



GRIFFON MINE HEAP LEACH FACILITY CLOSURE PLAN TECHNICAL SPECIFICATIONS

Prepared for:

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December 2000

U. S. Department of Agriculture
Forest Service - Region 4
Humboldt-Toiyabe National Forest

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GRIFFON MINE
HEAP LEACH FACILITY CLOSURE PROJECT

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SECTION 00015 - LIST OF DRAWINGS
GRIFFON MINE
HEAP LEACH FACILITY CLOSURE PROJECT

<u>Sheet</u>	<u>Drawing No.</u>	<u>Drawing Title</u>
1 of 9	131004-101	Project Location Map and List of Drawings
2 of 9	131004-102	Site Plan
3 of 9	131004-103	Heap Regrading Plan
4 of 9	131004-104	Conveyance Piping and Area Drainage Plan
5 of 9	131004-105	Evapotranspiration Basin Design
6 of 9	131004-106	Heap Outlet Details
7 of 9	131004-107	Miscellaneous Details
8 of 9	131004-108	Infiltration Distribution Details
9 of 9	131004-109	Infiltration System

The Drawings are provided at the end of the Contract document.

END OF SECTION 00015

SECTION 00020 - SCHEDULE OF ITEMS
GRIFFON MINE
HEAP LEACH FACILITY CLOSURE PROJECT

The SCHEDULE OF ITEMS is presented on the following two pages.

SCHEDULE OF ITEMS THE GRIFFON MINE HEAP LEACH FACILITY CLOSURE PROJECT						
ITEM NUMBER	DESCRIPTION	METHOD OF MEAS.	UNIT	QUANTITY	UNIT PRICE	TOTAL
Heap Regrading, Cover Placement, Revegetation, and Diversion Channel (Base Bid)						
00190	Mobilization	LSQ	JOB	1	XXXX	
02127	Regrading of Heap including Placement of Drain Rock Over Solution Pipe	DQ	BCY	133,000		
02223	Obtaining Select Borrow and Application on Regraded Heap	DQ	BCY	40,500		
02805	Recovering Topsoil and Application on Regraded Heap	DQ	BCY	40,500		
02801	Revegetation of Heap and Other Disturbed Areas	LSQ	JOB	1	XXXX	
01300	Submittals	LSQ	JOB	1	XXXX	
					Total	
Additional 12 Inches of Select Borrow Placed on Heap (Optional Bid Item)						
02223A	Obtaining Select Borrow and Application on Regraded Heap	DQ	BCY	40,500		
					Total	
Land Application of Process Fluids (Optional Bid Item)						
02531A	Land Application of Process Pond Fluids	AQ	gal	5,000,000		
					Total	

SCHEDULE OF ITEMS THE GRIFFON MINE HEAP LEACH FACILITY CLOSURE PROJECT						
ITEM NUMBER	DESCRIPTION	METHOD OF MEAS.	UNIT	QUANTITY	UNIT PRICE	TOTAL
Evapotranspiration Basins (Optional Bid Item)						
02201A	Conveyance Piping and Appurtenances Between Heap and ET Basins	LSQ	JOB	1	XXXX	
02219A	Evapotranspiration Basins	LSQ	JOB	1	XXXX	
02801A	Revegetation	LSQ	JOB	1	XXXX	
01300A	Submittals for Construction of ET Basins and Related Appurtenances	LSQ	JOB	1	XXXX	
					Total	
Subsurface Infiltration System (Optional Bid Item)						
02201B	Conveyance Piping and Appurtenances Between Distribution Manhole and Infiltration Area	LSQ	JOB	1	XXXX	
15303A	Infiltration Area for Heap Solution Disposal	LSQ	JOB	1	XXXX	
02700A	Fencing Infiltration Area	AQ	FT	2,000		
01300B	Submittals for Infiltration System Construction	LSQ	JOB	1	XXXX	
					Total	
Diversion Channel Construction and Stabilization (Optional Bid Item)						
02315A	Diversion Channel Construction and Stabilization	LSQ	JOB	1	XXXX	
					Total	
Heap Solution Monitoring (Optional Bid Item)						
01300C	Heap Solution Monitoring	LSQ	JOB	1	XXXX	
					Total	
Grand Total					\$	

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SECTION 00050 - PROJECT DESCRIPTION
GRIFFON MINE
HEAP LEACH FACILITY CLOSURE PROJECT

PART I – GENERAL

1.01 Scope of Contract

Griffon Mine is an abandoned cyanide heap leach facility located in White Pine County, Nevada on the Ely Ranger District (within Township 14 North, Range 58 East). This Contract shall consist of the Work in the Base Bid Item (Section 1.02) and, if awarded, any of the Optional Bid Items presented in Sections 1.03 – 1.07. A summary of the work scope components for each item is presented in the following Sections 1.02 – 1.07.

Services, materials and submittals to be provided by the Contractor as required by this Contract are summarized in this section, detailed in subsequent sections, quantified in the SCHEDULE OF ITEMS and depicted in the attached construction Drawing set of 9 sheets.

1.02 Regrade and Cover Heap (Base Bid Item)

The scope of work for the base bid Work is summarized as follows:

1. Mobilization and demobilization of all equipment, labor, supplies, and incidentals necessary to accomplish the Work (Section 00190).
2. Provide site maintenance, including provision of all temporary utilities (Section 01501).
3. Monitor the level of process fluid in the ponds during the Contract period (Section 01300).
4. Regrade the heap to the line and grade shown on the drawings (Section 02127).
5. Placement of a cover on the regraded heap. The cover consists of a layer of waste rock and a layer of Topsoil from sources on the site. The waste rock will require processing to meet the gradation specification (Sections 02223, 02805, 02801).
6. Construct a new diversion channel adjacent to the north edge of the heap (Section 02314).
7. Submission of project submittals as required (Section 01300).

1.03 Land Application of Process Fluid (Optional Bid Item)

The scope of work for this optional item of Work is summarized as follows:

1. Provide land application disposal of designated process fluid from either the heap, the process ponds, or both. The disposal shall be by sprinkler dispersal over an 11 acre designated area near the site (Section 02531A).

1.04 **Construction of Two Evapotranspiration (ET) Basins (Optional Bid Item)**

The scope of work for this optional item of Work is summarized as follows:

1. Provide and install the conveyance pipe and other appurtenances required to route the drainage from the heap to the ET basin (Section 02201A).
2. Construction of the ET basins consisting of backfilling the two existing ponds with specified soil materials, and providing and installing drainage piping, filter fabric, and other incidentals (Sections 02219A, 02801A).
3. Submission of project submittals as required (Section 01300A).

1.05 **Construction of an Infiltration System for Heap Drainage (Optional Bid Item)**

The scope of work for this optional item of Work is summarized as follows:

1. Provide and install the conveyance pipe and other appurtenances required to route the drainage from the heap to the infiltration trenches (Section 02201B).
2. Construction of the infiltration trenches including providing drainage piping and other incidentals. In addition, construction of fencing around each of the two infiltration trench areas (Sections 15303A, 02700A).
3. Submission of project submittals as required (Section 01300B).

1.06 **Stabilization of a Portion of the Existing East Diversion Channel (Optional Bid Item)**

Regrade the existing East Diversion Channel where required, and stabilize with revegetation procedures (Section 02315A).

1.07 **Heap Solution Monitoring (Optional Work Item)**

Periodically monitor and report the flow rate of solution from the heap. Periodically sample heap solution, submit for chemical analysis, and report the results (Section 01300C).

1.08 **Project Site Location and Description**

The Griffon Mine is located in White Pine County, Nevada, on National Forest Service (NFS) lands administered by the Ely Ranger District, Humboldt-Toiyabe National Forest (HTNF). The mine site is approximately 28 air-miles (39 surface miles) southwest of Ely, Nevada in T14N, R58E, Sections 13, 14, 23, 24, 25, 36, and T14N, R59E, Sections 18, 19, 21, 28, 29, 30, 31, 32, and 33. The property is accessed by traveling southwest from Ely on Highway 6 for approximately 26 miles, then turning west on Ellison Creek Road for nine miles to the Ellison Creek Ranger Station, and then traveling west and north of the ranger's station for another four miles.

Access to the site is via unmaintained roads passable to high clearance vehicles. Passenger cars are not advised. During wet weather the roads are slick and muddy and at times impassable.

1.09 **Measurement and Payment**

Methods of Measurement and payment for each item is listed in the SCHEDULE OF ITEMS. Descriptions of Methods of Measurement utilized in this Contract are listed in Section 00100.

PART II – PRODUCTS

2.01 **Regrade and Cover Heap (Base Bid Item)**

The Contractor shall provide all equipment, labor, specified materials, supplies, construction control, supervision, temporary utilities, and incidentals to accomplish the Work specified in Paragraph 1.02 of this Section.

The Contractor shall also be responsible for providing and maintaining all necessary utilities for Contract operations at the site. The Contractor must assure that the site is maintained in a safe, clean, and environmentally sound manner during the Contract period.

Under provisions of Section 01501 the Contractor shall monitor the level of process fluid in both ponds throughout the Contract period. The results of this monitoring shall be reported to the CO on a weekly basis or within 12 hours if either pond level rises to within 5 vertical feet of its crest.

Under provisions of Section 02127 the Contractor shall be responsible for regrading the heap to maximum sideslopes of 3H:1V and at least to the outer edge of the liner. The top of the heap shall be graded to form a heap top crown with a minimum 3 percent slope to provide positive runoff in all directions and eliminate ponding. If available, the current pond inventory shall be used for moisture conditioning and dust suppression during regrading.

As part of heap regrading, The Contractor shall be responsible for placing a layer of drain rock (crushed ore from the heap) above the existing 18-inch diameter perforated solution collection pipe in a portion of the heap perimeter ditch as SHOWN ON THE DRAWINGS. Prior to Drain Rock placement, sloughed ore must be removed and placed higher on the heap, or used as backfill elsewhere on the project where it meets the specification. Any removal and placement of sloughed ore shall be considered incidental to other work at the site.

Under provisions of Sections 02223 and 02805, the Contractor shall be responsible for processing, hauling and satisfactorily placing approved Select Borrow (waste rock) and Topsoil from approved sources in accordance with the specifications of the indicated Sections and in conformity with the lines and grades SHOWN ON THE DRAWINGS. As indicated in Sections 02223 and 02805, waste rock shall be placed on the regraded heap and Topsoil shall be placed on the regraded heap directly above the waste rock layer.

Under provisions of Section 02314 the Contractor shall construct a diversion channel immediately north of the heap as SHOWN ON THE DRAWINGS. The exact alignment of the channel shall be staked by the U.S.D.A. Forest Service.

Under provisions of Section 02801, the Contractor shall be responsible for seeding in designated areas using specified species, application rates and mixtures.

2.02 **Land Application of Process Pond Fluids (Optional Bid Item)**

Under provisions of Section 02531A, the Contractor shall be responsible for land application of fluids contained within the two ponds to within one foot of the pond bottom, land application of fluid discharging from the heap, or both for the Contract period. Land application shall be accomplished using sprinkler dispersion on the 11 acre site as SHOWN ON THE DRAWINGS.

The U.S.D.A. Forest Service makes no representation or guarantee as to the amount or drainage rate during the Contract period. However, the maximum pond capacities are 2,165,011 gallons for the working pond, and 2,603,997 gallons for the event pond as SHOWN ON THE DRAWINGS. In year 2000 the range of recorded fluid drainage rate from the heap was measured as 5.6-70 gpm, with the latter amount occurring after a rainfall event.

As part of this Contract, the Contractor shall also be responsible for removal of the land application system and reclamation of any disturbance to the area in accordance with the specifications indicated in Section 02531A.

2.03 **Construction of Two ET Basins (Optional Bid Item)**

Under provisions of Section 02201A, the Contractor shall be responsible for excavating, placement of specified pipe and concrete structures, and backfilling in accordance with the specifications of Section 02201A and details SHOWN ON THE DRAWINGS, to the lines and grades established.

In addition, the Contractor shall be responsible for performing a ground survey to verify pipe and drainage control facility locations and levels, as well as pipe grades between the heap and process ponds to ensure gravity flow will be established.

Under provisions of Section 02219A, the Contractor shall be responsible for backfilling the two process solution ponds with suitable materials including heap material, Drain Rock, Select Borrow and Topsoil in accordance with the specifications of Section 02219A and details, grades and lines SHOWN ON THE DRAWINGS.

As part of ET basin construction, the Contractor shall be responsible for placement of distribution piping in the backfilled material of the type specified in Section 02219A to the lines and grades SHOWN ON THE DRAWINGS.

In addition, the Contractor shall be responsible for performing a ground survey to verify material and pipe levels to ensure the intended drainage conditions will be established.

Under provisions of Section 02801A, the Contractor shall be responsible for seeding in designated areas using specified species, application rates and mixtures. A specific

species, mixture and rate formula shall be applied to areas disturbed for general construction, and a separate formula shall be applied at the ET basins.

