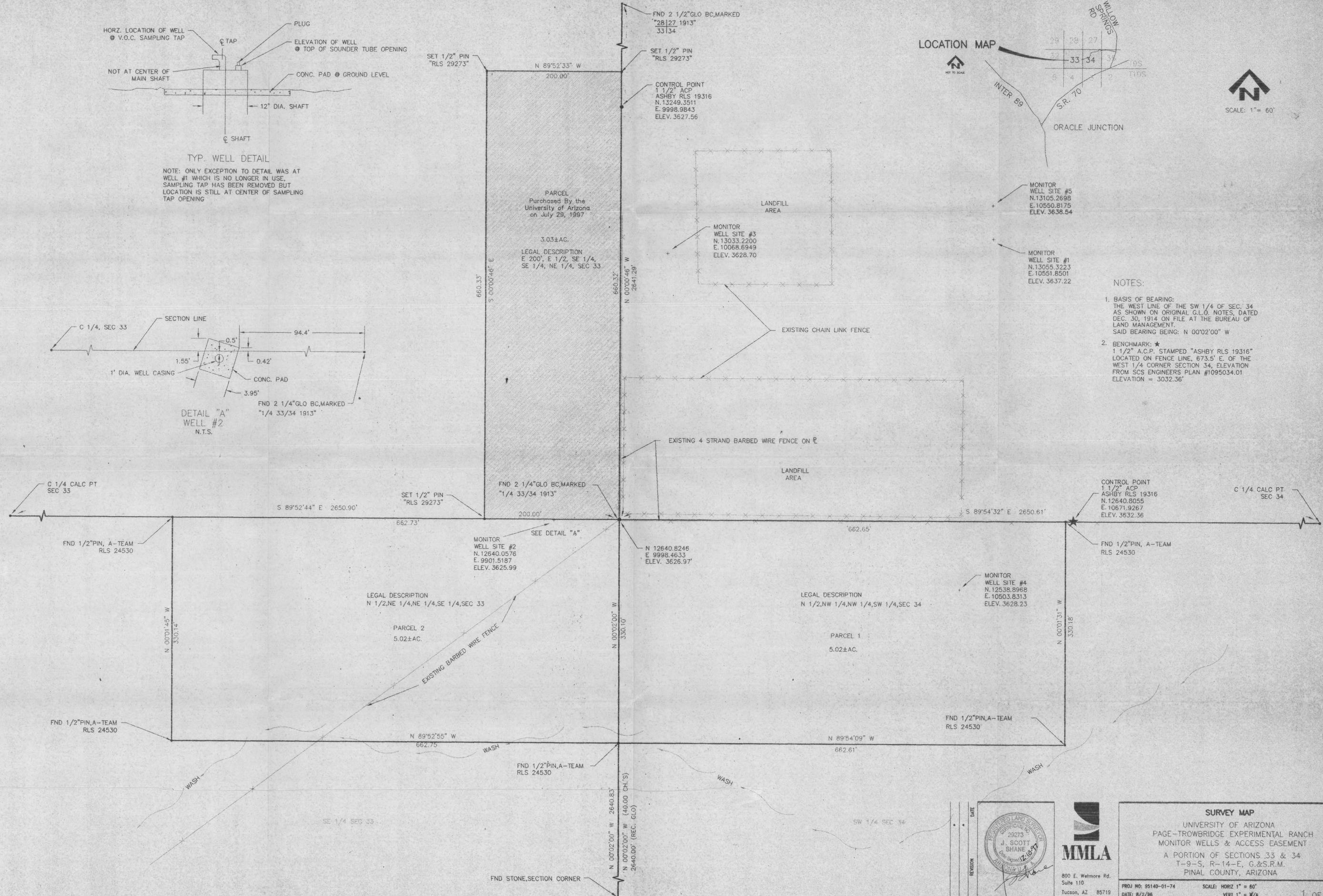
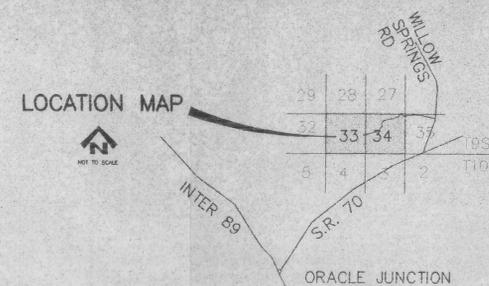
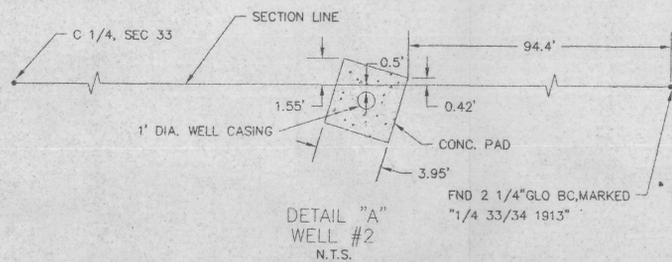


Lavonne F. Hays
Notary Public

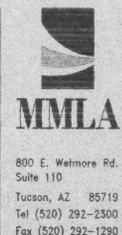
My commission expires _____



TYP. WELL DETAIL
 NOTE: ONLY EXCEPTION TO DETAIL WAS AT WELL #1 WHICH IS NO LONGER IN USE. SAMPLING TAP HAS BEEN REMOVED BUT LOCATION IS STILL AT CENTER OF SAMPLING TAP OPENING



- NOTES:
- BASIS OF BEARING: THE WEST LINE OF THE SW 1/4 OF SEC. 34 AS SHOWN ON ORIGINAL G.L.O. NOTES, DATED DEC. 30, 1914 ON FILE AT THE BUREAU OF LAND MANAGEMENT. SAID BEARING BEING: N 00°02'00\"/>
 - BENCHMARK: ★ 1 1/2\"/>



SURVEY MAP
 UNIVERSITY OF ARIZONA
 PAGE-TROWBRIDGE EXPERIMENTAL RANCH
 MONITOR WELLS & ACCESS EASEMENT
 A PORTION OF SECTIONS 33 & 34
 T-9-S, R-14-E, G.&S.R.M.
 PINAL COUNTY, ARIZONA

PROJ NO: 95140-01-74
 DATE: 8/2/98
 SCALE: HORIZ 1" = 60'
 VERT 1" = N/A

1 OF 1

Engineering • Planning • Environmental • Surveying • Water Resources

UNIVERSITY OF ARIZONA
PAGE TROWBRIDGE RANCH LANDFILL
INVENTORY OF BURIED WASTE CHEMICALS

Chemical Waste	Primary Waste Characteristic(s)	EPA Waste Code
Waste 1,2-Dimethoxypropane	Ignitable	D001
Waste 1, 3-Dichloropropanol-2 (Dichloroisopropanol)	Ignitable	D001
Waste 1,8-Epoxy p-Methane	Ignitable	D001
Waste 1-Pentene (Propylethylene)	Ignitable	D001
Waste 1-Pentyne(n-Propyl Acetylene)	Ignitable	D001
Waste 2,2,4-Trimethylpentane (Isooctane)	Ignitable	D001
Waste 2,4,7-Trinitrofluoren-9-one	Toxic	T
Waste 2-Amino-2-Ethyl-1,3-Propanediol	Ignitable	D001
Waste 2-Amino-2-Methyl-1,3-Propanediol	Ignitable	D001
Waste 2-Amino-2-Methyl-1-Propanol	Ignitable	D001
Waste 2-Amino-4,6-Dihydroxy pyrimidine	Toxic	T
Waste 2-Aminoethanethiol-HCl	Ignitable	D001
Waste 2-Butyloxy-Aethanol	Ignitable	D001
Waste 2-Chloro-4-Nitrobenzoic Acid	Corrosive	D002
Waste 2-Chloromethyl-4-Nitroanisole	Ignitable	D001
Waste 2-Dimethylaminoethyl Phosphonic Acid	Corrosive	D002
Waste 2-Ethoxyethanol	Ignitable	D001
Waste 2-Hydroxyethyl Methacrylate	Ignitable	D001
Waste 2-Propanol	Ignitable	D001
Waste 2-Trimethylaminoethyl Phosphonic Acid	Corrosive	D002
Waste 3,5-Dinitrobenzoyl Chloride	Corrosive	D002
Waste Acarol 2E	Toxic	T
Waste Acetaldehyde	Ignitable	U001
Waste Acetamide	Toxic	T
Waste Acetic Acid	Corrosive	D002
Waste Acetic Acid (80%)	Corrosive	D002
Waste Acetic Acid/Acetone	Ignitable/Corrosive	D001/D002
Waste Acetic Acid/Alcohols	Ignitable/Corrosive	D001/D002
Waste Acetic Acid/Colchicine/MEOH	Ignitable/Corrosive	D001/D002/F003
Waste Acetic Acid/ETOH/MEOH	Ignitable/Corrosive	D001/D002/F003
Waste Acetic Acid/Ethidilene	Corrosive	D002
Waste Acetic Acid/Formic Acid/HCl	Corrosive	D002
Waste Acetic Acid/Guanidine/Acrylamide/MEOH	Ignitable/Corrosive	D001/D002/F003
Waste Acetic Acid/Hexane/Alcohols	Ignitable/Corrosive	D001/D002
Waste Acetic Acid/Isopropanol	Ignitable/Corrosive	D001/D002
Waste Acetic Acid/Isopropanol/Methanol/Comasie Blue/TCA	Ignitable/Corrosive	D001/D002/F003
Waste Acetic Acid/KCL/MEOH	Ignitable/Corrosive	D001/D002/F003
Waste Acetic Acid/KCL/MEOH/Colcemid	Ignitable/Corrosive	D001/D002/F003
Waste Acetic Acid/MEOH/Acrylamide/Chloroform	Ignitable/Corrosive	D001/D002/D022/F003
Waste Acetic Acid/MEOH/Cell Media	Ignitable/Corrosive	D001/D002/F003

BURIED WASTES MAY BE PRESENT IN BURIAL CELL AREAS A OR B
LETTER WASTE CODES INDICATE WASTE ITEM IS DEEMED HAZARDOUS BASED ON CHARACTERISTIC ONLY
C = CORROSIVE, I = IGNITABLE, R = REACTIVE, T = TOXIC