2.04 **Construction of an Infiltration System for Heap Drainage (Optional Bid Item)**

Under provisions of Section 15303A, the Contractor shall be responsible for constructing a series of four infiltration trenches south of the process ponds as SHOWN ON THE DRAWINGS, to the lines and grades established.

Under provisions of Section 02201B, the Contractor shall be responsible for excavating, placement of specified pipe and filter fabric, and backfilling with Drain Rock and common fill as SHOWN ON THE DRAWINGS, to the lines and grades established. In addition, the Contractor shall be responsible for performing a ground survey to verify material and pipe levels to ensure the intended drainage conditions will be established.

Under provisions of Section 02700A, the Contractor shall be responsible for construction of a four-wire barbed wire fence around each of the infiltration trench pairs. In addition, the Contractor shall be responsible for reclamation of the disturbance caused by installation of the infiltration system.

2.05 **Revegetation (Seeding)**

Under provisions of Sections 02801, 02531A, 02201A, 02801A, 02201B, 15303A, and 02315A the Contractor shall be responsible for broadcast seeding in designated areas using specified species, application rates and mixtures. A specific species, mixture and rate formula shall be applied for the heap, drainfield and other disturbed areas, and a separate seed mix shall be applied at the ET basins.

2.06 **Stabilization of a Portion of the Existing East Diversion Channel (Optional Bid Item)**

Under provisions of Section 02315A, the Contractor shall be responsible for regrading erosion damaged portions of the approximately 2000 feet of the existing east diversion channel as SHOWN ON THE DRAWINGS. The U.S.D.A. Forest Service shall flag which portions of the channel require regrading to repair erosion damage. The regrading shall create a channel matching the line and grade of the adjacent undamaged channel. In addition, the Contractor shall be responsible for revegetation and erosion control for the entire approximate 2000 feet of channel.

2.07 **Heap Solution Monitoring (Optional Work Item)**

Under the provisions of Section 01300C, the Contractor shall be responsible for measuring heap solution outflow during construction. Heap outflow shall be measured on a weekly basis. One heap solution sample shall be collected and analyzed for NDEP Profile I constituents by a Nevada Certified laboratory each month or partial month during the Contract period for a minimum of four samples.

The heap solution flow results shall be produced in a legible hard copy format and shall be immediately submitted to the CO. The heap flow chemistry results shall be produced in a legible hard copy of the formal laboratory report, and shall be submitted to the CO

within 10 working days of the completion of the analysis as given on the formal laboratory report.

PART III – EXECUTION

3.01 Environmental and Safety Considerations

Rinsing and disposal of sludge and solutions from the Contractor's equipment will be allowed at the site with approval from the CO.

In the event suspected hazardous substances (as defined in 40CFR Parts 300-399) are discovered during the Contractor's operations, the Contractor immediately shall notify the CO.

3.02 All Other Products and Execution

Shall be in accordance with the following SPECIFICATIONS:

- 00100 - Measurement and Payment
- 00111 - Quality Control and Quantity Measurement
- 00190 - Mobilization
- 01501 - Use and Maintenance of On-Site Materials and Equipment, Temporary Utilities, and Clean-up and Disposal
- 02127 - Regrading of Heap Including Placement of Drainrock Over the Perforated Solution Collection Pipe
- 02223 - Select Borrow for Application on Regraded Heap
- 02805 - Topsoil for Application on Regraded Heap
- 02801 - Revegetation of Heap and Other Disturbed Areas
- 01300- Submittals
- 02531A - Land Application of Process Pond Fluids
- 02201A - Conveyance Piping and Appurtenances Between Heap and ET Basins
- 02219A - Evapotranspiration Basins
- 02801A- Revegetation (ET Basin Construction)
- 01300A- Submittals for Construction of ET Basins and Related Appurtenances
- 02201B- Conveyance Piping and Appurtenances Between Distribution Manhole and Infiltration Area
- 15303A- Infiltration Area for Heap Solution Disposal
- 02700A- Fencing Infiltration Area
- 01300B- Submittals for Infiltration System Construction
- 02315A- East Diversion Channel Stabilization
- 01300C- Heap Solution Monitoring

END OF SECTION 00050

U. S. Department of Agriculture
Forest Service - Region 4
Humboldt-Toiyabe National Forest

SECTION 00100 - MEASUREMENT AND PAYMENT

GRIFFON MINE
HEAP LEACH FACILITY CLOSURE PROJECT

PART I – GENERAL

1.01 **Measurement and Payment**

Measurement and payment for Contract work will be made only for and under those pay items included in the SCHEDULE OF ITEMS with designated units, quantities, and methods of measurement. All other work and materials will be considered as included in the payment for items shown.

1.02 **Units of Measurement**

Payment will be by units defined and determined according to U.S. Standard measure as follows:

- A. Gallon** – Metered volume. The metering system shall be calibrated and certified by a representative of the State agency responsible for weights and measures, a qualified manufacturer's representative, or an independent testing company. Upon certification the metering system shall be approved in writing by the Contracting Officer prior to use.
- B. Job** - One complete unit, which may consist of one or more parts.
- C. Feet** – Unit of length, depth or extent measurement utilized on DRAWINGS, SCHEDULE OF ITEMS, and within these specifications for length-dimensioned items.
- D. Bank Cubic Yard (BCY)** – Unit of volume utilized on DRAWINGS, SCHEDULE OF ITEMS, and within these specifications for placed volume-dimensioned items.

1.03 **Methods of Measurement**

One of the following methods of measurement for determining final payment is DESIGNATED on the SCHEDULE OF ITEMS for each pay item:

- A. Actual Quantities (AQ)** - These quantities are determined from measurements of completed Work.
- B. Lump Sum Quantities (LSQ)** - These quantities denote one complete unit of Work as required by or described in the Contract, including necessary materials, equipment, and labor to complete the job. They will not be measured.
- C. Design Quantities (DQ)** – These quantities denote the final number of units to be paid for under the terms of the contract. They are based upon the original design data

available prior to advertising the project. Original design data include the preliminary survey information, design assumptions, calculations, drawings, and the presentation of the Contract. Changes in the number of units SHOWN in the SCHEDULE OF ITEMS may be authorized under any of the following conditions:

1. As a result of changes in the Work authorized by the Contracting Officer.
2. As a result of the Contracting Officer determining that errors exist in the original design data used to determine designed quantities such that it causes a pay item to change by 15 percent or more.
3. As a result of the Contractor submitting to the Contracting Officer a written request showing evidence of errors in the original design data used to determine design quantities that cause a pay item total to change by 15 percent or more. The evidence must be verifiable and consist of calculations, drawings, or other data that show how the design quantity is believed to be in error.

PART II – PRODUCTS (Not Applicable)

PART III – EXECUTION (Not Applicable)

END OF SECTION 00100

U. S. Department of Agriculture
Forest Service - Region 4
Humboldt-Toiyabe National Forest

SECTION 00111 - QUALITY CONTROL AND QUANTITY MEASUREMENT

GRIFFON MINE
HEAP LEACH FACILITY CLOSURE PROJECT

PART I – GENERAL

1.01 Description

This Work shall consist of providing quality control to ensure compliance with the SPECIFICATIONS and provisions of the Contract, and measuring the quantities of completed Work in conformance with the provisions of the applicable SPECIFICATIONS. The Contractor shall provide all personnel, equipment, tests, and reports necessary to meet the requirements of this specification.

1.02 Basis of Payment

The accepted quantities will be paid for at the Contract unit price for each pay item shown in the SCHEDULE OF ITEMS. Otherwise, quality control and quantity measurement shall be incidental to other specified Work.

PART II – PRODUCTS (Not Applicable)

PART III – EXECUTION

3.01 Quality Control System and Quantity Measurement

The Contractor shall provide and maintain a quality control system that will ensure that all services required under this Contract conform to the Contract requirements. The Contractor shall perform, or cause to be performed, the sampling, inspection, and testing required to substantiate that all services conform to the Contract requirements.

The Contractor shall also perform, or cause to be performed, all measurement of quantities to be measured under the provisions of the Contract.

3.02 Sampling, Testing, Inspection, and Measurement of Quantities

The Contractor shall provide and maintain appropriate measuring and testing devices, equipment, and supplies to accomplish the required measurement, testing, and inspection in a timely manner. Tests, measurements, and certifications shall be made as required by the SPECIFICATIONS. The Contractor shall take samples and perform inspections and tests necessary to achieve the quality of services required by the Contract and make required measurements of Work under this Contract performed onsite.

Where indicated in the SPECIFICATIONS, as-built surveys shall be completed to determine exact final grades, dimensions and locations of subject facilities as indicated in Section 01300.

3.03 **Measurements**

The Contractor shall make all measurements for computation of quantities for all Work items specified for payment by Actual Quantity (AQ). The Contractor shall compute the quantities for periodic progress payments. All Contractor measurements are subject to verification. The Contractor shall submit all field notes, calculation sheets, and other data used to determine quantities to the Contracting Officer at the end of each week during the Contract period. The Contractor shall certify in writing as to the accuracy of the measurements and computations submitted.

END OF SECTION 00111

U. S. Department of Agriculture
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SECTION 00190 - MOBILIZATION

GRIFFON MINE
HEAP LEACH FACILITY CLOSURE PROJECT

PART I – GENERAL

1.01 Mobilization

This item is intended to compensate the Contractor for operations including, but not limited to, those necessary for the movement of personnel, equipment, supplies, and incidentals to the project site; for payment of premiums for bonds and insurance for the project; and for any other Work and operations which must be performed or costs that must be incurred incident to the initiation of meaningful work at the site and for which payment is not otherwise provided for under the Contract.

1.02 Method of Measurement

The measurement shall be lump sum for mobilization.

1.03 Basis of Payment

The lump sum price shall include full compensation for mobilization. Progress payments for mobilization will be made as follows:

- A. The total amount of premiums paid by the Contractor to obtain performance and payment bonds will be paid at one time together with the first progress payment otherwise due.
- B. When 5 percent of the total original Contract amount is earned from other schedule items, 50 percent of the amount bid for mobilization will be paid, exclusive of any amount already paid the Contractor for performance and payment bond premiums.
- C. When 10 percent of the total original Contract amount is earned from other schedule items, the balance of the amount bid for mobilization will be paid.

Progress payments for mobilization and preparatory work shall be subject to retainage.

PART II – PRODUCTS (Not Applicable)

PART III – EXECUTION (Not Applicable)

END OF SECTION 00190

U. S. Department of Agriculture
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Humboldt-Toiyabe National Forest

**SECTION 01501 - USE AND MAINTENANCE OF ON-SITE MATERIALS AND
EQUIPMENT, TEMPORARY UTILITIES, AND CLEAN-UP AND DISPOSAL**

GRIFFON MINE
HEAP LEACH FACILITY CLOSURE PROJECT

PART I – GENERAL

1.01 Description

This item shall consist of use and maintenance of on-site materials and equipment, temporary utilities, and cleanup and disposal.

1.02 Basis of Payment

Payment for this work will be incidental to the work indicated in the SCHEDULE OF ITEMS.

PART II - PRODUCTS (Not Applicable)

PART III – EXECUTION

3.01 Use and Maintenance of On-Site Materials and Equipment

There are materials and equipment on the site that are not the property of the U.S.D.A. Forest Service. Unless use of on-site materials or equipment is specifically allowed in the Specifications, the Contractor shall determine the owner of the materials or equipment, obtain written permission for use of the materials or equipment, obtain the approval of the CO for use of the materials or equipment, and furnish a copy such written permission to the CO. The Contractor shall use all such materials or equipment at his own risk. The U.S.D.A. Forest Service does not guarantee the condition or quality of any such materials or equipment.

The Contractor shall be required to clean all equipment prior to use on the project. This cleaning shall remove all dirt, plant parts, and material that could carry noxious weed seeds. All equipment must be inspected and approved in writing by the CO prior to the use of such equipment on site. Cleaning must occur off National Forest System lands. This requirement does not apply to service vehicles and vehicles used for transportation to and from the project site.

3.02 Temporary Utilities

The Contractor shall be responsible to provide all utilities required by the Work during the Contract period. Sanitary facilities are not available at the site. It shall be the

Contractor’s responsibility to furnish temporary sanitary facilities for the workers, the CO, and other representatives of the U.S.D.A Forest Service. The Contracting Officer will approve such facilities.

The Contractor shall be responsible for providing any telephone service deemed necessary for the duration of the Contract.

The Government will make an area in the vicinity of the worksite available for use as a storage area.

3.03 Cleanup and Disposal

The Contractor shall keep the work area free from accumulation of waste materials and rubbish resulting from the Work. All materials brought to the site by the Contractor shall be removed from the site and disposed of by the Contractor in accordance with all local, State, and Federal laws. The Contractor shall remove all such equipment and materials brought to the site for execution of this Contract prior to final acceptance of the project by the Contracting Officer.

The Contractor is responsible for maintenance of all haul roads. The Contractor shall provide grading to return the road surface to grade and restore drainage features as approved by CO.

3.04 Pond Level Monitoring

The Contractor shall monitor and maintain a record of the process fluid level in both ponds throughout the Contract period. Pond level readings shall be taken daily throughout the Contract period and legibly recorded in the format presented in this Section. A legible copy of the monitoring record shall be delivered to the CO on a weekly basis, or within 12 hours should either pond rise to within 5 feet of its crest.

Project _____ Contract No. _____				
Date	Time	Working Pond (feet below crest)	Event Pond (feet below crest)	Initials of Person Responsible for Measurement

END OF SECTION 01501

U. S. Department of Agriculture
Forest Service - Region 4
Humboldt-Toiyabe National Forest

**SECTION 02127 - REGRADING OF HEAP INCLUDING PLACEMENT OF
DRAINROCK OVER THE PERFORATED SOLUTION COLLECTION PIPE**

GRIFFON MINE
HEAP LEACH FACILITY CLOSURE PROJECT

PART I – GENERAL

1.01 **Description**

This item shall consist of regrading the heap in conformity with the lines, grades and locations as SHOWN ON THE DRAWINGS, and installing select drain rock above the existing perforated solution pipe in the solution collection ditch as SHOWN ON THE DRAWING.

1.02 **Method of Measurement**

The quantity of cut-to-fill heap regrading to be measured shall be based on the DQ indicated in the SCHEDULE OF ITEMS.

The following items shall be considered incidental to the heap regrading work:

1. Placement of Drain Rock above the existing 18 inch perforated solution collection pipe.

PART II – PRODUCTS

2.01 **Drain Rock**

Drain Rock shall be a non-plastic, durable rock material conforming to the following gradation as determined by ASTM C136 and ASTM C117:

DRAIN ROCK GRADATION

<u>Sieve Designation</u> <u>Square Openings</u>	<u>Percentage by</u> <u>Weight Passing Sieve</u>
1 ½ inch	100
¾ inch	85-100
No. 4	50-75
No. 200	0-10

It may be possible to obtain material meeting this specification from the crushed ore in the lower lift(s) of the heap immediately adjacent to the solution collection pipe. However, it is the Contractor's responsibility to locate and provide appropriate drain rock for the project.

All locations for obtaining Drain Rock on site shall be approved by the CO. Any reject material from production of Drain Rock shall be disposed of as approved by the CO.

PART III – EXECUTION

3.01 Drain Rock Installation

The Drain Rock shall be installed above the 18 inch perforated solution collection as SHOWN ON THE DRAWINGS at the specified minimum thickness. In addition, the Drain Rock shall be placed such that a minimum of 18 inches of Drain Rock shall be between all liner within the solution collection ditch and the regraded heap material as SHOWN ON THE DRAWINGS.

Prior to installation, heap material not meeting the specification for Drain Rock within the placement zone shall be removed and placed either on the heap or utilized at the discretion of the Contractor for other project components for which it meets specification.

3.02 Heap Regrading

The 24.4-acre heap shall be regraded to side slopes no steeper than 3H:1V and to cover all liner, including the solution ditch and its outboard slope, with a minimum of 3 feet of regraded material. Regrading shall be done after Drain Rock has been placed over the collection pipe in the heap toe ditch as SHOWN ON THE DRAWINGS. Final configuration of the heap slopes shall approximate the slopes depicted on the sections as SHOWN ON THE DRAWINGS. All regraded slopes and the heap top shall be free of all channels or other features that may pond or concentrate water. Care shall be exercised to ensure the pipe has a minimum of 36 inches of regraded heap material (including drain rock) above and adjacent to it prior to allowing heavy earthmoving equipment to travel over pipe. Limit traffic over pipe to minimize any potential for structural damage. The Contractor shall repair or replace any solution piping that is damaged during Contract operations.

The top of the heap shall be graded with a minimum 3 percent slope to provide positive runoff in all directions and eliminate ponding as SHOWN ON THE DRAWINGS. If available, the current pond inventory shall be used for moisture-conditioning and dust suppression during regrading.

The regraded heap shall be approved in writing by the CO prior to placement of cover material.

3.03 Pipe and Miscellaneous Material Removal

There may be pipe or other miscellaneous material on the heap surface, in the solution control ditch, or within the footprint of the regraded heap. The Contractor shall be responsible for removing such items from the heap area as approved by the CO, and placing them in the debris stockpile(s) as SHOWN ON THE DRAWINGS or as directed by the CO. Disposal of the pipe shall be done in accordance with and superseded by Optional Bid Item Section 15303A, Paragraph 2.08 should this Optional Bid Item be awarded.

3.04 **Cleanup**

Following the work, the work area shall be cleaned up and dressed to present a workmanlike appearance. All debris not originating from the site and unutilized material shall be removed from the site in accordance with Section 01501, Paragraph 3.03.

All work areas, including excess material stockpiles, shall be regraded to blend with the existing contour of the surrounding area, provide positive drainage away from the area, and be revegetated in accordance with Section 02801.

END OF SECTION 02127

U. S. Department of Agriculture
Forest Service - Region 4
Humboldt-Toiyabe National Forest

SECTION 02223 - SELECT BORROW FOR APPLICATION ON REGRADED HEAP

GRIFFON MINE
HEAP LEACH FACILITY CLOSURE PROJECT

PART I – GENERAL

1.01 Description

This item shall consist of excavating, processing, hauling and placing of approved material from an approved source AS SHOWN ON THE DRAWINGS in accordance with these specifications and in conformity with the lines and grades AS SHOWN ON THE DRAWINGS. This item shall also consist of regrading of the borrow area.

Select borrow shall be placed atop the regraded heap to construct the basal layer of the soil infiltration cover.

Item 02223 in the Schedule of Items calls for a final cover thickness of 12 inches of Select Borrow. Should the optional bid item 02223A be awarded an additional thickness of 12 inches shall be required for a total final cover thickness of 24 inches of Select Borrow.

1.02 Method of Measurement

The quantity of Select Borrow to be measured shall be based on the DQ indicated in the SCHEDULE OF ITEMS.

PART II – PRODUCTS

2.01 General

Select borrow shall be obtained from the designated borrow source as SHOWN ON THE DRAWINGS (northern end of Waste Dump 2) and approved by the CO as meeting the requirements for which the material was intended. Granular materials shall be reasonably well graded. The minimum final compacted thickness of borrow to be placed shall be 12 inches. If optional item 02223A is awarded, it shall be 24 inches.

2.02 Gradation and Processing

Select borrow shall be produced from the designated source as SHOWN ON THE DRAWINGS (northern end of Waste Dump 2) and processed to meet the following gradation determined by ASTM C136 and ASTM C117:

SELECT BORROW GRADATION

<u>Sieve Designation</u> <u>Square Openings</u>	<u>Percentage by</u> <u>Weight Passing Sieve</u>
3 inch	100
No. 4	55 – 75
No. 40	20 – 40
No. 200	> 10

The oversize material shall be placed in the designated oversize stockpile adjacent to the processing area as SHOWN ON THE DRAWINGS.

2.03 Source

The Select Borrow shall be obtained from the designated source (northern end of Waste Dump 2) located approximately one mile north of the heap using an existing haul road as SHOWN ON THE DRAWINGS.

PART III – EXECUTION

3.01 Placing and Compaction of Material

Borrow material shall be placed in uniform layers no greater than 16-inches in thickness (loose measurement). Each layer shall be relatively leveled before starting the next.

Each layer of borrow shall be moistened or dried to a uniform moisture prior to compaction. If available, the current pond solution inventory shall be used for moisture conditioning.

Each layer shall be compacted to 90 percent of maximum dry density as measured by ASTM D1557.

The Contractor shall monitor compaction and submit the results of testing in accordance with Section 1300, Paragraph 3.03.

3.02 Operations and Cleanup

Prior to beginning the borrow excavation, all necessary clearing and grubbing on the area shall be performed and debris disposed of in the designated debris stockpile. It is anticipated that negligible clearing and grubbing will be required and that borrow will be excavated by cutting into the bench and lower slope of the waste rock dump area (designated borrow source) as SHOWN ON THE DRAWINGS.

Any unsuitable material, other spoils or overburden material, shall be removed and deposited clear of the Work including the areas for borrow processing and oversize stockpiling.

The final slope of the borrow area shall be left so that it is no steeper than the pre-existing slope and approximately matches the slope and contours of the adjacent area. Borrow area reclamation shall also include roughly grading the overburden, unsuitable and spoils material over the area as directed by the CO.

Following the work, the work area shall be cleaned up and dressed to present a workmanlike appearance. All debris not originating from the site and unutilized material shall be removed from the site in accordance with Section 01501, Paragraph 3.03.

END OF SECTION 02223

U. S. Department of Agriculture
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SECTION 02805 - TOPSOIL FOR APPLICATION ON REGRADED HEAP

GRIFFON MINE
HEAP LEACH FACILITY CLOSURE PROJECT

PART I – GENERAL

1.01 Description

This item shall consist of loading, hauling, and spreading Topsoil stockpiled as SHOWN ON THE DRAWINGS.

1.02 Method of Measurement

The quantity of Topsoil to be measured shall be based on the DQ indicated in the SCHEDULE OF ITEMS.

Oversize and unsuitable materials in the Topsoil stockpiles shall be removed and placed in debris stockpile areas as SHOWN ON THE DRAWINGS or as approved by the CO. This work shall be deemed incidental as part of Topsoil hauling and spreading.

PART II – PRODUCTS

2.01 Topsoil

Topsoil shall be obtained from the designated stockpiles on the project site as SHOWN ON THE DRAWINGS. Topsoil shall be free of roots, sod, rock particles over 6 inches in greatest dimension, and other debris. Topsoil shall be used from stockpiles in the following order:

<u>Order of Use</u>	<u>Stockpiles</u>
1	TS-1 & TS-2
2	TS-3
3	TS-4

The Contractor shall completely use all Topsoil in a stockpile before using material from another stockpile. Use of Topsoil from any stockpile other than TS-1 & TS-2 shall only be done with written approval from the CO.

PART III – execution

3.01 Recovering Topsoil

Clear the area for Topsoil recovery of all debris and place in the designated debris stockpile as SHOWN ON THE DRAWINGS or as approved by the CO. Topsoil shall be

recovered to approximately original ground surface or to the depth directed by the Contracting Officer.

3.02 **Spreading**

Loosely and uniformly spread Topsoil to the minimum depth on the designated areas as SHOWN ON THE DRAWINGS. Spreading shall not be done when the Topsoil is frozen, or when the ground or Topsoil is excessively wet, or otherwise in a condition detrimental to the Work. Based on estimated quantities, it is anticipated that enough Topsoil exists from the two Topsoil stockpiles ($\pm 54,000$ BCY) to spread the designated minimum thickness on the heap ($\pm 40,300$ BCY).

3.03 **Erosion Control**

As the final work in the Topsoil application, rip, disk, or harrow along contour on the side slopes of the heap. The purpose is to breakup any down slope flow channels that may concentrate runoff and cause erosion between the completion of Topsoil application and the revegetation of the closed heap. Disking or harrowing shall be with a maximum spacing of 10 feet between passes. Ripping shall be done with sufficient passes with a ripper-equipped bulldozer to result in ripper tooth pathways no greater than 36 inches apart. All ripping, disking, or harrowing shall be to a depth of 6-8 inches. In the event that Drain Rock is disturbed during erosion control activities, the Topsoil shall be removed from the disturbed area, the Drain Rock layer repaired, and the Topsoil layer restored.

3.04 **Finish, Cleanup and Reclamation**

Remove roots, sod, and other debris from the topsoiled surfaces and place in the designated debris stockpile. At the completion of Topsoil application, regrade stockpile areas to provide positive runoff, rip final regraded surfaces to a depth of 6 inches, and reseed (refer to the heap revegetation requirements of Section 02801). Following the work, the work area shall be cleaned up and dressed to present a workmanlike appearance. All debris not originating from the site and unutilized material shall be removed from the site in accordance with Section 01501, Paragraph 3.03.

END OF SECTION 02805

U. S. Department of Agriculture
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SECTION 02801 - REVEGETATION OF HEAP AND OTHER DISTURBED AREAS

GRIFFON MINE
HEAP LEACH FACILITY CLOSURE PROJECT

PART I PART I – GENERAL

1.01 Description

This item shall consist of broadcast seeding or other method approved by the Contracting Officer in designated areas using specified species seed mixtures and mulch.

The Contractor shall be responsible for revegetating the regraded heap, the disturbed Topsoil stockpile areas, and other disturbed areas with the specified species.

1.02 Method of Measurement

Measurement shall be based on LSQ as shown in the SCHEDULE OF ITEMS.