UNIVERSITY OF ARIZONA
PAGE TROWBRIDGE RANCH LANDFILL
INVENTORY OF BURIED WASTE CHEMICALS

Waste Acetic Acid/MEOH/ETOH	Ignitable/Corrosive	D001/D002/F003
Waste Acetic Acid/Methanol	Ignitable/Corrosive	D001.D002/F003
Waste Acetic Acid/Methanol/Acetone/Formalin	Ignitable/Corrosive	D001/D002/F003
Waste Acetic Acid/Methanol/Methotrexate	Ignitable/Corrosive	D001/D002/F003
Waste Acetic Acid/Phenol	Corrosive	D002
Waste Acetic Anhydride	Corrosive	D002
Waste Acetone	Ignitable	D001
Waste Acetone/Acetic Acid	Ignitable/Corrosive	D001/D002
Waste Acetone/Acetic Anhydride/Acetic Acid	Ignitable/Corrosive	D001/D002
Waste Acetone/Alcohols/DMF/Hexane	Ignitable	D001
Waste Acetone/Chloroform	Ignitable	D001/D022
Waste Acetone/Chloroform Water	Ignitable	D001/D022
Waste Acetone/ETOH/Methylene Chloride/Dioxane	Ignitable	D001/F002
Waste Acetone/Ethanol	Ignitable	D001
Waste Acetone/Ether/ETOH/TCA	Ignitable	D001
Waste Acetone/Ethyl Acetate/Acetonitrile	Ignitable	D001/F003
Waste Acetone/Ethyl Ether/Chloroform	Ignitable	D001/D022
Waste Acetone/Formic Acid	Ignitable/Corrosive	D001/D002
Waste Acetone/MEOH/Chloroform	Ignitable	D001/D022/F003
Waste Acetone/Methylene Chloride	Ignitable	D001/F002
Waste Acetone/Oil	Ignitable	D001
Waste Acetone/Osmium Tetraoxide/Glutaraldehyde	Ignitable	D001
Waste Acetone/Pyridine	Ignitable	D001/F005
Waste Acetone/Sodium Iodide	Ignitable	D001
Waste Acetone/Toluene/Xylene	Ignitable	D001/F005
Waste Acetone/Water	Ignitable	D001
Waste Acetonitrile	Ignitable	D001
Waste Acetonitrile (25-50%)	Ignitable	D001
Waste Acetonitrile/Acetic Acid/Ammonium Hydroxide	Ignitable/Corrosive	D001/D002
Waste Acetonitrile/Acetic Acid/Ammonium Hydroxide	Ignitable/Corrosive	D001/D002
Waste Acetonitrile/Acrylamide	Ignitable	D001
Waste Acetonitrile/Ammonium Acetate	Ignitable	D001
Waste Acetonitrile/Ammonium Acetate/Ethyl Acetate	Ignitable	D001/F003
Waste Acetonitrile/Ammonium Hydroxide	Ignitable/Corrosive	D001/D002
Waste Acetonitrile/Ammonium Hydroxide/Acetone	Ignitable/Corrosive	D001/D002
Waste Acetonitrile/Chloroform/DMF	Ignitable	D001/D022
Waste Acetonitrile/ETOH/THF/Ethyl Acetate	Ignitable	D001/F003
Waste Acetonitrile/Ethanol/Acetone	Ignitable	D001
Waste Acetonitrile/Ethyl Acetate/Phenol	Ignitable	D001/F003
Waste Acetonitrile/Hexane/Methanol	Ignitable	D001/F003
Waste Acetonitrile/MEOH/Acetone	Ignitable	D001/F003
Waste Acetonitrile/MEOH/Chloroacetic Acid	Ignitable	D001/F003

BURIED WASTES MAY BE PRESENT IN BURIAL CELL AREAS A OR B
LETTER WASTE CODES INDICATE WASTE ITEM IS DEEMED HAZARDOUS BASED ON CHARACTERISTIC ONLY
C = CORROSIVE, I = IGNITABLE, R = REACTIVE, T = TOXIC

UNIVERSITY OF ARIZONA
PAGE TROWBRIDGE RANCH LANDFILL
INVENTORY OF BURIED WASTE CHEMICALS

Waste Acetonitrile/MEOH/Ethyl Acetate	Ignitable	D001/F003
Waste Acetonitrile/MEOH/Pentane	Ignitable	D001/F003
Waste Acetonitrile/Methanol	Ignitable	D001/F003
Waste Acetonitrile/Methanol/Ammonium Acetate	Ignitable	D001/F003
Waste Acetonitrile/Methanol/Octanol	Ignitable	D001/F003
Waste Acetonitrile/Methanol/THF	Ignitable	D001/F003
Waste Acetonitrile/Phosphate Buffer	Ignitable	D001
Waste Acetonitrile/Sodium Hydroxide	Ignitable/Corrosive	D001/D002
Waste Acetonitrile/TEA	Ignitable	D001
Waste Acetonitrile/THF	Ignitable	D001
Waste Acetonitrile/THF/Ammonium Acetate	Ignitable	D001
Waste Acetonitrile/THF/Chloroform	Ignitable	D001/D022
Waste Acetonitrile/THF/Ethyl Acetate	Ignitable	D001/F003
Waste Acetonitrile/THF/MEOH/Ethyl Acetate	Ignitable	D001/F003
Waste Acetonitrile/THF/MEOH	Ignitable	D001/F003
Waste Acetonitrile/THF/Methylene Chloride	Ignitable	D001/F002
Waste Acetyl Chloride	Corrosive/Toxic	U006
Waste Acetyl Choline Chloride	Toxic	T
Waste Acetylene Tetrabromide(Tetrabromoethane)	Toxic	T
Waste Acetylsulfanyl Chloride	Corrosive	D002
Waste Acid (Mixed) NOS, Liquid	Corrosive	D002
Waste Acid Fuchsin Stain	Corrosive	D002
Waste Acid, NOS, Liquid	Corrosive	D002
Waste Acrolein	Toxic	P003
Waste Acrylamide	Toxic	U007
Waste Acrylamide/Guanidine/Urea	Toxic	U007
Waste Advantage	Ignitable	D001
Waste Aerospray 70	Toxic	T
Waste Aflatoxin	Toxic	T
Waste Aflatoxin Solution	Toxic	T
Waste Aflatoxin, NOS, Solid	Toxic	T
Waste Alcohols, NOS	Ignitable	D001
Waste Alcohol/Acid	Ignitable/Corrosive	D001/D002
Waste Alcohol/Formaldehyde/Xylene/Bouin's Solution	Ignitable	D001/F003
Waste Alcohol/Hexane	Ignitable	D001
Waste Alcohol/Xylene	Ignitable	D001/F003
Waste Alcohols (Mixed)	Ignitable	D001
Waste Alcohols/Acetic Acid/Formalin/Acetone/Ethyl Ether	Ignitable/Corrosive	D001/D002/F003
Waste Alcohols/Acetic Acid/Xylene	Ignitable/Corrosive	D001/D002/F003
Waste Alcohols/Acrylamide/Dianisidine (1.2 mg)	Ignitable	D001
Waste Alcohols/Glutaraldehyde/Acrylamide	Ignitable	D001
Waste Alcohols/Osmium Tetraoxide	Ignitable/Toxic	D001/P087

BURIED WASTES MAY BE PRESENT IN BURIAL CELL AREAS A OR B
LETTER WASTE CODES INDICATE WASTE ITEM IS DEEMED HAZARDOUS BASED ON CHARACTERISTIC ONLY

C = CORROSIVE, I = IGNITABLE, R = REACTIVE, T = TOXIC

UNIVERSITY OF ARIZONA
PAGE TROWBRIDGE RANCH LANDFILL
INVENTORY OF BURIED WASTE CHEMICALS

Waste Alcohols/Propylene Oxide	Ignitable	D001
Waste Alcohols/Xylene/Bouin's Solution/Formalin	Ignitable	D001/F003
Waste Alfa-Tox	Ignitable	T
Waste Allyl Alcohol	Ignitable	P005
Waste Alumina/Acid	Corrosive	D002
Waste Aluminum Chloride	Corrosive	D002
Waste Aluminum Oxide	Corrosive	D002
Waste Amex (Herbicide)	Toxic	T
Waste Amido Black Stain	Toxic	T
Waste Aminoethanethiol-HCL	Ignitable	D001
Waste Ammonia	Corrosive	D002
Waste Ammonia Solution	Corrosive	D002
Waste Ammonia/Methanol	Ignitable/Corrosive	D001/D002
Waste Ammonium Acetate	Toxic	T
Waste Ammonium Acetate/MEOH/ETOH	Ignitable	D001
Waste Ammonium Acetate/Methylene Chloride	Corrosive/Toxic	D002/F002
Waste Ammonium Chloride	Corrosive	D002
Waste Ammonium Formate	Toxic	T
Waste Ammonium Hydroxide. (Aqua Ammonia)	Corrosive	D002
Waste Ammonium Hydroxide/Sodium Hydroxide	Corrosive	D002
Waste Ammonium Lignin Sulfonate	Toxic	T
Waste Ammonium Molybdate	Toxic	T
Waste Ammonium Nitrate	Ignitable	D001
Waste Ammonium Nitrate/Ammonium Hydroxide	Ignitable/Corrosive	D001/D002
Waste Ammonium Oxalate	Toxic	T
Waste Ammonium Persulfate	Ignitable/Reactive	D001/D003
Waste Ammonium Sulfide	Ignitable/Corrosive/Toxic	D001/D002
Waste Amyl Acetate	Ignitable	D001
Waste Amyl Trimethyl Silane	Ignitable	D001
Waste Aniline	Ignitable	U012
Waste Anisole/Diisopropylethanolamine	Ignitable	D001
Waste Antimony Trichloride	Corrosive	D002
Waste Aqua Regia (Nitric Acid/HCl)	Corrosive	D002
Waste Arsenic Acid	Toxic	P010
Waste Arsenic Molybdate	Toxic	D004
Waste Arsenic Trichloride	Toxic	D004
Waste Arsenic/Cadmium	Toxic	D004/D006
Waste Arsenic/Gallium	Toxic	D004
Waste Arsenical Compound, Liquid, NOS	Toxic	D004
Waste Arsenical Compound, Solid, NOS	Toxic	D004
Waste Asbestos	Toxic	T
Waste Asphaltum	Ignitable	D001