PART II – PRODUCTS

2.01 Seed for the Heap, Disturbed Topsoil Stockpile, and Other Areas

The Contractor shall be responsible for seeding the approximate 25 acres of heap, plus the disturbed topsoil and other disturbances pursuant to the specifications and with the seed mix presented below:

- A.** All seeding equipment shall be pressure-washed prior to arriving on the project site to eliminate contamination by chemical fertilizers and/or undesirable plant species.
- B.** Seeded areas shall be planted using a broadcast seeder that is capable of accommodating a range of seed sizes. Seed shall be applied between October 1 and November 30.
- C.** After seed has been applied to the area, a harrow blanket, or other implement approved by the CO, will be passed over the ground in such a way that the seed is covered by soil that has proper seed-to-soil contact for favorable germination.
- D.** Seed shall conform to applicable State of Nevada Seed Laws or Acts.
- E.** Seed shall be certified as free of seeds designated as noxious by the Forest Service and/or the State of Nevada.
- F.** At least 14 calendar days prior to seeding, seed suppliers' labels shall be obtained that containing the following information:
 - plant species

- species variety (when applicable)
- origin, date of harvest
- lot number
- name and address of seed company
- percentages of purity
- germination rates
- inert materials
- non-noxious weed seed
- noxious weed seed

The labels shall be provided to the CO for inspection prior to seed application.

G. The seed mix and application rates (expressed as pounds of Pure Live Seed (lbs. PLS) per acres of surface area) for the heap, associated Topsoil stockpiles and other disturbed areas are provided as follows:

Heap, Topsoil Stockpile, and Other Disturbed Area Revegetation Seed Mix

Common Name	Scientific Name	Lbs. PLS/Acre*
Grasses		
Mountain Brome	<i>Bromus marginatus</i>	2
Slender Wheatgrass	<i>Agropyron trachycaulum</i>	4
Thickspike Wheatgrass	<i>Agropyron dasystachyum</i>	3
Bluebunch Wheatgrass	<i>Agropyron spicatum</i>	3
Indian Ricegrass	<i>Oryzopsis hymenoides</i>	3
Forbs		
Western Yarrow	<i>Achelles milliform</i>	1/4
Small Burnet	<i>Sanguisorba minor</i>	3
Palmer Penstemon	<i>Penstemon Palmari</i>	1
Shrubs		
Bitterbrush	<i>Purshia tridentata</i>	4
Mountain Snowberry	<i>Symphoricarpos oreophilus</i>	3
TOTAL		26.25 lbs. PLS/ac

* PLS = Pure Live Seed.

PART III - EXECUTION

3.01 General

The specified seed mixture shall be uniformly applied on the designated areas that have received Topsoil to the density in pounds of live seed per acre as specified. Prior to mulching and after seeding, a harrow blanket, or other implement approved by the CO, will be passed over the ground in such a way that the seed is covered by soil and has proper seed-to-soil contact for favorable germination ($\frac{1}{4}$ and $\frac{1}{2}$ inch deep).

Prior to seeding the Topsoil shall be lightly ripped or scarified on contour to loosen the soil 6 inches deep prior to seeding. No seeding shall be performed during windy weather or when the ground is excessively wet or deeply frozen.

Seeding shall be performed in the fall (October 1 through November 30), or as approved in writing by the CO.

3.02 Preparation of Seeding Areas

Cut slopes, fill slopes, embankments or other areas to be seeded shall be shaped and finished as specified under the Sections involved. All areas shall then be raked, lightly ripped, or otherwise worked on contour such that the surface is loose to a depth of 6 inches. Each area shall be approved for seeding by the Contracting Officer before seed is applied.

3.03 Seeding

The seed or seed mixtures shall be accurately proportioned as stipulated and thoroughly mixed. They shall be remixed as necessary so that a uniform mixture will result as each loading of the specified seeder is made.

The seed is to be incorporated to a depth of no less than $\frac{1}{4}$ inch and no more than $\frac{1}{2}$ inch below the ground surface by dragging the area with a harrow blanket or other approved equipment. Seed shall be broadcast seeded at rates specified in Table 1. All portions of the areas to be seeded shall be uniformly covered to the required densities.

3.04 Mulching

Following application of the appropriate seed mix, the Contractor shall supply, place and crimp a minimum of 2.0 tons of alfalfa hay per acre of reseeded area or mulch alternative as approved by the CO. The mulch shall be weed free, with documentation supporting such. Mulching shall not take place when wind velocities exceed 15 mph.

Crimping shall be accomplished with a crimper with serrated disk blades spaced at 4 – 8 inches, and capable of pressing the mulch to an average depth of 2 inches below the soil surface, or other equipment capable of achieving the same results as approved by the CO. Crimping shall be performed in two perpendicular passes, with the final pass being along contour. Crimping shall be performed as soon as possible following placement of the mulch.

3.05 **Cleanup**

Following the work, the work area shall be cleaned up and dressed to present a workmanlike appearance. All debris not originating from the site and unutilized material shall be removed from the site in accordance with Section 01501, Paragraph 3.03.

END OF SECTION 02801

U. S. Department of Agriculture
Forest Service - Region 4
Humboldt-Toiyabe National Forest

SECTION 02314 - DIVERSION CHANNEL CONSTRUCTION

GRIFFON MINE
HEAP LEACH FACILITY CLOSURE PROJECT

PART I – GENERAL

1.01 Description

This section covers the contractor's responsibility relating to construction of a new diversion channel immediately north of the heap and stabilization of a portion of the East Diversion Channel as SHOWN ON THE DRAWINGS. The exact alignment of the new channel shall be staked by the U.S.D.A. Forest Service. The new channel shall be revegetated. All new diversion channel will have erosion control matting installed.

1.02 Method of Measurement

Payment for this work will be incidental to the work indicated in the SCHEDULE OF ITEMS.

PART II – PRODUCTS

2.01 Seed Mix

The Contractor shall seed the new and stabilized channels with the following seed mix. The seed mix and application rates (expressed as pounds of Pure Live Seed (lbs. PLS) per acres of surface area).

Channel Revegetation Seed Mix

Common Name	Scientific Name	Lbs. PLS/Acre*
Grasses		
Mountain Brome	<i>Bromus marginatus</i>	2
Slender Wheatgrass	<i>Agropyron trachycaulum</i>	4
Thickspike Wheatgrass	<i>Agropyron dasystachyum</i>	3
Bluebunch Wheatgrass	<i>Agropyron spicatum</i>	3
Indian Ricegrass	<i>Oryzopsis hymenoides</i>	3
Forbs		
Western Yarrow	<i>Achelles milliform</i>	1/4
Small Burnet	<i>Sanguisorba minor</i>	3
Palmer Penstemon	<i>Penstemon Palmari</i>	1
TOTAL		19.25 lbs. PLS/ac

* PLS = Pure Live Seed.

2.02 Erosion Control Matting

The erosion control matting shall be Kaul Corporation Regular Excelsior (R-1) - Erosion Control Blanket or equivalent approved by the Contracting Officer.

PART III – EXECUTION

3.01 New Channel Construction

The Contractor shall construct the new diversion channel immediately north of the heap leach pad as SHOWN ON THE DRAWINGS. The exact alignment of the new channel shall be staked and approved by the U.S.D.A. Forest Service. The Contractor shall construct the channel to provide drainage away from the entire north edge of the heap to the existing diversion channels as approved by the CO.

3.02 Revegetation

The Contractor shall seed the channels with the methods in accordance with the specifications for disturbed areas in Section 02801.

3.03 Erosion Control Matting

Following the seeding, the Contractor shall install erosion control matting in accordance with the manufacturer's recommendations and as approved by the CO.

3.04 Cleanup

Following the work, the work area shall be cleaned up and dressed to present a workmanlike appearance. All debris and unutilized material shall be removed from the site in accordance with Section 01501, Paragraph 3.03.

END OF SECTION 02314

U. S. Department of Agriculture
Forest Service - Region 4
Humboldt-Toiyabe National Forest

SECTION 01300 - SUBMITTALS

GRIFFON MINE
HEAP LEACH FACILITY CLOSURE PROJECT

PART I – GENERAL

1.01 Description

This section covers the contractor’s responsibility relating to all submittals, test data, and as-built survey drawings that relate to the construction of the Work.

1.02 Method of Measurement

Measurement will be based on LSQ as indicated in the SCHEDULE OF ITEMS.

PART II – PRODUCTS

2.01 General

Products shall consist of written results and survey drawings as indicated in various sections requiring such documentation including information required of this section.

PART III – EXECUTION

3.01 All Submittals

It will be the Contractor’s responsibility to submit all items with such promptness as to cause no delay in the Work.

3.02 Soil Material Testing

The Contractor shall submit soil gradation test results as determined by ASTM C136 and ASTM C117 as follows:

SOIL MATERIAL	TEST INTERVAL
Drain Rock	3/Job
Select Borrow	4,000 BCY
Topsoil	8,000 BCY

The Contractor shall submit soil moisture/density test results as determined by ASTM D1557 (modified Proctor) as follows:

SOIL MATERIAL	TEST INTERVAL
Select Borrow	10,000 BCY or whenever there is a change in soil conditions

3.03 **Select Borrow Compaction and Moisture Testing**

The Contractor shall submit the results of a minimum of four (4) nuclear densometer/moisture tests per acre of placed Select Borrow (ASTM D2922). The tests shall be spaced such that no more than two tests are within any one acre of heap cover. For the purposes of testing, an acre shall be a square approximately 200 feet on a side, and no acres shall overlap. Test locations shall be randomly distributed within the acres.

3.04 **Pond Level Monitoring**

The Contractor shall monitor and maintain a record of the process fluid level in both ponds throughout the Contract period. Pond level readings shall be taken daily throughout the Contract period and legibly recorded in the format presented in Section 01501. A legible copy of the monitoring record shall be delivered to the CO on a weekly basis, or within 12 hours should either pond rise to within 5 feet of its crest.

3.05 **As-Built Survey Drawings**

In order to document and verify completion of the Work in accordance with the Contract drawings, the following as-built surveys and corresponding drawings are required to be completed by the Contractor. All contours shall be 2-foot maximum and pipe invert elevations shall be indicated in hundredths at 10-foot maximum lineal intervals.

- A. Final topography of regraded heap surface
- B. Location and elevation of drainage outlet pipe invert (including type, and size of pipe).
- C. Final topography of Select Borrow surface of heap cover.
- D. Final topography of Topsoil surface of heap cover.
- E. Final alignment of the new diversion ditch with elevation taken every 20 feet to an accuracy of 0.02 feet.

All drawings shall be submitted in hard copy and electronic format (AutoCAD or approved alternative) to the CO for review and approval prior to Contractor demobilization. All variations from the Contract drawings shall be indicated in red on the drawings.

END OF SECTION 01300

U. S. Department of Agriculture
Forest Service - Region 4
Humboldt-Toiyabe National Forest

**SECTION 02531A - LAND APPLICATION OF PROCESS POND FLUIDS (OPTIONAL
BID ITEM)**

GRIFFON MINE
HEAP LEACH FACILITY CLOSURE PROJECT

PART I – GENERAL

1.01 Description

This item shall consist of land application of process pond fluids contained within the solution ponds SHOWN ON THE DRAWINGS. Such land application shall occur within the designated area as SHOWN ON THE DRAWINGS.

1.02 Method of Measurement

The quantity to be measured shall be the total number gallons of process pond fluids land applied as provided in this section. This shall be measured as prescribed in Section 00100.

- A. Measurement and Payment for application shall be paid on an Actual Quantity (AQ) basis,
- B. Submittals shall be incidental to the Work.

PART II – PRODUCTS

2.01 Potential Fluid Amount

The U.S.D.A. Forest Service cannot predict the amount of process fluid that may be contained in the process pond or flowing from the heap during the Contract period. However, for the Contractor's convenience the total pond storage volumes and heap flow information measured during year 2000 are as follows:

- A. Working Pond Maximum Capacity** – 2,165,011 gallons
- B. Event Pond Maximum Capacity** – 2,603,997 gallons
- C. Maximum Heap Outflow (Year 2000)** - Early Spring 2000 estimates of flow rate from the heap leach pad were on the order of 800 to 1,000 gallons per minute (gpm) entering the solution ponds. Average flow rates for the period from August 13 through November 18, 2000 were on the order of 26 gpm, and ranged from 5.6 to 70 gpm, with the high end occurring shortly after a small precipitation event. It should be noted that the heap at its present configuration appears to be highly permeable and flow from the heap mimics the precipitation and snowmelt conditions. While historic

data suggests that the site is subject to annual precipitation in excess of 20 inches, precipitation since the cessation of operations in January 2000 precipitation has been below average. During this period solution was being recirculated to the heap.

2.02 Solution Distribution Components

The Contractor shall be responsible for installation, operation, maintenance, and removal of a land application system that removes all process fluid from the process ponds and disperses within the designated land application area as SHOWN ON THE DRAWINGS. Materials for the land application system shall conform to the following specifications:

- A. Conveyance Piping** – Pressure pipe of any suitable material, type, or grade may be used providing it has a maximum working pressure as rated by the manufacturer of three times the maximum working pressure of the land application system. Used pipe shall be allowed as inspected and approved by the CO prior to installation. All used conveyance pipe shall be continually observed by the Contractor for leakage for the initial 8 hours of its operation or as approved by the CO.
- B. Fittings and Couplings** – All pipe fittings and couplings shall be compatible with the pipe for which they are used and meet the same working pressure specification. Used fittings and couplings shall be allowed as inspected and approved by the CO prior to installation. All used fittings and couplings shall be continually observed by the Contractor for leakage for the initial 8 hours of their operation or as approved by the CO.
- C. Pumps** – Suitable pumps may be used to withdraw fluid from the ponds, transfer it to the land application area, and provide operating pressure for the system.
- D. Flow Control Valves** – Suitable inline ball-type flow valves shall be installed within the system to control flow to parts of the land application system. Used valves shall be allowed as inspected and approved by the CO prior to installation. All used valves shall be continually observed by the Contractor for leakage for the initial 8 hours of their operation or as approved by the CO.
- E. Distribution Sprinklers** – Sprinklers shall be full circle, plastic impact sprinkler type with $\frac{3}{4}$ -inch diameter male NPT plastic bearing manufactured by RainBird (Product No. L46025) provided with five plastic vaned straight bore nozzles (5/32-inch, 11/64-inch, 3/16-inch, 13/64-inch, and 7/32-inch) to adjust flow as necessary, or alternative above-ground solution distribution devices as approved by the CO. The sprinklers shall have a minimum trajectory angle of 23°, operating range of 45-80 psi, flow rate of 5.0-11.7 gpm, and dispersion radius of 47-62 feet. Used sprinklers shall be allowed as inspected by the CO prior to installation. All used sprinklers shall be continually observed for proper operation by the Contractor for the initial 1 hour of their operation or as approved by the CO.
- F. Drain Valves** – System drain valves shall be ball-type valves suitable for sustaining a minimum of 3 times the maximum system working pressure and functioning without leakage. Used valves shall be allowed as inspected and approved by the CO prior to installation. All used valves shall be continually observed by the Contractor for leakage for the initial 8 hours of their operation or as approved by the CO.

G. Flow Meter – An inline totalizing flow meter shall be installed such as to measure all flow through the land application system. The meter shall be compatible material with the piping and couplings, be able to indicate volume in gallons and be certified by a representative of the State agency responsible for weights and measures. The meter shall be able to provide accurate measurement under both full flow and less than full flow pipe conditions. Both the meter and the primary system control valve shall be installed in either a concrete or plastic box on the ground surface for protection. The location shall be within or adjacent to the land application area as SHOWN ON THE DRAWINGS.

2.03 Land Application Area Application Information

The maximum application rate for soil infiltration within the infiltration area is 0.125 gallons/ft²/day. Evapotranspiration and other site conditions may allow routine or episodic application at a greater rate.

PART III – EXECUTION

3.01 Process Fluid Management and Containment

The Contractor shall be responsible for managing all fluid draining from the heap, or contained within either of the ponds throughout the Contract time period. At no time during the Contract time period shall the Contractor allow process fluid outside of the containment of the heap, process ponds, or the fluid flow pathways between them unless specifically in accordance with the Plans and Specifications or with the written approval of the CO. The Contractor must assure that the site is maintained in a safe and environmentally sound manner during the Contract period.

3.02 Land Application of Process Pond Fluids

Land application shall commence within one week after issuance of the notice to proceed and shall continue until there is no more than one vertical foot of remaining process pond fluids in each pond as measured from the lowest point of each pond's liner. In no case shall any pond sludge be discharged.

An approximate area of 11 acres south of the pond area is designated for fluid disposal using impact sprinklers, which shall be provided, installed and operated by the Contractor. No equipment or material shall be placed below the ground surface. Land application shall be achieved via a network of distribution piping placed on the ground surface. The distribution piping shall be connected to vertical riser pipes to be 3 feet in height supporting individual impact sprinkler heads. Each sprinkler and riser pipe shall be securely braced to maintain the riser pipe in a vertical alignment. A pump shall be used at the solution delivery pipe inlet in the existing process ponds to initiate withdrawal of process fluid. Booster pumps and siphoning are allowed. Any alternative land application system shall be approved in writing by the CO.

Land application conveyance and distribution piping shall be secured against movement. The land application piping shall be provided with protection from damage at all road crossings.

The routing of all conveyance piping shall be approved by the CO. Vehicle access to install and remove the land application system shall be minimized. All vehicle access off of established roads shall be approved by the CO.

Care shall be exercised to minimize surface disturbance in the land application area by limiting access to personnel required for fluid management. Removal of any vegetation shall be kept to a minimum. Vegetation shall be removed by cutting or pruning as necessary to lay out the sprinkler distribution system. Removal of vegetation by digging or pulling is not allowed.

3.03 Land Application System and Rate

Land application shall be conducted within the area of approximately 11 acres as SHOWN ON THE DRAWINGS with sprinklers attached to a leak-proof distribution system. Overlap of the sprinkler sprays shall be minimized as determined by the CO. The sprinklers shall be placed at a minimum spacing of 100 feet unless approved by the CO. Land application equipment and procedures shall be utilized that minimize leaking of process pond fluids and clogging of equipment as determined by the CO. The system shall include a series of manually operated valves to allow the area of application to be varied throughout the application period. The Contractor is responsible to conduct land application of process fluids in such a way as to allow completion of the Contract within the prescribed time period.

The Contractor shall not land apply fluid at a rate greater than 0.125 gallons/ft²/day without approval from the CO. Regardless of the given application rate, fluid shall not be applied such that overland runoff or ponding occurs. The CO shall judge whether or not overland runoff or ponding is present.

3.04 Land Application Constraints

The Contractor shall notify the Contracting Officer 48 hours prior to commencement of land application of process pond fluids.

Land application of process pond fluids shall be conducted at the rate prescribed above during daylight hours. In the event overland runoff or ponding occurs from the land application, it shall be adjusted to eliminate such runoff or ponding. Daily visual inspections shall be made throughout the day to evaluate surface runoff or ponding, and to inspect for system operational problems and leaks. If an area of the application site exhibits evidence of ponding or saturation, application to that area will cease until the condition no longer exists. If the system exhibits an operational problem or fluid leakage application to an area, use of that area shall immediately cease until it is repaired.

In addition, land application of process pond fluids shall cease during measurable precipitation events, if air temperature is at or below freezing, or if the soil is frozen.

Land application overspray onto or above the roads adjacent to the land application area is not allowed.

Mobile equipment shall not be allowed in the land application area when the ground is wet.

with the land application system. Access for removal shall subject to the same constraints as access for installation.

3.07 **Finish, Clean-up, and Reclamation**

The Contractor shall keep the work area free from accumulation of waste materials and rubbish resulting from the Work. All materials brought to the site by the Contractor shall be removed from the site and disposed of by the Contractor in accordance with all local, State, and Federal laws. The Contractor shall remove all such equipment and materials brought to the site for execution of this Contract prior to final acceptance of the project by the Contracting Officer. All debris and rubbish not originating from the site and unutilized material shall be removed from the site in accordance with Section 01501, Paragraph 3.03.

The Contractor shall rip all roads created for the installation of land application system (except for pre-existing roads) at a ripper spacing of no less than 18 inches and a depth of no less than 6 inches and reseed with the seed mix, mulch and seeding methods used for the heap (Section 02801).

END OF SECTION 02531A

U. S. Department of Agriculture
Forest Service - Region 4
Humboldt-Toiyabe National Forest

**SECTION 02201A - CONVEYANCE PIPING AND APPURTENANCES BETWEEN
HEAP AND ET BASINS (OPTIONAL BID ITEM)**

GRIFFON MINE
HEAP LEACH FACILITY CLOSURE PROJECT

PART I – GENERAL

1.01 Description

This item shall consist of supplying, excavating, installing, and backfilling for conveyance pipes and appurtenances between the heap leach facilities and the ET basins in accordance with these specifications and details, lines and grades as SHOWN ON THE DRAWINGS. This specification covers excavation, safety, shoring and protection, installation of pipe, manhole, pipe bedding, common fill, structural fill, compaction of backfill, trench resurfacing, finishing and area cleanup.

1.02 Method of Measurement

Measurement for this Work shall be based on the LSQ as indicated in the SCHEDULE OF ITEMS.

The following items will be considered incidental to the Work:

1. All trenching for installation of pipe and appurtenances.

PART II – PRODUCTS

2.01 Pipe Bedding and Structural Fill

Pipe bedding and structural fill material shall consist of material meeting specifications for Drain Rock (Section 02127, Paragraph 2.01).

The material shall be free of any organic impurities, clay lumps or unstable substances.

2.02 Common Fill

Common fill shall be free from brush, perishable material, trash, rocks, or boulders larger than 6 inches in greatest dimension, or frozen material.

This material shall be obtained from the trench or drainage facility excavation whenever it meets specification requirements. If, after all suitable excavated material has been used as backfill, the trench is not filled to the required grade as SHOWN ON THE DRAWINGS, the Contractor shall utilize heap material or other soil material approved by

the CO to backfill excavations required.

2.03 **Topsoil**

Topsoil shall be salvaged to a depth of 12 inches from all areas disturbed by excavation for piping and drainage facility installation and stockpiled nearby for redistribution at the same location.

2.04 **Conveyance Piping**

Piping and fittings shall be of the type, class and size (nominal diameter) SHOWN ON THE DRAWINGS or listed in the SCHEDULE OF ITEMS. These materials shall conform to the following applicable specifications:

- A. Polyvinyl Chloride (PVC) Pipe and Fittings** – Polyvinyl chloride (PVC) pipe and fittings shall be Schedule 40 and conform to the requirements set forth in ASTM Designations D1785, D2672, D 3139, F405, and F477. Pipe shall be of 4-inch nominal diameter. Pipe will have integral bell connectors and shall be provided with elastomeric gaskets. All other fittings shall have elastomeric gaskets or be threaded.
- B. Smooth Interior Corrugated Polyethylene (PE) Plastic Pipe and Fittings** – Corrugated polyethylene (PE) plastic pipe and fittings shall conform to the requirements set forth in AASHTO Designations M252 and M294. The pipes shall be of 8-inch nominal diameter referred to as N-12 and manufactured by Advanced Drainage Systems, Inc. (ADS) or an approved alternative. Jointing will consist of ADS N-12 ProLink Ultra, ADS Series 35 Sanitary Fittings, or other methods recommended by the manufacturer and approved by the CO. All connections will be watertight. All pipe will be solid with no perforations. Fittings and pipe used to connect the existing solution collection pipe to the distribution manhole inlet pipe shall be 8- to 18-inch nominal diameter.
- C. Seals** – Seals used to connect piping with the distribution manhole, dosing tank, and distribution boxes shall be A-Lok® as provided and installed by Jensen Precast or approved alternative to ensure a positive, watertight seal.
- D. Manual Control Valve** – The manual control valve shall consist of PVC Tru Bloc Union NIBCO 4 inch nominal diameter ball valve using threaded Sch. 80 PVC pipe ends or approved alternative.

2.05 **Distribution Manhole**

The distribution manhole shall consist of 48-inch I.D. x 5-inch wall prefabricated concrete manhole components manufactured by Jensen Precast in accordance with ASTM C478 or an approved alternative. The cover assembly shall be a 24-inch diameter lid compatible with the distribution manhole as SHOWN ON THE DRAWINGS as manufactured by Jensen Precast or an approved alternative.

2.06 **Pond Liner Boot Connection**

Inlet pipes conveyed through the two process pond sidewalls as SHOWN ON THE DRAWINGS shall be made with a geosynthetic boot compatible with the liner,

extrusion-welded to the liner, and mechanically attached to the pipe as SHOWN ON THE DRAWINGS. The welds and mechanical attachment shall be carefully inspected to ensure a watertight seal.

PART III – EXECUTION

3.01 Trench Excavation

All trench excavation shall conform, as near as possible, to the lines as SHOWN ON THE DRAWINGS.