BURIED WASTES MAY BE PRESENT IN BURIAL CELL AREAS A OR B
LETTER WASTE CODES INDICATE WASTE ITEM IS DEEMED HAZARDOUS BASED ON CHARACTERISTIC ONLY
C = CORROSIVE, I = IGNITABLE, R = REACTIVE, T = TOXIC

UNIVERSITY OF ARIZONA
PAGE TROWBRIDGE RANCH LANDFILL
INVENTORY OF BURIED WASTE CHEMICALS

Waste Avadex (Herbicide)	Toxic	T
Waste Azo Dyes	Toxic	T
Waste Azodrin (Insecticide)	Toxic	T
Waste Azorbin 5	Toxic	T
Waste BS & Zenker's Solution	Toxic	T
Waste BS solution	Toxic	T
Waste BAM-EC	Toxic	T
Waste Balan L.C.	Toxic	T
Waste Barium Hydroxide	Corrosive	D005
Waste Bay HX 1901	Toxic	T
Waste Baygon 2%	Toxic	T
Waste Beckman's Solution	Ignitable	D001
Waste Benzene	Ignitable	D001/D018/F005
Waste Benzene/Ethyl Acetate/Alcohols	Ignitable	D001/D018/F003
Waste Benzene/Isobutanol	Ignitable	D001/D018
Waste Benzene/MEOH/Dichlorodimethyl Silane	Ignitable	D001/D018/F003
Waste Benzene/MEOH/Ethyl Acetate/Pet. Ether	Ignitable	D001/D018/F003
Waste Benzene/Phosgene	Ignitable	D001/D018
Waste Benzene/Sulfonyl Chloride	Ignitable	D001/D018
Waste Benzene/Thionyl Chloride	Ignitable/Corrosive	D001/D018/D002
Waste Benzene/Toluene/Ethyl Acetate	Ignitable	D001/D018/F003/F005
Waste Benzidine	Ignitable	U021
Waste Benzidine Compounds, NOS, Liquid	Ignitable	U021
Waste Benzine	Ignitable	D001
Waste Benzoin/Alcohol	Ignitable	D001
Waste Benzoyl Chloride	Corrosive	D002
Waste Benzylamine	Corrosive	D002
Waste Benzylodine Glycerol	Toxic	T
Waste Betanal (Herbicide)	Toxic	T
Waste Betanal 475	Toxic	T
Waste Bidrin	Toxic	T
Waste Biological Stains, NOS, Liquid	Toxic	T
Waste Bismuth Bromide	Toxic	T
Waste Bismuth Tetraoxide	Toxic	T
Waste Boron Trichloride	Corrosive	D002
Waste Boron Trifluoride	Corrosive	D002
Waste Boron Trifluoride/Heptane	Ignitable/Corrosive	D001/D002
Waste Boron Trifluoride/MEOH	Ignitable/Corrosive	D001/D002
Waste Bouins Solution	Corrosive	D002
Waste Brodifacoum (50 ppm)	Toxic	T
Waste Bromide Compounds, NOS	Corrosive	D002
Waste Bromine	Corrosive	D002

BURIED WASTES MAY BE PRESENT IN BURIAL CELL AREAS A OR B
LETTER WASTE CODES INDICATE WASTE ITEM IS DEEMED HAZARDOUS BASED ON CHARACTERISTIC ONLY
C = CORROSIVE, I = IGNITABLE, R = REACTIVE, T = TOXIC

UNIVERSITY OF ARIZONA
PAGE TROWBRIDGE RANCH LANDFILL
INVENTORY OF BURIED WASTE CHEMICALS

Waste Bromoacetaldehyde Diethyl Acetal	Toxic	T
Waste Bromobenzene	Ignitable	D001
Waste Bromodeoxyuridine	Toxic	D001
Waste Bromophenols	Ignitable	D001
Waste Butadiene	Ignitable	D001
Waste Butanedithiol	Ignitable	D001
Waste Butanol	Ignitable	D001
Waste Butanol/Acetic Acid	Ignitable/Corrosive	D001/D002
Waste Butyl Chloride/Isopropanol	Ignitable/Corrosive	D001/D002
Waste Butyl Lithium	Reactive	D001/D003
Waste Butyl Methacrylate	Ignitable	D001
Waste Butyric Acid	Corrosive	D002
Waste Cadmium Sulfate	Toxic	D006
Waste Calcium Cyanide	Toxic	PO21
Waste Calcium Hydride	Reactive	D001/D003
Waste Carbamate Pesticide, Liquid, NOS	Toxic	T
Waste Carbon Disulfide	Ignitable	P022
Waste Carbon tetrachloride	Toxic	U211
Waste Carbon tetrachloride/MEOH	Ignitable/Toxic	D001/D019
Waste Carbon tetrachloride/MEOH/Pump Oil	Ignitable/Toxic	D001/D019
Waste Carbazole (Dibenzopyrrole)	Toxic	T
Waste Carbyne (Herbicide)	Toxic	T
Waste Carcinogenic, n.o.s., Liquid	Toxic	T
Waste Carcinogenic, n.o.s., Solid	Toxic	T
Waste Catechol(Pyrocatechol)	Ignitable	D001
Waste Cellosolve acetate	Ignitable	D001
Waste Cesium Chloride	Toxic	T
Waste Chem-Serv 410	Corrosive	D002
Waste Chem-Serv 551	Corrosive	D002
Waste Chloroacetic Acid	Corrosive	D002
Waste Chloroacetyl Chloride	Corrosive	D002
Waste Chlorobenzilate	Ignitable	D002
Waste Chlorobenzoic Acid	Corrosive	D002
Waste Chloroform	Toxic	U044
Waste Chloroform/Acetic Acid	Corrosive/Toxic	D002/D022
Waste Chloroform/Acetonitrile/Methanol	Ignitable/Toxic	D001/D022
Waste Chloroform/DMF/Ethylene Oxide	Ignitable/Toxic	D001/D022
Waste Chloroform/DMF/Ethylene Oxide/Acetone	Ignitable/Toxic	D001/D022
Waste Chloroform/ETOH/Isopropanol	Ignitable/Toxic	D001/D022
Waste Chloroform/Ethanol	Ignitable/Toxic	D001/D022
Waste Chloroform/Ethanol/Methylene Chloride/Hexane	Ignitable/Toxic	D001/D022/F002
Waste Chloroform/Ether/Phenol	Ignitable/Toxic	D001/D022

BURIED WASTES MAY BE PRESENT IN BURIAL CELL AREAS A OR B
LETTER WASTE CODES INDICATE WASTE ITEM IS DEEMED HAZARDOUS BASED ON CHARACTERISTIC ONLY

C = CORROSIVE, I = IGNITABLE, R = REACTIVE, T = TOXIC

UNIVERSITY OF ARIZONA
PAGE TROWBRIDGE RANCH LANDFILL
INVENTORY OF BURIED WASTE CHEMICALS

Waste Chloroform/Ethyl Acetate	Ignitable/Toxic	D001/D022/F003
Waste Chloroform/Halogenated Hydrocarbons, NOS	Toxic	D022
Waste Chloroform/Methanol	Ignitable/Toxic	D001/D022/F003
Waste Chloroform/Nitrogen Bromide/Tannic Acid	Toxic	D022
Waste Chloroform/Phenol	Toxic	D022
Waste Chloromine T	Toxic	T
Waste Chlorophenol	Ignitable	U048
Waste Chloropropylate Miticide	Toxic	T
Waste Chromate Indicator	Toxic	T
Waste Chromic Acid Solution	Corrosive	D002/D007
Waste Chromic Acid, Solid (Chromic Trioxide)	Ignitable/Toxic	D001/D007
Waste Chromium Solution	Toxic	D007
Waste Chromium Standard	Toxic	D007
Waste Chromium/Cyanide Solution	Toxic	D007
Waste Chromium/Cyanide/Methanol	Ignitable/Toxic	D001/D007/F003
Waste Cleland's Reagent (Dithiothreitol)	Toxic	T
Waste Cobelx	Toxic	TT
Waste Collodion	Ignitable	D001
Waste Collophane	Toxic	T
Waste Contact weedkiller	Toxic	T
Waste Courmarin Compounds/Dimethyl Sulfoxide (DMSO)	Toxic	T
Waste Cresol	Ignitable	U052
Waste Cupric Sulfate (Copper Sulfate)	Toxic	T
Waste Cuprous Chloride	Toxic	T
Waste Cyanide	Reactive	D003
Waste Cyanide Solution, NOS	Reactive	D003
Waste Cyanide/Ethyl Ether/Acetonitrile/Toluene	Ignitable/Reactive	D001/D003/F003/F005
Waste Cyanide/Phenol	Reactive/Toxic	D003
Waste Cyanide/Sulfur Solution	Reactive	D003
Waste Cyanogen Bromide	Toxic	U246
Waste Cyclohexane	Ignitable	U056
Waste Cyclohexanol	Ignitable	D001
Waste Cyclohexanone	Ignitable	U057
Waste Cyclopentadienylirondicarbonyl Dimer	Ignitable	D001
Waste Cyclopentanol	Ignitable	D001
Waste Cygon 26.7	Toxic	T
Waste DDT (Dcichlorodiphenyltrichloroethane)	Ignitable	U061
Waste DDT 5%	Ignitable	U061
Waste DDT/Allethrin	Ignitable	U061
Waste DMF/Chloroform/DMSO	Ignitable/Toxic	D001/D022
Waste DMSO/Trichloroethylene	Ignitable	D001
Waste Darvan	Toxic	T

BURIED WASTES MAY BE PRESENT IN BURIAL CELL AREAS A OR B
LETTER WASTE CODES INDICATE WASTE ITEM IS DEEMED HAZARDOUS BASED ON CHARACTERISTIC ONLY
C = CORROSIVE, I = IGNITABLE, R = REACTIVE, T = TOXIC