- A. Classification of Excavation Material** - Excavation will be unclassified as to materials and shall include all materials that are encountered in the required excavation.
- B. Unsatisfactory Material** – During excavation, if material which does not meet the backfill requirements of Paragraph 2.02 (such as structurally unstable material, solid rock, over-sized rock, angular or sharp rock), as determined by the Contracting Officer, is encountered at the gradeline for the pipe, which will not permit proper bedding of the pipe or precast concrete unit, the unsatisfactory material shall be removed to a minimum depth of 6 inches below the utility line.
- C. Trenching by Machine or by Hand** - The use of trench digging machines will be permitted, except in places where machines may cause damage to existing structures or utilities, in which case, hand methods shall be employed. Machines shall be of the proper size to operate within the specified working limits.
- D. Depth** – Trench excavation shall be such as to provide a uniform flow line (for all pipelines) to ensure gravity drainage.
- E. Width of Trenches** – The minimum width of trenches indicated on the DRAWINGS shall be adhered to; any overexcavation (width) performed by the Contractor for his convenience shall be at his own expense.
- F. Alignment and Grade** – The location of all pipelines and structures will be staked out and grades established by the Contractor before excavation is started. All trenches shall conform with the lines and grades illustrated on the drawings or staked on the ground. The Contractor shall set batter boards or equivalent to establish grade lines and levels necessary for the Work from dimensions and elevations shown on the drawings. Any shifting or change from the specified alignment and grade must receive prior approval by the Contracting Officer in writing. The Contractor shall perform and document the necessary survey to ensure that the minimum grades and indicated levels, and drainage conditions are met as SHOWN ON THE DRAWINGS.

3.02 Safety, Shoring, and Protection

The Contractor shall meet the provisions of the Occupational Safety and Health Administration (OSHA), including but not limited to 29 CFR Part 1926.650-.652 Subpart P. Walls of trenches, 4 feet or more in depth, shall be supported by bracing, shoring, or other methods, unless the sides of the trench are sloped to a safe angle, from the bottom of the trench or from the top edge of a steel cage when same is used. If trenches are shored, the trench shall be of proper width to accommodate shoring and bracing, as

required, to keep trench walls from caving, and to allow for proper installation of the Work.

All supports shall be removed after construction is completed and shall be withdrawn in a manner that will prevent the caving of the sides of the excavation. All openings in the ground, caused by the removal of supports shall be filled with suitable material properly compacted.

3.03 **Removal of Water**

The Contractor shall provide and maintain, at all times during construction, ample means and devices with which to promptly remove and properly dispose of all water entering the excavations or other parts of the Work. All excavations shall be kept free from standing water. Any damage caused by water in the trench shall be repaired by the Contractor at his expense.

3.04 **Pipe, Fitting, and Appurtenance Installation**

The Contractor shall be responsible for installing the drainage piping, fittings, and appurtenances to the line and grade as SHOWN ON THE DRAWINGS. Pipe bedding material shall be fully placed under the haunch of the pipe throughout its entire length. All pipe shall be installed in accordance with the manufacturer's recommendations. All pipe joints and fittings shall be securely joined in accordance with the manufacturer's recommendations. All longitudinal and horizontal pipe bends shall be accomplished within the pipe manufacturer's recommended tolerances or utilize fittings and adjusted pipe section lengths to achieve the required tolerance.

All pipe, fitting, and appurtenance connections shall be made in accordance with the manufacturer's recommendations, and shall be watertight.

The manual control valve shall be installed according to manufacturer's recommendations. In addition, it shall be installed in a pre-cast concrete meter box with lid for physical and frost protection.

3.05 **Bedding and Backfill Operations**

Following trench and precast concrete unit excavation to the specified locations and grades, the minimum bedding and structural fill thickness shall be placed at the bases of trenches and the precast concrete unit excavations. Additional bedding placement and backfilling will be permitted only after all inspections of piping and the precast concrete unit have been performed and tests completed, when required, and the Work to be covered has been approved by the Contracting Officer. Bedding, structural fill, and backfill, which has been improperly placed and/or compacted, shall be corrected, if directed by the Contracting Officer, by reopening the trench to the depth required to obtain proper compaction. Then the trench shall be refilled and compacted according to specifications.

A. Pipe Bedding and Structural Fill – The bottom of trenches and the manhole base shall be accurately graded to provide uniform bearing and support for the manhole and each section of the pipe along its entire length, except for portions of the pipe sections where it is necessary to excavate for pipe joints.

Depressions for joints shall be made in accordance with the recommendations of the manufacturers for the particular joint used. The bedding or structural fill shall conform to the minimum depths as SHOWN ON THE DRAWINGS. Trench and excavation bottom preparation shall be such that when final placement of pipe and precast concrete units have been made, they will be true to line and grade as SHOWN ON THE DRAWINGS. All adjustment to line and grade shall be made by scraping away or filling in with pipe bedding or structural fill material, as conditions dictate, and not by wedging or blocking.

After pipe is placed, pipe bedding shall be deposited in the trench uniformly on both sides of the pipe for the full width of the trench in 6-inch horizontal layers (loose measurement) and compacted from the bottom of the trench to a depth of at least 6 inches over the top of the pipe. All particles larger than 2-inches in size shall be removed from bedding and structural fill during placement.

B. Common Fill – Trench- and manhole-excavated material shall be used whenever it meets the specification indicated in Paragraph 2.02, placed in 8-inch maximum loose lifts and thoroughly compacted.

C. Placement and Compaction – Both materials A and B above shall be moistened or dried to a uniform moisture content suitable for maximum compaction and then compacted with at least three passes of an approved mechanical compaction device approved by the CO.

3.06 **Waste Material Disposal**

Any excess excavated material shall be spread out and graded uniformly across the Work area, followed by inspection and approval by the Contracting Officer.

3.07 **Topsoil**

Topsoil shall be loosely redistributed over the disturbed area after construction as SHOWN ON THE DRAWINGS. Topsoil shall be reseeded as directed in these specifications.

3.08 **Finishing and Cleanup**

After the pipeline installation and bedding and backfill placement have been completed, the disturbed area along the pipeline routes shall be finish graded to present as near a natural appearance as possible and cleaned up by removing all debris and materials not utilized. Following the work, the work area shall be cleaned up and dressed to present a workmanlike appearance. All debris not originating from the site and unutilized material shall be removed from the site in accordance with Section 01501, Paragraph 3.03.

END OF SECTION 02201A

U. S. Department of Agriculture
Forest Service - Region 4
Humboldt-Toiyabe National Forest

SECTION 02219A - EVAPOTRANSPIRATION BASINS (OPTIONAL BID ITEM)

GRIFFON MINE
HEAP LEACH FACILITY CLOSURE PROJECT

PART I – GENERAL

1.01 Description

This item shall consist of conversion of the two process ponds to evapotranspiration basins by backfilling with heap material, select Drain Rock, Select Borrow, and Topsoil. A network of drainage pipes shall be placed in the Drain Rock layer for evaporative disposal of heap solution. These components shall be provided for in accordance with these specifications and details SHOWN ON THE DRAWINGS, to the lines and grades established. This specification includes backfilling, pipe installation, final surface grading, and finish and area cleanup.

1.02 Method of Measurement

Measurement will be based on LSQ as indicated in the SCHEDULE OF ITEMS.

PART II – PRODUCTS

2.01 Backfill Materials

Materials used to backfill the ponds shall consist of the following:

- A. Heap Material** – This material is unclassified soil material located on the heap and provides the base layer of the ponds. It shall be obtained from locations approved by the CO.
- B. Drain Rock** – This material shall meet the specification for Drain Rock in Section 02127, Paragraph 2.01.
- C. Select Borrow** – This material shall meet the specification for Select Borrow in Section 02223.
- D. Topsoil** – This material shall meet the specification for Topsoil in Section 02805.

2.02 Drainage Pipe and Piezometer

Piping and fittings shall be of the type, class and size (nominal diameter) SHOWN ON THE DRAWINGS. These materials shall conform to the following applicable specifications:

- A. Corrugated Polyethylene (PE) Single-Wall Perforated Plastic Pipe and Fittings –** Corrugated polyethylene (PE) plastic pipe and fittings shall conform to the requirements set forth in ASTM F405. The pipe shall be of 4-inch nominal diameter referred to as single wall and manufactured by Advanced Drainage Systems, Inc. (ADS) or and approved alternative. The fittings shall consist either of single wall snap couplers (ADS Part No. 0412-AA), internal snap couplers (ADS Part No. 0415-AA), or single wall split couplers (ADS Part No. 0411-AA) or approved alternative. 4-inch diameter tees shall be used as indicated on the drawings and consist of single-wall snap tees (ADS Part No.0421-AA), single-wall tap tees (ADS Part No.0450-AA) or approved alternative. End caps shall be installed at all open ends of 4-inch diameter pipe as SHOWN ON THE DRAWINGS and consist of a snap end cap (ADS Part No. 0432-AA) or approved alternative.
- B. Perforations for Single-Wall Perforated Plastic Pipe –** All single-wall perforated pipe shall be provided with standard perforations in accordance with applicable sections of ASTM F405 and consist of the CD perforation configuration as provided by ADS or an approved alternative.
- C. Piezometer –** A piezometer composed of Schedule 40 PVC piping as SHOWN ON THE DRAWINGS shall be constructed for placement in each pond during backfill operations and completed with a securely installed lockable metal vault at final topsoil surface grade for protection.

2.03 **Filter Fabric**

Filter fabric shall be a nonwoven needle-punched geotextile fabric No. 4000 as manufactured by Advanced Drainage Systems, Inc. (ADS), or an approved equal. The fabric shall have a minimum grab tensile strength of 90 pounds, a typical grab elongation of 55 percent, and a minimum puncture strength of 55 pounds.

2.04 **Pond Sludge**

The pond sludge is an unclassified material and it is the Contractor's responsibility to determine the depth, amount, and method for disposal, if necessary, to construct the ET basins.

2.05 **Pond Debris**

Debris in the pond is an unclassified material and it is the Contractor's responsibility to determine the amount of debris in the basins.

PART III – EXECUTION

3.01 **General**

Following removal of all heap solution by land application activities, any debris, and any excess sludge, the two ponds shall be backfilled with heap material as SHOWN ON THE DRAWINGS.

The vertical piezometer shall be placed in each pond as SHOWN ON THE DRAWINGS with support and protection to be employed as necessary during backfill operations.

Following final grading of the heap material layer, the network of piping shall then be laid out, and then a 3-foot layer of Drain Rock shall be placed followed by filter fabric placement, Select Borrow, and Topsoil application to the lines and grades as SHOWN ON THE DRAWINGS.

3.02 **Debris Removal**

The Contractor shall remove all debris from the ponds and place it in the debris stockpile as SHOWN ON THE DRAWINGS, and as directed by the CO. Debris removal shall be accomplished by a method selected by the Contractor that does not compromise the integrity of the liner, with approval of the CO.

3.03 **Pond Sludge**

The Contractor shall incorporate any pond sludge into the heap material placed in the ponds during the construction of the ET basins by a method selected by the Contractor that will not compromise the integrity of the pond liner and approved by the CO.

3.04 **Corrugated Polyethylene (PE) Single-Wall Perforated Plastic Pipe and Fittings**

The single-wall perforated PE pipe shall be installed to the lines and grades as SHOWN ON THE DRAWINGS. All pipe and fitting connections shall be securely joined together using the manufactured snap-ends or split couplers in accordance with the manufacturer's recommendations. Cross-tee connections shall be constructed with cross-tees, or minimally offset snap or saddle tees, or an approved alternative.

3.05 **Placement and Compaction**

Care shall be exercised at all times during backfill operations to protect the existing pond liners and all installed piping. The Contractor shall notify the CO of any damage to the pond liner or piping. The Contractor shall repair any damage to the liner or piping to the satisfaction of the CO.

- A. Heap material and Drain Rock for liner cushion shall be placed in maximum 24-inch thick loose horizontal layers and compacted before each succeeding lift is placed. These materials shall be moistened or dried to a uniform moisture content suitable to achieve uniform compaction. Each layer of heap material shall be compacted with at least three passes of a mechanical compaction device and until it provides a suitable base for compacting the next layer, as approved by the CO.
- B. The Drain Rock shall be placed in a single uncompacted horizontal lift.
- C. Select borrow shall be placed in maximum 24-inch thick loose horizontal layers and compacted before each succeeding lift is placed. These materials shall be moistened or dried to a uniform moisture content suitable to achieve uniform compaction. Each layer of heap material shall be compacted with 1-2 passes of a mechanical compaction device approved by the CO.
- D. Topsoil shall be placed in accordance with Section 02805.

3.06 **Final Grading**

The final surface and grade of the backfilled ponds shall be as SHOWN ON THE DRAWINGS with the Topsoil thickness to be adequate to cover the pond crest liners and provide a final surface that promotes runoff away from ponds.

3.07 **Finishing and Cleanup**

Following the work, the work area shall be cleaned up and dressed to present a workmanlike appearance. All debris not originating from the site and unutilized material shall be removed from the site in accordance with Section 01501, Paragraph 3.03.