UNIVERSITY OF ARIZONA
PAGE TROWBRIDGE RANCH LANDFILL
INVENTORY OF BURIED WASTE CHEMICALS

Waste Decane	Ignitable	D001
Waste Dexa-Klor Dust	Toxic	T
Waste Di-Syston	Toxic	T
Waste Diaminobenzidine (DAB)	Ignitable	D001
Waste Diaminobenzidine (DAB)/ Osmium	Ignitable/Toxic	D001/P087
Waste Dianisidine	Toxic	T
Waste Dianisidine (Solid)	Toxic	T
Waste Dianisidine/Ethidium Bromide	Toxic	T
Waste Dianisidine/PMN	Toxic	T
Waste Diazinon 4EC Herbicide	Toxic	T
Waste Diazinon AG 500	Toxic	T
Waste Diazmon 4E	Toxic	T
Waste Dibrom 8 Emulsion	Corrosive	D002
Waste Dibutyl Phthalate	Ignitable	U069
Waste Dichlorobenzene (Liquid)	Ignitable	U070
Waste Dichlorobenzene (Solid)	Ignitable	U072
Waste Dichlorodimethyl Silane	Ignitable	D001
Waste Dichloroethane	Ignitable	U077
Waste Dichloroethane!1-Nitroso-2-Naphthyl Nitrite	Ignitable	U077
Waste Dichloroethane/Naphthols/Nitrites	Ignitable	U077
Waste Dichloromethane/ETOH/Sulfuric Ac1d	Ignitable/Corrosive/Toxic	D001/D002/F002
Waste Dichlorophenol	Ignitable	U081
Waste Dicyandiamide	Toxic	T
Waste Dicyclopentadiene	Ignitable	D001
Waste Diesel Fuel	Ignitable	D001
Waste Diethylamine	Ignitable	D001
Waste Diethylene/Triethylene Glycol/Tetrachloroethylene	Ignitable/Toxic	D001/F002
Waste D1flotan	Toxic	T
Waste Digitonin	Toxic	T
Waste Dimercapto-Propanol	Toxic	T
Waste Dimethoxymetbane (Metbylal)	Ignitable	D001
Waste Dimethyl Formamide .	Ignitable	D001
Waste Dimethyl Pentane/Chloroform/Alcohols	Ignitable/Toxic	D001/D022
Waste Dimethyl Sulfate/Sulfuric Acid	Ignitable/Corrosive	D001/D002
Waste Dimethyl Sulfoxide (DMSO)	Ignitable	D001
Waste Dimethylaminobenzaldehyde(Ehrlich's Reagent)	Toxic	T
Waste Dimethylaminobenzoic Acid	Corrosive	D002
Waste Dimethyldichloro Silane	Ignitable	D001
Waste Dimethylethylene Diamine	Ignitable	D001
Waste Dimethylformamide/Methylene Chloride/Ethyl Acetate	Ignitable/Toxic	D001/F002/F003
Waste Dimilin 25W (Insecticide)	Toxic	T
Waste Dinitrochlorobenzene	Toxic	PO48

BURIED WASTES MAY BE PRESENT IN BURIAL CELL AREAS A OR B
LETTER WASTE CODES INDICATE WASTE ITEM IS DEEMED HAZARDOUS BASED ON CHARACTERISTIC ONLY
C = CORROSIVE, I = IGNITABLE, R = REACTIVE, T = TOXIC

UNIVERSITY OF ARIZONA
PAGE TROWBRIDGE RANCH LANDFILL
INVENTORY OF BURIED WASTE CHEMICALS

Waste Dinitrophenol .	Ignitable/Reactive	D001/D003
Waste Dinitrophenylhydrazine	Reactive	D001/D003
Waste Dioxane	Ignitable	U108
Waste Dioxane/Benzoyl Chloride	Ignitable/Corrosive	D001/D002
Waste Dioxane/Phenol	Ignitable/Toxic	D001
Waste Dipterex	Toxic	T
Waste Divinylbenzene	Ignitable	D001
Waste Dodecenyl Succinic Anhydride	Ignitable	D001
Waste Dodecylbenzenesulfonic Acid	Corrosive	D002
Waste Dow M-3625	Toxic	T
Waste Dowfane 85	Toxic	T
Waste Dowpon	Toxic	T
Waste Dowpon C	Toxic	T
Waste Dowtherm A	Toxic	F002
Waste Drazman 14G	Toxic	T
Waste Drugs (Outdated), NOS, Liquid	Toxic	T
Waste Dursban 2E	Toxic	T
Waste Dursban M	Toxic	T
Waste Dyfonate 5G	Toxic	T
Waste Dylox	Toxic	T
Waste Econofluor (Scintillation Fluid)	Ignitable	D001
Waste Epon Resin	Ignitable	D001
Waste Eptam	Toxic	T
Waste Eptam 6E	Toxic	T
Waste Ethane	Ignitable	D001
Waste Ethanedithiol	Ignitable	D001
Waste Ethanethiol	Ignitable	D001
Waste Ethanethiol/Methanol	Ignitable	D001/F003
Waste Ethanethiol/Methanol/Ethanol	Ignitable	D001/F003
Waste Ethanol	Ignitable	D001
Waste Ethanol/Acetic Acid	Ignitable/Corrosive	D001/D002
Waste Ethanol/Ether	Ignitable	D001/F003
Waste Ethanol/Ether/Sodium Hydroxide/Acetone	Ignitable/Corrosive	D001/D002/F003
Waste Ethanol/Hexane/Acetic Acid	Ignitable/Corrosive	D001/D002
Waste Ethanol/Methanol/Acetic Acid	Ignitable/Corrosive	D001/D002/F003
Waste Ethanol/Potassium Hydroxide	Ignitable/Corrosive	D001/D002
Waste Ethanol/Sulfuric Acid/Trichloroacetic Acid	Ignitable/Corrosive	D001/D002
Waste Ethanol/Toluene	Ignitable	D001/F005
Waste Ether/Toluene/Acetone/ETOH	Ignitable	D001/F003/F005
Waste Ethers	Ignitable	D001/F003
Waste Ethidium Bromide	Toxic	T
Waste Ethidium Bromide/Isopropanol	Ignitable/Toxic	D001

BURIED WASTES MAY BE PRESENT IN BURIAL CELL AREAS A OR B
LETTER WASTE CODES INDICATE WASTE ITEM IS DEEMED HAZARDOUS BASED ON CHARACTERISTIC ONLY
C = CORROSIVE, I = IGNITABLE, R = REACTIVE, T = TOXIC

UNIVERSITY OF ARIZONA
PAGE TROWBRIDGE RANCH LANDFILL
INVENTORY OF BURIED WASTE CHEMICALS

Waste Ethidium Bromide/Chlorox	Toxic	T
Waste Ethyl Acetate	Ignitable	U112
Waste Ethyl Acetate/Acetonitrile/Chloroform	Ignitable/Toxic	D001/D022/F003
Waste Ethyl Acetate/Formic Acid	Ignitable/Corrosive	D002/F003
Waste Ethyl Acetate/Hexane	Ignitable	D001/F003
Waste Ethyl Acetate/Pet. Ether/Heptane/Methylene Chloride	Ignitable/Toxic	D001/F002/F003
Waste Ethyl Acetoacetate	Ignitable	D001
Waste Ethyl Acetominomalomat	Toxic	T
Waste Ethyl Acrylate/Methyl Acrylate	Ignitable	D001
Waste Ethyl Acrylate/Methylene Chloride/Ammonium Acetate	Ignitable/Toxic	D001/F002
Waste Ethyl Amyl Carbinol	Ignitable	D001
Waste Ethyl Cyanoacetate	Ignitable	D001
Waste Ethyl Diazoacetate	Ignitable	D001
Waste Ethyl Ether	Ignitable	U117
Waste Ethyl Ether/Alcohol	Ignitable	D001/F003
Waste Ethyl Ether/Ethyl Acetate/Hexane/Dichloromethane	Ignitable	D001/F002/F003
Waste Ethyl Ether/Methanol	Ignitable	D001/F003
Waste Ethyl Formate	Ignitable	D001
Waste Ethyl Trichlorosilane	Ignitable	D001
Waste Ethylamine	Ignitable	D001
Waste Ethylene Glycol	Ignitable	D001
Waste Ethylene Glycol Monomethyl Ether	Ignitable	D001
Waste Ethylene Glycol/TCE/Triethylene Glycol/Xylene	Ignitable/Toxic	D001/F002/F003
Waste Ethylene Oxide (11%)	Ignitable	U115
Waste Ethylenediamine	Ignitable	D001
Waste Ethylenediamine Tetraacetic Acid (EDTA)	Toxic	T
Waste Ethylene Oxide/Pyridine/Ethyl Acrylate	Ignitable	D001/F005
Waste Ethylhexadecyldimethyl Ammonium Bromide	Corrosive	D002
Waste FMC 35001	Toxic	T
Waste Ferric Chloride	Corrosive	D002
Waste Ferrous Ammonium Sulfate	Toxic	T
Waste Flammable Liquid, Organic, Solvent Mixture, NOS	Ignitable	D001/F003/F005
Waste Flammable Liquid, NOS, Organic, Solvent NOS	Ignitable	D001/F003/F005
Waste Flammable Liquid, NOS, Paint Thinner, NOS	Ignitable	D001
Waste Flammable Liquid, NOS, Scintillation Fluid, NOS	Ignitable	D001
Waste Fluoboric Acid (HBF)	Corrosive	D002
Waste Fluoresone(Ethyl p-Fluorophenyl Sulfone)	Toxic	T
Waste Formaldehyde	Ignitable	U122
Waste Formaldehyde/Acetone	Ignitable	D001
Waste Formaldehyde/Alcohol	Ignitable	D001
Waste Formaldehyde/ETOH/Methylene Chloride	Ignitable/Toxic	D001/F003
Waste Formaldehyde/Toluene/Xylene	Ignitable	D001/F003/F005

BURIED WASTES MAY BE PRESENT IN BURIAL CELL AREAS A OR B
LETTER WASTE CODES INDICATE WASTE ITEM IS DEEMED HAZARDOUS BASED ON CHARACTERISTIC ONLY
C = CORROSIVE, I = IGNITABLE, R = REACTIVE, T = TOXIC