END OF SECTION 02219A

U. S. Department of Agriculture
Forest Service - Region 4
Humboldt-Toiyabe National Forest

**SECTION 02801A - REVEGETATION FOR ET BASIN CONSTRUCTION (OPTIONAL
BID ITEM)**

GRIFFON MINE
HEAP LEACH FACILITY CLOSURE PROJECT

PART I -- GENERAL

1.01 **Description**

This item shall consist of broadcast seeding or other method approved by the Contracting Officer in designated areas using specified species seed mixtures and mulched.

The Contractor shall be responsible for revegetating the ET basins, the pipe trench disturbance areas, and other disturbed areas the specified species. The same species and application criteria shall apply to the pipeline, and other disturbance areas. A different specified species and application criteria shall apply to the ET basin area.

1.02 **Method of Measurement**

Measurement shall be based on LSQ as shown in the SCHEDULE OF ITEMS.

PART II – PRODUCTS

2.01 **Seed for ET Basin, Pipeline, and Disturbed Areas**

The Contractor shall be responsible for seeding the approximate 2.5 acres of ET basin Topsoil and associated pipeline and stockpile disturbances pursuant to the specifications and with the seed mix presented below:

- A. All seeding equipment shall be pressure-washed prior to arriving on the project site to eliminate contamination by chemical fertilizers and/or undesirable plant species.
- B. Seeded areas shall be planted using a broadcast seeder that is capable of accommodating a range of seed sizes. Seed shall be applied between October 1 and November 30.
- C. After seed has been applied to the area, a harrow blanket, or other implement approved by the CO, will be passed over the ground in such a way that the seed is covered by soil that has proper seed-to-soil contact for favorable germination.
- D. Seed shall conform to applicable State of Nevada Seed Laws or Acts.
- E. Seed shall be certified as free of seeds designated as noxious by the Forest Service and/or the State of Nevada.

F. At least 14 calendar days prior to seeding, seed suppliers' labels shall be obtained that containing the following information:

- plant species
- species variety (when applicable)
- origin, date of harvest
- lot number
- name and address of seed company
- percentages of purity
- germination rates
- inert materials
- non-noxious weed seed
- noxious weed seed

The labels shall be provided to the CO for inspection prior to seed application.

G. The seed mix and application rates (expressed as pounds of Pure Live Seed (lbs. PLS) per acres of surface area) for the ET basin area is provided in as follows:

Proposed Seed Mix for ET Basin Area

Common Name	Scientific Name	Lbs. PLS/Acre
Mountain Snowberry	<i>Symphoricarpos oreophilus</i>	6.0
Great Basin Wildrye	<i>Leymus cineris</i>	4.0
Sandberg Bluegrass	<i>Poa sandbergii</i>	1.0
Bottlebrush squirreltail	<i>Elymus elymoides</i>	3.0
Western Wheatgrass	<i>Pascopyrum smithii</i>	5.0
Big Bluestem	<i>Andropogon gerardi</i>	4.0
Nuttal's alkali grass	<i>Puccinellia airoides</i>	1.0
TOTAL		24.0 lbs. PLS/ac

H. The seed mix and application rates (expressed as pounds of Pure Live Seed (lbs. PLS) per acres of surface area) for the associated Topsoil stockpiles and other disturbed areas are provided as follows:

Pipeline and Other Disturbed Area Revegetation Seed Mix

Common Name	Scientific Name	Lbs. PLS/Acre*
Grasses		
Mountain Brome	<i>Bromus marginatus</i>	2
Slender Wheatgrass	<i>Agropyron trachycaulum</i>	4
Thickspike Wheatgrass	<i>Agropyron dasystachyum</i>	3
Bluebunch Wheatgrass	<i>Agropyron spicatum</i>	3
Indian Ricegrass	<i>Oryzopsis hymenoides</i>	3
Forbs		
Western Yarrow	<i>Achelles milliform</i>	1/4
Small Burnet	<i>Sanguisorba minor</i>	3
Palmer Penstemon	<i>Penstemon Palmari</i>	1
Shrubs		
Bitterbrush	<i>Purshia tridentata</i>	4
Mountain Snowberry	<i>Symphoricarpos oreophilus</i>	3
TOTAL		26.25 lbs. PLS/ac

* PLS = Pure Live Seed.

PART III - EXECUTION

3.01 General

The specified seed mixture shall be uniformly applied on the designated areas that have received topsoil to the density in pounds of live seed per acre as specified. Prior to mulching and after seeding, a harrow blanket, or other implement approved by the CO, will be passed over the ground in such a way that the seed is covered by soil and has proper seed-to-soil contact for favorable germination (1/4 and 1/2 inch deep).

Prior to seeding the topsoil shall be lightly ripped or scarified on contour to loosen the soil at least 6 inches deep prior to seeding. No seeding shall be performed during windy weather or when the ground is excessively wet or deeply frozen.

Seeding shall be performed in the fall (October 1 through November 30), or as approved in writing by the CO.

3.02 **Preparation of Seeding Areas**

Cut slopes, fill slopes, embankments or other areas to be seeded shall be shaped and finished as specified under the Sections involved. The area, where necessary, shall then be raked, lightly ripped, or otherwise worked on contour such that the surface is loose to a depth of at least 6 inches. Each area shall be approved for seeding by the Contracting Officer before seed is applied.

3.03 **Seeding**

The seed or seed mixtures shall be accurately proportioned as stipulated and thoroughly mixed. They shall be remixed as necessary so that a uniform mixture will result as each loading of the specified seeder is made.

The seed is to be incorporated to a depth of no less than ¼ inch and no more than ½ inch below the ground surface by dragging the area with a harrow blanket or other approved equipment. Seed shall be broadcast seeded at rates specified in Table 1. All portions of the areas to be seeded shall be uniformly covered to the required densities.

3.04 **Mulching**

Following application of the appropriate seed mix, the Contractor shall supply, place and crimp a minimum of 2.0 tons of alfalfa hay per acre of reseeded area or mulch alternative as approved by the CO. The mulch shall be weed free, with documentation supporting such. Mulching shall not take place when wind velocities exceed 15 mph.

Crimping shall be accomplished with a crimper with serrated disk blades spaced at 4 – 8 inches, and capable of pressing the mulch to an average depth of 2 inches below the soil surface, or other equipment capable of achieving the same results as approved by the CO. Crimping shall be performed in two perpendicular passes, with the final pass being along contour. Crimping shall be performed as soon as possible following placement of the mulch.

3.05 **Cleanup**

Following the work, the work area shall be cleaned up and dressed to present a workmanlike appearance. All debris not originating from the site and unutilized material shall be removed from the site in accordance with Section 01501, Paragraph 3.03.

END OF SECTION 02801A

U. S. Department of Agriculture
Forest Service - Region 4
Humboldt-Toiyabe National Forest

**SECTION 01300A - SUBMITTALS FOR CONSTRUCTION OF ET BASIN AND
RELATED APPURTENANCES (OPTIONAL BID ITEM)**

GRIFFON MINE
HEAP LEACH FACILITY CLOSURE PROJECT

PART I – GENERAL

1.01 **Description**

This section covers the contractor's responsibility relating to all submittals, test data, and as-built survey drawings that relate to the construction of the Work in Sections 02531A, 02201A, 02219A, and 02801A.

1.02 **Method of Measurement**

Measurement will be based on LSQ as indicated in the SCHEDULE OF ITEMS.

PART II – PRODUCTS

2.01 **General**

Products shall consist of written results and survey drawings as indicated in various sections requiring such documentation including information required of this section.

PART III – EXECUTION

3.01 **All Submittals**

It will be the Contractor's responsibility to submit all items with such promptness as to cause no delay in the Work.

3.02 Soil Material Testing

The Contractor shall submit gradation as determined by ASTM C136 and ASTM C117 as follows:

SOIL MATERIAL	TEST INTERVAL
Drain Rock	1 from each pond
Select Borrow	1 for both ponds
Topsoil	1 for both ponds

3.03 As-Built Survey Drawings

In order to document and verify completion of the Work in accordance with the Contract drawings, the following as-built surveys and corresponding drawings are required to be completed by the Contractor. All contours shall be 2-foot maximum and pipe invert elevations shall be indicated in hundredths at 10-foot maximum lineal intervals.

- A. Final topography of surfaces and extent of heap material, Drain Rock, Select Borrow, and Topsoil backfilled in ET basins.
- B. Location and elevation of conveyance piping inverts, and base and top of the distribution manhole.

All drawings shall be submitted in hard copy and electronic format (AutoCAD or approved alternative) to the CO for review and approval prior to Contractor demobilization. All variations from the Contract drawings shall be indicated in red on the drawings.

3.04 Material Certifications

The Contractor shall submit legible copies manufacturer's documentation, shipping manifests, or other certifications for all specified materials installed for the Work. Such documents shall be submitted to the CO prior to installation of the materials.

END OF SECTION 01300A

U. S. Department of Agriculture
Forest Service - Region 4
Humboldt-Toiyabe National Forest

**SECTION 02201B - CONVEYANCE PIPING AND APPURTENANCES BETWEEN
DISTRIBUTION MANHOLE AND INFILTRATION AREA (OPTIONAL BID ITEM)**

GRIFFON MINE
HEAP LEACH FACILITY CLOSURE PROJECT

PART I – GENERAL

1.01 Description

This item shall consist of supplying, excavating, installing, and backfilling for conveyance pipes and drainage control facilities between the distribution manhole and the infiltration trenches in accordance with these specifications and details, lines and grades as SHOWN ON THE DRAWINGS. This specification covers excavation, safety, shoring and protection, and installation of pipe, dosing tank, distribution boxes, pipe bedding, common fill, structural fill, compaction of backfill, trench resurfacing, finishing and area cleanup.

1.02 Method of Measurement

Measurement for this Work shall be based on the LSQ as indicated in the SCHEDULE OF ITEMS.

The following items will be considered incidental to the Work:

1. All trenching for installation of pipe and appurtenances.

PART II – PRODUCTS

2.01 Pipe Bedding and Structural Fill

This material shall be in accordance with the specifications in Section 02201A, Paragraph 2.01.

2.02 Common Fill

This material shall be in accordance with the specifications in Section 02201A, Paragraph 2.02.

2.03 Topsoil

This material shall be in accordance with the specifications in Section 02201A, Paragraph 2.03.

2.04 **Conveyance Piping**

This material shall be in accordance with the specifications in Section 02201A, Paragraph 2.04 (A), (C) and (D).

2.05 **Dosing Tank**

The dosing tank assembly as SHOWN ON THE DRAWINGS shall consist of a prefabricated Model DS1500-412 (4-inch alternating dual siphon) and compatible components as manufactured by Jensen Precast or approved alternative. The tank shall be equipped with compatible filter screens (one per siphon bell), a digital dose counter, and lid assembly as supplied by Jensen Precast or approved alternative. The dose counter readout shall be securely mounted in an easily readable position within a secure, lockable, metal vault installed at ground level adjacent to the tank access lid. The wiring shall be buried a minimum of 18-inches below the surface of the ground.

2.06 **Distribution Boxes**

The distribution box assemblies as SHOWN ON THE DRAWINGS for the infiltration area shall consist of Model D-30 Commercial Distribution Boxes and compatible components as manufactured in accordance with ASTM C478 by Jensen Precast or approved alternative. All pipe penetrations and seals shall be installed by the manufacturer and be of type and installation recommended by the manufacturer.

2.07 **Air Vent/Vacuum Relief Valve**

The air vent/vacuum relief valve as SHOWN ON THE DRAWINGS for the pipe between the distribution manhole and the dosing tank shall consist of Model RB-2-AV as manufactured by Rain Bird, or approved alternative.

PART III – EXECUTION

3.01 **Trench Excavation**

All trench excavation shall be in accordance with the specifications in Section 02201A, Paragraphs 3.01 and 3.02.

3.02 **Removal of Water**

All removal of water shall be in accordance with the specification in Section 02201A, Paragraph 3.03.

3.03 **Pipe and Fitting Installation**

All pipe and fitting installation shall be in accordance with the specification in Section 02201A, Paragraph 3.04

3.04 **Bedding and Backfill Operations**

All bedding and backfill operations shall be in accordance with the specifications in Section 02201A, Paragraph 3.05.

3.05 Waste Material Disposal

All waste material disposal shall be in accordance with the specifications in Section 02201A, Paragraph 3.06.

3.06 Topsoil

Topsoil shall be placed according to the specifications in Section 02201A, Paragraph 3.07.

3.07 Air Vent/Vacuum Relief Valve Installation

Installation of the air vent/ vacuum relief valve shall be done in accordance with manufacturer's recommendations and as SHOWN ON THE DRAWINGS. The valve shall be installed in a precast concrete meter box with a lid for physical protection.

3.08 Finishing and Cleanup

Following the work, the work area shall be cleaned up and dressed to present a workmanlike appearance. All debris not originating from the site and unutilized material shall be removed from the site in accordance with Section 01501, Paragraph 3.03.