UNIVERSITY OF ARIZONA
PAGE TROWBRIDGE RANCH LANDFILL
INVENTORY OF BURIED WASTE CHEMICALS

Waste Formalin	Toxic	T
Waste Formalin Acetate (10%)	Toxic	T
Waste Formalin/Methyl Cellosolve/Xylene	Ignitable	D001/F003
Waste Formalin/Toluene	Ignitable	D001/F005
Waste Formalin/Xylene/Alcohols	Ignitable	D001/F003
Waste Formalin/Xylene/Ethanol/Bouin's	Ignitable	D001/F003
Waste Formamide(Methanamide)	Ignitable	D001
Waste Formamide(solid)	Ignitable	D001
Waste Formic Acid	Corrosive	U123
Waste Formic Acid/TCA	Corrosive	D002
Waste Formula 40	Toxic	F002
Waste Freons	Toxic	T
Waste Fumazone 86	Toxic	T
Waste Fungicide, NOS, Liquid	Toxic	T
Waste Furloe I24-20G	Toxic	T
Waste GWK	Toxic	T
Waste GY-SI	Toxic	T
Waste Galecron 4EC (Herbicide)	Toxic	T
Waste Gallium (metal)	Toxic	D002
Waste Gamma Amino Butyric Acid (Piperidic Acid)	Corrosive	D002
Waste Gasoline	Ignitable	D001
Waste Glutaraldehyde	Toxic	T
Waste Glycerol	Toxic	T
Waste Glycerol/Xylene/Kerosene	Ignitable	D001/F003
Waste Glycol	Toxic	T
Waste Glycol/Acetone	Ignitable	D001
Waste Glycol/Trichloroethylene	Ignitable/Toxic	D001/F002
Waste Guthion 25	Toxic	F001
Waste Halogenated Compounds	Ignitable	T
Waste Hazardous, NOS, Liquid	Toxic	T
Waste Hazardous, NOS, Solid	Toxic	T
Waste Hazardous Pesticide, NOS, Solid	Toxic	T
Waste Heavy Metal, NOS, Liquid	Toxic	T
Waste Hema-TeK Stain PaK	Toxic	D001
Waste Heptane	Ignitable	D001
Waste Heptane/Boron Tirfluoride	Ignitable	D001
Waste Heptane/Isopropanol	Ignitable	D001
Waste Heptane/Methanol	Ignitable	D001/F005
Waste Heptane/Methanol/Acetonitrile	Ignitable	D001/F005
Waste Heptane/Propanol	Ignitable	D001
Waste Hexamethyldisilazane	Toxic	T
Waste Hexane	Ignitable	D001

BURIED WASTES MAY BE PRESENT IN BURIAL CELL AREAS A OR B
LETTER WASTE CODES INDICATE WASTE ITEM IS DEEMED HAZARDOUS BASED ON CHARACTERISTIC ONLY
C = CORROSIVE, I = IGNITABLE, R = REACTIVE, T = TOXIC

UNIVERSITY OF ARIZONA
PAGE TROWBRIDGE RANCH LANDFILL
INVENTORY OF BURIED WASTE CHEMICALS

Waste Hexane/Acetic Acid/Ethyl Acetate	Ignitable/Corrosive	D001/D002/F003
Waste Hexane/Acetone/Alcohols/Methylene Chloride	Ignitable/Toxic	D001/F003
Waste Hexane/Chloroform/MEOH	Ignitable/Toxic	D001/D022
Waste Hexane/Formic Acid	Ignitable/Corrosive	D001/D002
Waste Hexanes	Ignitable	D001
Waste Hydrazine (95+%)	Toxic	U133
Waste Hydrazine Sulfate	Toxic	T
Waste Hydrazine (Anhydrous)	Toxic	U133
Waste Hydriodic Acid	Corrosive	D002
Waste Hydrochloric Acid	Corrosive	D002
Waste Hydrochloric Acid/Cresolphthalein	Corrosive	D002
Waste Hydrochloric Acid/Lanthanum (A.A. Waste)	Corrosive	D002
Waste Hydrochloric Acid/Lead	Corrosive/Toxic	D002/D008
Waste Hydrochloric Acid/Petroleum Ether	Ignitable/Corrosive	D001/D002
Waste Hydrochloric Acid/Sodium Hydroxide/Ammonium Hydroxide	Corrosive	D002
Waste Hydrofluoric Acid	Corrosive	U134
Waste Hydrogen Bromide (HBR)	Corrosive	D002
Waste Hydrogen Fluoride	Corrosive	U134
Waste Hydrogen Peroxide	Reactive	D003
Waste Hydrogen Sulfide	Toxic	U135
Waste Hydroquinone	Toxic	T
Waste Hypochlorites	Ignitable	D001
Waste Hypophosphorus Acid	Corrosive	D002
Waste Imidan I-E	Toxic	T
Waste Inorganic Acids, Liquid, NOS	Corrosive	D002
Waste Insecticide, Dry, NOS	Toxic	T
Waste Iodide Solution	Toxic	T
Waste Iodine	Ignitable	D001
Waste Iodine Iodate	Toxic	T
Waste Iodine Monochloride	Toxic	T
Waste Isoamyl Alcohol/Ethidium Bromide	Ignitable	D001
Waste Isoamyl Formate	Ignitable	D001
Waste Isobutyl Alcohol	Ignitable	U140
Waste Isobutyric Acid	Corrosive	D002
Waste Isophthaloyl Dichloride	Toxic	T
Waste Isopropanol	Ignitable	D001
Waste Isopropanol/KOH	Ignitable/Corrosive	D001/D002
Waste Isopropanol/Potassium Hydroxide	Ignitable/Corrosive	D001/D002
Waste Isotron (Freon 11)	Toxic	F002
Waste JP-4	Ignitable	D001
Waste Jeffamine (Alkaline)	Corrosive	D002
Waste Kaiser Freon 11	Toxic	F002

BURIED WASTES MAY BE PRESENT IN BURIAL CELL AREAS A OR B
LETTER WASTE CODES INDICATE WASTE ITEM IS DEEMED HAZARDOUS BASED ON CHARACTERISTIC ONLY
C = CORROSIVE, I = IGNITABLE, R = REACTIVE, T = TOXIC

UNIVERSITY OF ARIZONA
PAGE TROWBRIDGE RANCH LANDFILL
INVENTORY OF BURIED WASTE CHEMICALS

Waste Keltane EC	Toxic	T
Waste Kerosene	Ignitable	D001
Waste Kerosene/Ethylene Glycol	Ignitable	D001
Waste Kerosene/Ethylene Glycol/Trichloroethylene	Ignitable/Toxic	D001/F002
Waste Kjeldahl Solution (Sulfuric Acid/Mercuric Oxide)	Corrosive/Toxic	D002/D009
Waste Klearol	Toxic	T
Waste Kodak Omnigraphic Developer	Corrosive	D002
Waste Kodak Omnigraphic Developer & Replenisher	Corrosive	D002
Waste Korlan 24E	Toxic	T
Waste Korlan 25W (Fly Control)	Toxic	T
Waste Lannate (Insecticide & Nematocide)	Toxic	T
Waste Lanthanum Chloride	Toxic	T
Waste Lauryl Pyridinium Chloride	Toxic	T
Waste Lead Acetate	Toxic	U144
Waste Lead Iodide	Toxic	D008
Waste Lead Nitrate	Ignitable/Toxic	D001/D008
Waste Lead Solution (mixed)	Toxic	D008
Waste Lead Standard	Toxic	D008
Waste Lignins, NOS, Liquid	Toxic	T
Waste Lime-Away (Sodium Hypochlorite/Sodium Hydroxide)	Corrosive	D002
Waste Lithium Aluminum Hydride	Reactive	D003
Waste Lithium Amide	Reactive	D003
Waste Lithium Borohydride	Reactive	D003
Waste Lithium Chloride	Toxic	T
Waste Lithium Metal	Reactive	D003
Waste Lubricating Oil - Misc	Ignitable	D001
Waste Magnesium	Reactive	D001
Waste Magnesium Bromate	Toxic	T
Waste Magnesium Dioxide (Peroxide)	Ignitable/Reactive	D001/D003
Waste Magnesium Oxide	Toxic	T
Waste Magnesium Perchlorate	Ignitable/Reactive	D001/D003
Waste Magnesium Solution	Toxic	T
Waste Magnesium Sulfate /Bromine	Toxic/Corrosive	D002
Waste Malathion	Toxic	T
Waste Malathion Ee-57	Toxic	T
Waste Malathion EM-S	Toxic	T
Waste Maleic Acid	Corrosive	D002
Waste Maleic Anhydride	Toxic	U147
Waste Maleonic Acid	Corrosive	D002
Waste Malononitrile(Cyanoacetoneitrile)	Ignitable	U149
Waste Mercaptoethanol	Ignitable/Toxic	D001
Waste Mercuric Chloride (B-5 Waste)	Toxic	D009

BURIED WASTES MAY BE PRESENT IN BURIAL CELL AREAS A OR B
LETTER WASTE CODES INDICATE WASTE ITEM IS DEEMED HAZARDOUS BASED ON CHARACTERISTIC ONLY
C = CORROSIVE, I = IGNITABLE, R = REACTIVE, T = TOXIC

UNIVERSITY OF ARIZONA
PAGE TROWBRIDGE RANCH LANDFILL
INVENTORY OF BURIED WASTE CHEMICALS

Waste Mercuric Chloride/Basic Fuchsin/Malachite Green	Toxic	D009
Waste Mercuric Oxide	Toxic	D009
Waste Mercury	Toxic	D009/U151
Waste Mercury Compound, NOS, Liquid	Toxic	D009
Waste Mercury Spill Solution	Toxic	D009
Waste Mercury Spill Waste, NOS, Solid	Toxic	D009
Waste Mercury/TCA/ETOH	Ignitable/Toxic	D001/D009
Waste Meta-Systox-R	Toxic	T
Waste Methacrylic Acid	Ignitable	D001
Waste Methanethiol(Methyl Mercaptan)	Ignitable	D001
Waste Methanol.	Ignitable	U154
Waste Methanol(20%)/Water	Ignitable	U154
Waste Methanol/Acetic Acid	Ignitable/Corrosive	D001/D002/F003
Waste Methanol/Acetic Acid/Acrylamide	Ignitable/Corrosive	D001/D002/F003
Waste Methanol/Acetic Acid/Colchicine	Ignitable/Corrosive	D001/D002/F003
Waste Methanol/Acetonitrile	Ignitable/Corrosive	D001/F003
Waste Methanol/Acetonitrile/Acetic Acid	Ignitable/Corrosive	D001/D002/F003
Waste Methanol/Acetonitrile/TEA	Ignitable	D001/F003
Waste Methanol/Acetonitrile/Tetrahydrofuran	Ignitable	D001/F003
Waste Methanol/Chloroform	Ignitable/Toxic	D001/D022/F003
Waste Methanol/Ethanol/Acetic Acid	Ignitable/Corrosive	D001/D002
Waste Methanol/Ethyl Ether	Ignitable	D001/F003
Waste Methanol/Methylene Chloride/Isopropanol	Ignitable/Toxic	D001/F002/F003
Waste Methanol/Methylene Chloride/Sulfuric Acid	Ignitable/Corrosive/Toxic	D001/D002/F002
Waste Methanol/Methylene Chloride/THF	Ignitable/Toxic	D001/F002/F003
Waste Methanol/Phenol/Catechol	Ignitable/Toxic	D001/F003
Waste Methanol/Phosphates	Ignitable	D001/F003
Waste Methanol/Phosphates/Acetone/Ethyl Acetate	Ignitable	D001/F003
Waste Methanol/Tetrahydrofuran	Ignitable	D001/F003
Waste Methoxy-Chlor 2EC	Toxic	D014
Waste Methyl Isobutyl Carbinol	Ignitable	D001
Waste Methyl Lithium	Reactive	D003
Waste Methyl Methacrylate	Ignitable	U162
Waste Methyl Nitrate	Ignitable	D001
Waste Methyl Orange Stain	Toxic	T
Waste Methyl Pentane	Ignitable	D001
Waste Methyl Sulfide (Dimethyl Sulfide)	Ignitable	D001
Waste Methylamine	Ignitable	D001
Waste Methylamine/Sodium Azide/Pump Oil/Glycerol	Ignitable/Toxic	D001
Waste Methylaminopropane	Ignitable	D001
Waste Methylcellosolve	Ignitable	D001
Waste Methylcellosolve/Toluene/Ethanolamine	Ignitable	D001/F005

BURIED WASTES MAY BE PRESENT IN BURIAL CELL AREAS A OR B
LETTER WASTE CODES INDICATE WASTE ITEM IS DEEMED HAZARDOUS BASED ON CHARACTERISTIC ONLY
C = CORROSIVE, I = IGNITABLE, R = REACTIVE, T = TOXIC

UNIVERSITY OF ARIZONA
PAGE TROWBRIDGE RANCH LANDFILL
INVENTORY OF BURIED WASTE CHEMICALS

Waste Methylcyclohexane	Ignitable	D001
Waste Methylene Chloride	Toxic	U080
Waste Methylene Chloride/Acetone/Ethyl Acetate/Alcohols	Ignitable/Toxic	D001/F002/F003
Waste Methylene Chloride/Acetone/Methanol/Ethanol	Ignitable/Toxic	D001/F002/F003
Waste Methylene Chloride/Alcohols	Ignitable/Toxic	D001/F002
Waste Methylene Chloride/DMSO/Acetic Acid/Alcohols	Ignitable/Toxic	D001/D002/F002
Waste Methylene Chloride/Dimethyl Formamide/ETOH	Ignitable/Toxic	D001/F002
Waste Methylene Chloride/ETOH/Ethyl Acetate/TEA	Ignitable/Toxic	D001/F002/F003
Waste Methylene Chloride/ETOH/MEOH/HCL/NaOH	Ignitable/Corrosive	D001/D002/F002/F003
Waste Methylene Chloride/Ethanol/Ethyl Acetate	Ignitable/Toxic	D001/F002/F003
Waste Methylene Chloride/Ethyl Acetate	Ignitable/Toxic	D001/F002/F003
Waste Methylene Chloride/Hexanes/MEOH	Ignitable/Toxic	D001/F002/F003
Waste Methylene Chloride/MEOH/Hexanes/To1uene	Ignitable/Toxic	D001/F002/F003/F005
Waste Methylene Chloride/Methanol/Hexanes	Ignitable/Toxic	D001/F002/F003
Waste Methylene Chloride/TFA/Ethanol	Ignitable/Toxic	D001/F002
Waste Methylene Chloride/THF/Dioxane/Ether/Ethyl Acetate	Ignitable/Toxic	D001/F002/F003
Waste Methylene Chloride/Trifluoroacetic Acid/Alcohols	Ignitable/Corrosive	D001/D002/F002
Waste Miticide	Toxic	T
Waste Monitor 4	Toxic	T
Waste Monoethanolamine	Ignitable	D001
Waste Morestan (Miticide) 25% Wetab1e Powder	Toxic	T
Waste Muriatic Acid	Corrosive	D002
Waste Myristic Acid	Corrosive	D002
Waste N-Acetyl-DL-Methionine	Toxic	T
Waste N-Butanol	Ignitable	U031
Waste N-Butanol/MEOH/Acetone/Benzene/Acetonitrile	Ignitable	D001/D018/F003
Waste N-Propano1	Ignitable	D001
Waste N-Serve 24	Toxic	T
Waste Nacconate-100	Toxic	T
Waste Naphthalene	Ignitable	U164
Waste Naphthylamine	Ignitable	D001
Waste Nematicide	Toxic	T
Waste Nematocide Solution 17.1	Toxic	T
Waste Nickel Standard	Toxic	T
Waste Nickel Sulfate	Toxic	T
Waste Nickel/Chromium/Nitric Acid (5%)	Corrosive/Toxic	D002/D007
Waste Ninhydrin-DMSO	Ignitable	D001
Waste Ninhydrin/Methylcellsolve/Dioxane	Ignitable	D001
Waste Nitric Acid	Ignitable/Corrosive	D001/D002
Waste Nitric Acid (50%)	Ignitable/Corrosive	D001/D002
Waste Nitric Acid/Hydrochloric Acid	Ignitable/Corrosive	D001/D002
Waste Nitroanthanilic Acid	Corrosive	D002

BURIED WASTES MAY BE PRESENT IN BURIAL CELL AREAS A OR B
LETTER WASTE CODES INDICATE WASTE ITEM IS DEEMED HAZARDOUS BASED ON CHARACTERISTIC ONLY
C = CORROSIVE, I = IGNITABLE, R = REACTIVE, T = TOXIC

UNIVERSITY OF ARIZONA
PAGE TROWBRIDGE RANCH LANDFILL
INVENTORY OF BURIED WASTE CHEMICALS

Waste Nitrobenzene	Ignitable	U169
Waste Nitrobenzoic Acid	Corrosive	D002
Waste Nitromethane	Ignitable	D001
Waste Nitrophenol	Ignitable	U170
Waste Nitrophenols	Ignitable	U170
Waste Nitrosoguanidine	Ignitable	D001
Waste Nitrotoluene	Ignitable	D001
Waste NU-Film-BT	Toxic	T
Waste Nynamite	Toxic	T
Waste o-Chlorophenol	Ignitable	U048
Waste Omnifluor Scintillation Fluid	Ignitable	D001
Waste Organic Solvent, NOS, Adhesive Release	Ignitable	D001
Waste Organics (solid)	Toxic	T
Waste Organa-Selenium Solution	Toxic	D010
Waste Osmium Tetraoxide	Toxic	P087
Waste Osmium Tetraoxide/Alcohol	Ignitable/Toxic	D001/P087
Waste Osmium Tetraoxide/Glutaraldehyde	Toxic	P087
Waste Osmium Tetraoxide/Methanol	Ignitable/Toxic	D001/F003/P087
Waste Osmium Tetraoxide/Spurr's Resin	Toxic	P087
Waste Outdated Drugs, NOS, Solid	Toxic	T
Waste Oxidizer, NOS, Liquid	Ignitable	D001
Waste Oxidizer, NOS or Oxidizing Material, NOS	Ignitable	D001
Waste Oxydipropionitrile	Ignitable	D001
Waste P-Toluene Sulfonic Acid	Corrosive	D002
Waste P-Toluenesulfonyl Chloride	Corrosive	D002
Waste PGP-I03	Toxic	T
Waste Paint Thinner	Ignitable	D001
Waste Paint, NOS, Liquid	Ignitable	D001
Waste Pair EM6	Toxic	T
Waste Palladium Chloride	Toxic	T
Waste Paraffin Oil	Ignitable	D001
Waste Paraformaldehyde	Ignitable	D001
Waste Paraquat	Toxic	T
Waste Parathion	Toxic	P089
Waste Parathion EC-46	Toxic	P089
Waste Paratox 3G	Toxic	T
Waste PenCap M	Toxic	T
Waste Pentafluorobenzoyl Chloride	Corrosive	D002
Waste Pentane	Ignitable	D001
Waste Pentanedione	Ignitable	D001
Waste Perchloric Acid	Ignitable/Corrosive	D001/D002
Waste Perchloric Acid (70%)	Ignitable/Corrosive	D001/D002

BURIED WASTES MAY BE PRESENT IN BURIAL CELL AREAS A OR B
LETTER WASTE CODES INDICATE WASTE ITEM IS DEEMED HAZARDOUS BASED ON CHARACTERISTIC ONLY

C = CORROSIVE, I = IGNITABLE, R = REACTIVE, T = TOXIC

UNIVERSITY OF ARIZONA
PAGE TROWBRIDGE RANCH LANDFILL
INVENTORY OF BURIED WASTE CHEMICALS

Waste Perchloric Acid (<50%)	Ignitable/Corrosive	D001/D002
Waste Perchloric Acid/Nitric Acid	Ignitable/Corrosive	D001/D002
Waste Pesticide Wash	Toxic	T
Waste Pesticide, Cygon	Toxic	T
Waste Pesticides, NOS	Toxic	T
Waste Petroleum Ether (Ligroine)	Ignitable	D001
Waste Petroleum Ether/Acetone/Methanol/Ethanol	Ignitable	D001/F003
Waste Petroleum Ether/Benzene (96:4)	Ignitable	D001/D018
Waste Phenol	Toxic	U188
Waste Phenol Red(Stain)	Ignitable	D001
Waste Phenol/Acetic Acid/Chromic Acid	Corrosive/Toxic	D002/D007
Waste Phenol/Catechol/Methylene Chloride	Ignitable/Toxic	D001/F002
Waste Phenol/Chloroform	Toxic	D022
Waste Phenol/Dimethylnitrosamine/N1trosoguanadine	Ignitable/Toxic	D001
Waste Phenol/Ethidium Bromide/Acetic Acid	Corrosive/Toxic	D002
Waste Phenol/Ethidium Bromide/Acrylamide	Toxic	T
Waste Phenol/Tannic Acid	Corrosive/Toxic	D002
Waste Phenolic Compounds	Toxic	T
Waste Phenolphthalein	Toxic	T
Waste Phenyl Isocyanate (Phenyl Carbylamine)	Ignitable	D001
Phenylhydrazine	Toxic	T
Waste Phenylmagnesium Bromide	Toxic	T
Waste Phosgene (Diphosgene)	Toxic	P095
Waste Phosgene/Benzene	Ignitable/Toxic	D018/P095
Waste Phosphoric Acid	Corrosive	D002
Waste Phosphorus Oxychloride	Corrosive	D002
Waste Phosphorus Pentachloride	Corrosive	D002
Waste Phosphorus Pentoxide	Corrosive	D002
Waste Phosuel 3EC	Toxic	T
Waste Photo Fixer	Corrosive/Toxic	D002/D011
Waste Photocopy Dispersant	Corrosive	D002
Waste Photographic Activator, NOS, Liquid	Corrosive	D002
Waste Photographic Chemicals, NOS, Liquid	Corrosive	D002
Waste Photographic Developer, Corrosive, Material, NOS	Corrosive	D002
Waste Photographic Stabilizer, NOS, Liquid	Corrosive	D002
Waste Phototypesetting Activator	Corrosive	D002
Waste Phototypesetting Stabilizer	Corrosive	D002
Waste Phthalic Acid	Corrosive	D002
Waste Phthalic Anhydride	Toxic	U190
Waste Piperidine	Corrosive	D002
Waste Poison B, Liquid, NOS	Toxic	T
Waste Poison B, NOS, Pesticide Wash, NOS, Liquid	Toxic	T

BURIED WASTES MAY BE PRESENT IN BURIAL CELL AREAS A OR B
LETTER WASTE CODES INDICATE WASTE ITEM IS DEEMED HAZARDOUS BASED ON CHARACTERISTIC ONLY
C = CORROSIVE, I = IGNITABLE, R = REACTIVE, T = TOXIC

UNIVERSITY OF ARIZONA
PAGE TROWBRIDGE RANCH LANDFILL
INVENTORY OF BURIED WASTE CHEMICALS

Waste Polyethylene Glycol	Ignitable	D001
Waste Polyphosphoric Acid	Corrosive	D002
Waste Potassium Chloride/Methanol/Acetic Acid	Ignitable/Corrosive	D001/D002/F003
Waste Potassium Cyanide	Toxic	P098
Waste Potassium Cyanide/Methanol/Chromium	Ignitable/Toxic	D001/D003/D007/F003
Waste Potassium Dichromate	Ignitable/Toxic	D001/D007
Waste Potassium Ferrocyanide	Toxic	T
Waste Potassium Hydride	Reactive	D003
Waste Potassium Hydroxide	Corrosive	D002
Waste Potassium Hydroxide/Isopropanol	Ignitable/Corrosive	D001/D002
Waste Potassium Permanganate	Ignitable	D001
Waste Potassium Permanganate/KOH	Ignitable/Corrosive	D001/D002
Waste Potassium Polysulfide/Potassium Thiosulfate	Toxic	T
Waste Pounce	Toxic	T
Waste Pramitol 2SE	Toxic	T
Waste Propane	Ignitable	D001
Waste Propane Su1tone/Tributyl Phospine	Toxic	T
Waste Propanediol	Ignitable	D001
Waste Propanedithiol	Ignitable	D001
Waste Propionic Acid	Corrosive	D002
Waste Propylene Oxide	Ignitable	D001
Waste Propylene Oxide Fixative	Ignitable	D001
Waste Propylene Oxicle/Dichloroethane/Alcohols	Ignitable	D001
Waste Propylene Oxide/ETOH	Ignitable	D001
Waste Propylene Oxide/ETOH/Acetone	Ignitable	D001
Waste Prowl Herbicide	Toxic	T
Waste Pump Oil	Ignitable	D001
Waste Pump Oil/Acetone	Ignitable	D001
Waste Pyridine	Ignitable	U191
Waste Pyridine/Chromium/Acetic Acid/THF	Ignitable/Toxic	D001/D002/D007/F005
Waste Pyridine/MEOH/Triethylamine	Ignitable	D001/F003
Waste Pyridine/Methylene Chloride/Chromium/DMF/THF/Dioxane	Ignitable/Toxic	D001/D007/F003/F005
Waste Pyridine/Petroleum Ether	Ignitable	D001/F005
Waste Pyrogallol(Pyrogallic Acid}	Ignitable	D001
Waste Pyrophosphate Pesticide (15%)	Toxic	T
Waste R-M Enamel Reducer	Ignitable	D001
Waste Racon Freon 1l	Toxic	F002
Waste Raney's Nickel (Nickel Catalyst)	Reactive	D003
Waste Resins	Ignitable	D001
Waste Resorcinol	Ignitable	U201
Waste Resorcylic Acid (Beta)	Toxic	T
Waste Ruelene 25E	Toxic	T

BURIED WASTES MAY BE PRESENT IN BURIAL CELL AREAS A OR B
LETTER WASTE CODES INDICATE WASTE ITEM IS DEEMED HAZARDOUS BASED ON CHARACTERISTIC ONLY
C = CORROSIVE, I = IGNITABLE, R = REACTIVE, T = TOXIC

UNIVERSITY OF ARIZONA
PAGE TROWBRIDGE RANCH LANDFILL
INVENTORY OF BURIED WASTE CHEMICALS

Waste S-Methyl Isothiourea Sulfate	Toxic	T
Waste Sarolex	Toxic	T
Waste Scintillation Cocktail, NOS	Ignitable	D001
Waste Scintillation Fluid/Chloroform/Mercury/Isopropanol	Ignitable/Toxic	D001/D009/D022
Waste Selenium Oxide	Toxic	D010
Waste Sencor (Herbicide) 50% Wettable Powder	Toxic	T
Waste Sevinol, 4	Toxic	T
Waste Shell Insecticide	Toxic	T
Waste Silane/Pentane	Ignitable/Reactive	D001/D003
Waste Silver Nitrate	Ignitable/Toxic	D001/D011
Waste Silver Nitrate/Xylene/Formalin	Ignitable/Toxic	D001/D011/F003
Waste Sinox General	Toxic	T
Waste Sodium (Metal)	Reactive	D003
Waste Sodium Acetate/THF/MEOH	Ignitable	D001/F003
Waste Sodium Azide	Toxic	P105
Waste Sodium Azide/HCl/KOH	Corrosive/Toxic	D002
Waste Sodium Bisulfate	Toxic	T
Waste Sodium Bisulfite	Toxic	T
Waste Sodium Dichromate	Ignitable/Toxic	D001/D007
Waste Sodium Hydrosulfite	Ignitable/Reactive	D001/D003
Waste Sodium Hydroxide	Corrosive	D002
Waste Sodium Hydroxide/Ethanol	Ignitable/Corrosive	D001/D002
Waste Sodium Hydroxide/Ether/Methylene Chloride	Ignitable/Corrosive/Toxic	D001/D002/F002
Waste Sodium Hypochlorite	Ignitable	D001
Waste Sodium Isothionale	Toxic	T
Waste Sodium N-Methyl-N-Oleoyltaurate	Toxic	T
Waste Sodium perchlorate	Ignitable/Reactive	D001/D003
Waste Sodium peroxide	Ignitable/Reactive	D001/D003
Waste Sodium Sulfide	Reactive	D003
Waste Sodium Thiosulfate	Toxic	T
Waste Sodium Tripolyphosphate	Toxic	T
Waste Sodium/THF	Ignitable/Reactive	D001/D003
Waste Spurr's Resin	Toxic	T
Waste Spurr's Resin/Propylene Oxide	Toxic	T
Waste Stannous Chloride (solid)	Toxic	T
Waste Styrene	Ignitable	D001
Waste Succinic Acid	Corrosive	D002
Waste Succinimide	Toxic	T
Waste Sulfamic Acid	Toxic	T
Waste Sulfur	Ignitable	D001
Waste Sulfur Dioxide	Toxic	T
Waste Sulfur Solution	Toxic	T

BURIED WASTES MAY BE PRESENT IN BURIAL CELL AREAS A OR B
LETTER WASTE CODES INDICATE WASTE ITEM IS DEEMED HAZARDOUS BASED ON CHARACTERISTIC ONLY
C = CORROSIVE, I = IGNITABLE, R = REACTIVE, T = TOXIC

UNIVERSITY OF ARIZONA
PAGE TROWBRIDGE RANCH LANDFILL
INVENTORY OF BURIED WASTE CHEMICALS

Waste Sulfuric Acid	Corrosive	D002
Waste Sulfuric Acid/Ammonium Persulfate	Ignitable/Corrosive	D001/D002
Waste Sulfuric Acid/Cotton Lint	Corrosive	D002
Waste Sulfuric Acid/Dimethyl Sulfate	Corrosive	D002
Waste Sulfuric Acid/Lanthanum Chloride (A.A. Waste)	Corrosive	D002
Waste Sulfuric Acid/Nitric Acid	Ignitable/Corrosive	D001/D002
Waste Sulfuric Acid/Potassium Chromate	Ignitable/Corrosive/Toxic	D001/D002/D007
Waste Sulfurous Acid	Corrosive	D002
Waste Sulfuryl Chloride	Corrosive	D002
Waste Supracide	Toxic	T
Wasee Supracide 2E	Toxic	T
Waste Surflan Herbicide, Liquid	Toxic	T
Waste TFA/Acetic Acid/Pyridine	Ignitable/Corrosive	D002/F005
Waste TFA/DMF/Dioxane	Ignitable/Corrosive	D001/D002
Waste TFA/Diisopropylethylamine/Methylene Chloride	Ignitable/Corrosive/Toxic	D001/D002/F002
Waste TFA/Ethanol/Methylene Chloride	Ignitable/Corrosive/Toxic	D001/D002/F002
Waste TFA/Methylene Chloride/DMF/Dioxane	Ignitable/Corrosive/Toxic	D001/D002/F002/F003
Waste TFA/Methylene Chloride/DMF/Ethyl Acetate	Ignitable/Corrosive/Toxic	D001/F002/F003
Waste TOK E-25	Toxic	T
Waste Temik	Toxic	T
Waste Temik 10G	Toxic	T
Waste Temik 15G	Toxic	T
Waste Temik TSX	Toxic	T
Waste Teremac Pesticide	Toxic	T
Waste Terephthalic Acid/Acetic Acid	Corrosive	D002
Waste Tert-Butyl Alcohol	Ignitable	D001
Waste Tert-Butyl Chloride	Ignitable	D001
Waste Tetrabromide	Toxic	T
Waste Tetrabromomethane	Toxic	T
Waste Tetraethyl Ammonium Bromide	Corrosive	D002
Waste Tetraethyl Ammonium Hydroxide	Corrosive	D002
Waste Tetrahydrofuran (THF)	Ignitable	U213
Waste Tetrahydrofuran/Acetonitrile/Chloroform	Ignitable/Toxic	D001/D022
Waste Tetrahydrofuran/Acetonitrile/MEOH/Ammonium Acetate	Ignitable/Toxic	D001/F003
Waste Tetrahydrofuran/Acetonitrile/Methanol	Ignitable	D001/F003
Waste Tetrahydrofuran/Methanol/Acetonitrile	Ignitable	D001/F003
Waste Tetrahydrofuran/Methylene Chloride	Ignitable/Toxic	D001/F002
Waste Tetrahydrofuran/Pyridine/Hexane/Methylene Chloride	Ignitable/Toxic	D001/F002/F005
Waste Tetramethylbenzidine	Ignitable	D001
Waste Tetramethylenesulfone	Toxic	T
Waste Theophylline	Toxic	T
Waste Thimersal/J-13	Toxic	T

BURIED WASTES MAY BE PRESENT IN BURIAL CELL AREAS A OR B
LETTER WASTE CODES INDICATE WASTE ITEM IS DEEMED HAZARDOUS BASED ON CHARACTERISTIC ONLY
C = CORROSIVE, I = IGNITABLE, R = REACTIVE, T = TOXIC

UNIVERSITY OF ARIZONA
PAGE TROWBRIDGE RANCH LANDFILL
INVENTORY OF BURIED WASTE CHEMICALS

Waste Thimet 600 (Insecticide)	Toxic	T
Waste Thloamyl Chloride/Toluene	Ignitable/Toxic	D001/F005
Waste Thiocyanate	Toxic	T
Waste Thionyl Chloride	Corrosive	D002
Waste Thionyl Chloride/ Carbon Tetrachloride	Corrosive/Toxic	D002/D019
Waste Toluene	Ignitable	U220
Waste Toluene Diisocyanate	Toxic	U223
Waste Toluene/Acetone	Ignitable	D001/F005
Waste Toluene/Acetonitrile/Methanol	Ignitable	D001/F003/F005
Waste Toluene/Formic Acid/Sulfuric Acid	Ignitable/Corrosive	D001/D002
Waste Toluene/MEOH/Propane	Ignitable	D001/F003/F005
Waste Toluene/TEA/Acetonitrile/Pump Oil	Ignitable	D001/F005
Waste Toluenediamine	Ignitable	U221
Waste Toluidine	Toxic	U328
Waste Toluidine (0)	Toxic	U328
Waste Toluol/(Triton X)	Ignitable	D001/F005
Waste Torbidan 28	Toxic	T
Waste Toxaphene 60	Toxic	D015
Waste Trichloroacetic Acid (TCA) (Liquid)	Corrosive	D002
Waste Trichloroacetic Acid (TCA) (Solid)	Corrosive	D002
Waste Trichloroacetic Acid/Alcohols/Acrylonitrile	Ignitable/Corrosive	D001/D002
Waste Trichloroacetic Acid/Hydrochloric Acid.	Corrosive	D002
Waste Trichloroacetic Acid/MEOH/ETOH	Ignitable/Corrosive	D001/D002/F003
Waste Trichloroacetic Acid/Perchloric Acid/Nitrates	Ignitable/Corrosive	D001/D002
Waste Trichloroacetonitrile .	Ignitable	D001
Waste Trichloroethane	Toxic	U226
Waste Trichloroethylene (TCE)	Toxic	U228
Waste Trichloroethylene/Carbon Tetrachloride	Toxic	D019/F002
Waste Trichloroethylene/Carbon Tetrachloride/DMN	Toxic	D019/F002
Waste Trichloroethylene/Chloroform	Toxic	D022/F002
Waste Trichloroethylene/Dichloroethylene	Toxic	F002
Waste Trichloroethylene/Kerosene/Isopropyl Alcohol	Ignitable/Toxic	D001/F002
Waste Tricine	Toxic	
Waste Triethanolamine	Ignitable	D001
Waste Triethyl O Formate	Ignitable	D001
Waste Triethylamine	Ignitable	D00
Waste Triethylamine/Toluene/Acetonitrile	Ignitable	D001/F005
Waste Triethylene Glycol	Ignitable	D001
Waste Triethylenetetramine (TETA)/Polyethylene Glycol	Ignitable	D001
Waste.Trifluoroacetic Acid (TFA)	Corrosive	D002
Waste Trifluorotrchloroethane(SAF T SOL)	Toxic	T
Waste Trimethyl Borate	Ignitable	D001

BURIED WASTES MAY BE PRESENT IN BURIAL CELL AREAS A OR B
LETTER WASTE CODES INDICATE WASTE ITEM IS DEEMED HAZARDOUS BASED ON CHARACTERISTIC ONLY
C = CORROSIVE, I = IGNITABLE, R = REACTIVE, T = TOXIC

UNIVERSITY OF ARIZONA
PAGE TROWBRIDGE RANCH LANDFILL
INVENTORY OF BURIED WASTE CHEMICALS

Waste Trimethylamine	Ignitable	D001
Waste Trimethylchlorosilane	Ignitable	D001
Waste Triphenylchloromethane	Ignitable	D001
Waste Tris-EDTA -	Toxic	T
Waste Tris-Hydroxymethylaminamethane	Ignitable	D001
Waste Triton X-100/Toluene/MEOH	Ignitable	D001/F003/F005
Waste Triton X/Toluene	Ignitable	F005
Waste Triton-X/Toluene/MEOH	Ignitable	D001/F003/F005
Waste Trizma Base	Toxic	T
Waste Turpentine	Ignitable	D001
Waste Uracil Hemihydrate	Toxic	T
Waste Uranyl Acetate/Lead Citrate/Glutaraldehyde	Toxic	D004
Waste Uranyl Acetate/Mercuric Chloride/Xylene/Acetone	Ignitable/Toxic	D001/F003/D009
Waste Urea (carbamide)	Toxic	T
Waste Urea Nitrogen Reagent	Toxic	T
Waste Vanadium Tetrachloride	Corrosive	D002
Waste Vapan	Toxic	T
Waste Vaponite (Pesticide)	Toxic	T
Waste Varsol	Toxic	T
Waste Vernam 6E (Herbicide)	Toxic	T
Waste Vinyl pyrrolidinone	Toxic	T
Waste Vorschit carcinogen	Toxic	T
Waste Wastewater Sludge (Tar Sand)	Toxic	T
Waste Weedar 64 (Broadleaf Herbicidel	Toxic	T
Waste X-Ray Developer	Corrosive	D002
Waste X-Ray Fixer	Corrosive/Toxic	D002/D011
Waste Xylene	Ignitable	U239
Waste Xylene/Acetic Acid/Methanol	Ignitable/Corrosive	D001/D002/F003
Waste Xylene/Acetone/Isopropanol	Ignitable	D001/F003
Waste Xylene/Acid Alcohol	Ignitable/Corrosive	D002/F003
Waste Xylene/Alcohol	Ignitable	D001/F003
Waste Xylene/Alcohol/Formalin .	Ignitable	D001/F003
Waste Xylene/Bouin's Solution/Ethanol/Isopropanol	Ignitable	D001/F003
Waste Xylene/Formaldehyde	Ignitable	D001/F003
Waste Xylene/Kerosene	Ignitable	D001/F003
Waste Xylene/Toluene	Ignitable	D001/F003/F005
Waste Zectran 2E	Toxic	T
Waste Zinc Amalgam	Toxic	T
Waste Zinc Chloride(Solid)	Toxic	T
Waste Zinc Chromate	Ignitable/Toxic	D001
Waste Zinc Sulfate	Toxic	T
Waste Zinc/Lead/Cadmium	Toxic	D006/D008

BURIED WASTES MAY BE PRESENT IN BURIAL CELL AREAS A OR B
LETTER WASTE CODES INDICATE WASTE ITEM IS DEEMED HAZARDOUS BASED ON CHARACTERISTIC ONLY
C = CORROSIVE, I = IGNITABLE, R = REACTIVE, T = TOXIC

UNIVERSITY OF ARIZONA
PAGE TROWBRIDGE RANCH LANDFILL
INVENTORY OF BURIED WASTE CHEMICALS

Waste a-Naphthyl Isocyanate	Toxic	T
Waste b-Hydroxybutyric Acid	Corrosive	D002
Waste n-Cycloberyl-beta-aniline	Ignitable	D002
Waste o-ToluidineiAcetic Acid	Corrosive/Toxic	D002
Waste p-Nitrobenzaldebyde	Toxic	T