END OF SECTION 02201B

U. S. Department of Agriculture
Forest Service - Region 4
Humboldt-Toiyabe National Forest

**SECTION 15303A - INFILTRATION AREA FOR HEAP SOLUTION DISPOSAL
(OPTIONAL BID ITEM)**

GRIFFON MINE
HEAP LEACH FACILITY CLOSURE PROJECT

PART I -- GENERAL

1.01 Description

This item shall consist of excavation, placement of filter fabric, backfilling with Drain Rock and salvaged pipe, placement of drainage piping, backfilling with compacted common fill and Topsoil placement for construction of the infiltration trenches in an infiltration area in accordance with this specification.

1.02 Method of Measurement

Measurement shall be based on LSQ for the alternate bid item as indicated in the SCHEDULE OF ITEMS.

PART II -- PRODUCTS

2.01 Corrugated Polyethylene (PE) Single-Wall Perforated Plastic Pipe and Fittings

The pipe shall be of 8-inch nominal diameter referred to as single wall and manufactured by Advanced Drainage Systems, Inc. (ADS) or and approved alternative. Pipe couplers shall consist either of single wall snap couplers (ADS Part No. 0812-AA), internal snap couplers (ADS Part No. 0815-AA) or single wall split couplers (ADS Part No. 0811-AA) or approved alternative. End caps shall be installed at all open ends of 8-inch diameter pipe as SHOWN ON THE DRAWINGS and consist of a snap end cap (ADS Part No. 0832-AA) or approved alternative. Transition fittings from the PVC conveyance pipeline to the perforated PE pipe shall be ADS Series 35 Sanitary Fittings as manufactured by Advanced Drainage Systems or approved alternative.

2.02 Perforations for Single-Wall PE Pipe

All perforations for single-wall PE pipe shall conform to the specifications in Section 02219A, Paragraph 2.02(B).

2.03 Drain Rock

Drain Rock shall be in accordance with the specifications in Section 02219A, Paragraph 2.01.

2.04 **Filter Fabric**

Filter fabric shall be in accordance with the specifications in Section 02219A, Paragraph 2.03.

2.05 **Topsoil**

Topsoil shall be in accordance with the specification in Section 02201A, Paragraph 2.03.

2.06 **Common Fill**

Common fill shall be in accordance with the specifications in Section 02201A, Paragraph 2.02.

2.07 **Revegetation**

The disturbance area and the excess soil stockpile shall be revegetated in accordance with the specifications in Section 02801.

2.08 **Miscellaneous HDPE and PVC Pipe**

The Contractor shall salvage all available solid HDPE and PVC pipe of 4-inch nominal diameter or larger and 5 feet in length or longer from the heap area. For the purposes of this specification, pipe is “available” if it was on the project site prior to the Contract, was not owned by the Contractor prior to the Contract, or may be obtained by the Contractor at no additional purchase cost to the Contractor. The Contractor shall comply with the provisions of Section 01501, Paragraph 3.01 in regard to all miscellaneous HDPE and PVC pipe. All pipe for salvage shall be approved by the CO.

This pipe shall be cut into pieces no longer than 50 feet in length, transported to the infiltration area, and placed in the infiltration trenches as SHOWN ON THE DRAWINGS. As near as practical, the pipe shall be evenly distributed along each trench and among all of the trenches. All valves and other metal fittings shall be removed and disposed of on-site as approved by the CO.

PART III -- EXECUTION

3.01 **Topsoil**

Topsoil shall be handled in accordance with the specifications in Section 02201A, Paragraph 3.07.

3.02 **Trenching**

Trenching shall be in accordance with the specifications in Section 02201A, Paragraph 3.01 and 3.02.

3.03 **Placement and Compaction of Drain Rock**

Drain Rock shall be placed in 12-inch maximum loose horizontal layers. Each layer shall be relatively leveled before starting the next.

Drain Rock shall be moistened or dried to a uniform moisture content suitable for compaction as approved by the CO.

Each layer shall be compacted with 2-3 episodes of vertically applied pressure from the rear of the excavator bucket or other compaction equipment approved by the CO.

3.04 **Drainage Piping (Corrugated Perforated PE)**

The Contractor shall be responsible for installing the drainage piping and fittings to the line and grade as SHOWN ON THE DRAWINGS. Pipe bedding material shall be fully placed under the haunch of the pipe throughout its entire length. All pipe shall be installed in accordance with the manufacturer's recommendations. All pipe joints and fittings shall be securely joined in accordance with the manufacturer's recommendations.

3.05 **Placement and Compaction of Common Fill**

Common fill shall be placed and compacted in accordance with Section 02201A of these specifications to within 12 inches of the ground surface. Common fill shall be loosely placed from 12 inches below the ground surface to final grade as SHOWN ON THE DRAWINGS.

3.06 **Excess Soil Disposal**

Excess soil shall be neatly disposed of at an area in or near to the infiltration area as designated by the CO. The soil disposal facility shall be graded to drain surface runoff and have slopes no steeper than 2.5H:1V. The soil disposal area shall be covered with a layer of Topsoil no less than 6 inches in thickness, and shall be applied in accordance with Section 02805. All stripped Topsoil shall be used to cover the area. The Topsoil shall be reseeded in accordance with the specifications for Topsoil areas in Section 02801.

The natural ground surface beneath the excess soil disposal facility shall be stripped of Topsoil in accordance with Section 02201A, Paragraph 2.03.

3.07 **Revegetation**

The disturbance area and the excess soil disposal facility shall be revegetated in accordance with the specifications in Section 02801.

3.08 **Channel Crossing**

The Contractor shall construct channel crossing(s) as SHOWN ON THE DRAWINGS at all locations where a conveyance pipe trench crosses a drainage channel as directed by the CO.

3.09 **Finish Grading**

The Contractor shall be responsible for finish grading of the infiltration trench area to approximate preexisting natural contour as SHOWN ON THE DRAWINGS.

3.10 **Cleanup**

After installing the infiltration system the area shall be cleaned up by removing unused and waste materials and disposing of materials in accordance with Section 01501, Paragraph 3.03.

END OF SECTION 15303A

U. S. Department of Agriculture
Forest Service - Region 4
Humboldt-Toiyabe National Forest

SECTION 02700A - FENCING INFILTRATION AREA (OPTIONAL BID ITEM)

GRIFFON MINE
HEAP LEACH FACILITY CLOSURE PROJECT

PART I – GENERAL

1.01 Description

This item shall consist of two fence sections to surround infiltration trench areas. The fence will consist of four barbed wire strands supported on steel posts. The fence line, including any gates, will be flagged by the Forest Service.

1.02 Method of Measurement

The measurement shall be based on AQ as indicated in the SCHEDULE OF ITEMS.

The fence will be measured along the slope of the bottom wire by the linear foot of new fence completed in place and accepted between centers of end posts including the length between centers of gate posts.

PART II – PRODUCTS

2.01 General

The fence shall consist of the components as indicated in Paragraph 1.01, and further itemized in PART III.

PART III – EXECUTION

3.01 General Location

The fence line, including all gates and corners, will be flagged. The fence will be built in a straight line unless indicated differently by flagged locations or the direction of the Contracting Officer. Any deviation from the planned fence location must be approved by the Contracting Officer before the fence is built.

3.02 Clearing

Power tools may be used to clear brush and trees from the fence line to allow for access. Trees and brush will be removed at the ground level without disturbance to the soil surface and slash scattered away from the fence line.

3.03 **Barbed Wire**

Barbed wire shall be galvanized, minimum 12½ gage with 14 gage full round barbs spaced at not to exceed 5 inches. Barbed wire shall conform to the requirements of ASTM A121. Zinc coating shall be Class 1.

3.04 **Wire Spacing**

The fence will have four strands of barbed wire with spacing from the ground as follows:

Bottom strand - 16 inches
2nd strand - 24 inches
3rd strand - 32 inches
Top strand - 42 inches

3.05 **Braces**

Braces will be constructed at least every 80 rods (¼ mile), at gates, at all points where the fence changes more than a 10 degree angle and at any major topographical change where the slope change exceeds 30 percent. Gate approach, line brace, corner posts and braces may be angular or tubular of at least 5 inches in minimum width or diameter, peeled and of sound material. Guy wires shall be of two complete strands of 9 gage galvanized wire. The guy wires shall be tightened by twisting.

3.06 **Posts**

Posts shall be 5½-foot length for steel and 7 foot length for wood. Wood posts shall be either cedar or pressure treated wood. Steel posts shall be driven a minimum of 1½ feet into the ground. Steel posts driven into drilled rock will be driven at least 10 inches deep.

Steel posts shall be “T” type and meet requirements of commercial standard 184-51 and shall weigh not less than 1.33 pounds per lineal foot.

Wood posts will be buried at least 2½ feet and the soil tamped around the post so it is tight in the ground. If wood posts cannot be buried the required depth, rock cribs will be constructed to securely anchor the posts.

Posts shall be spaced at a nominal distance of 14 feet.

3.07 **Gates**

All gates, either log or wire, shall be constructed with a 12-foot width. Gates shall be constructed as directed by the CO. Wire gates shall be stapled to two wood stays and a gate closure arm shall be installed. Gates either pole or wire will not be paid for separately, but will be included in the AQ item, which shall be full compensation for all construction.

3.08 **Wire Clips, Ties and Stays**

Clips for fastening barbed wire to steel posts shall have the ends bent completely around the wire and be of minimum 12½ gage. If wood posts are used, stay and tie wires shall be 9 gage. All ties and stays shall be securely fastened to the posts and fence wire. All these

materials shall be galvanized and conform to the requirements of ASTM A116. Zinc coating shall be Class 1.

3.09 **Cleanup**

When the fence has been installed, the general area shall be cleaned up and dressed to present a workmanlike appearance. All debris and unutilized material shall be removed from the site in accordance with Section 01501, Paragraph 3.03.

END OF SECTION 02700A

U. S. Department of Agriculture
Forest Service - Region 4
Humboldt-Toiyabe National Forest

**SECTION 01300B - SUBMITTALS FOR INFILTRATION SYSTEM CONSTRUCTION
(OPTIONAL BID ITEM)**

GRIFFON MINE
HEAP LEACH FACILITY CLOSURE PROJECT

PART I – GENERAL

1.01 Description

This section covers the contractor’s responsibility relating to all submittals, test results, and as-built survey drawings that relate to the construction of the infiltration system, related piping and appurtenances.

1.02 Method of Measurement

Measurement will be based on LSQ as indicated in the SCHEDULE OF ITEMS.

PART II – PRODUCTS

2.01 General

Products shall consist of written results and survey drawings as indicated in various sections requiring such documentation including the heap solution monitoring and analytical documentation required of this section.

PART III – EXECUTION

3.01 All Submittals

It will be the Contractor’s responsibility to submit all items with such promptness as to cause no delay in the Work.

3.02 Soil Material Testing

The Contractor shall submit soil gradation test results as determined by ASTM C136 and ASTM C117 as follows:

SOIL MATERIAL	TEST INTERVAL
Drain Rock	1/trench pair

3.03 **As-Built Survey Drawings**

In order to document and verify completion of the Work in accordance with the Contract drawings, the following as-built surveys and corresponding drawings are required to be completed by the Contractor. All contours shall be 2-foot maximum and pipe invert elevations shall be indicated in hundredths at 10-foot maximum lineal intervals.

- A. Final alignment and elevation of conveyance and perforated pipe inverts between the distribution manhole and the down gradient ends of all infiltration trenches.
- B. Final topography, location, and extent of the infiltration area and its individual infiltration trenches.
- C. Final location and elevation of base and lid for, dosing tank, and distribution boxes, including invert elevation and location of inlet and outlet pipes from these precast concrete facilities.
- D. Final alignment of all fencing and location of gates installed at the infiltration area.

All drawings shall be submitted in hard copy and electronic format (AutoCAD or approved alternative) to the CO for review and approval prior to Contractor demobilization. All variations from the Contract drawings shall be indicated in red on the drawings.

3.04 **Material Certifications**

The Contractor shall submit legible copies manufacturer's documentation, shipping manifests, or other certifications for all specified materials installed for the Work. Such documents shall be submitted to the CO prior to installation of the materials.

END OF SECTION 01300B

U. S. Department of Agriculture
Forest Service - Region 4
Humboldt-Toiyabe National Forest

**SECTION 02315A - DIVERSION CHANNEL STABILIZATION (OPTIONAL BID
ITEM)**

GRIFFON MINE
HEAP LEACH FACILITY CLOSURE PROJECT

PART I – GENERAL

1.01 Description

This section covers the Contractor's responsibility relating to stabilization of a portion of the East Diversion Channel as SHOWN ON THE DRAWINGS and as staked on the ground by the U.S.D.A. Forest Service. The new channel shall be revegetated. Stabilization shall include repair of erosion damage to the channel, any necessary earthwork to return the channel to its original alignment, section, and grade, and revegetation of the channel to provide erosion protection. All stabilized channels will have erosion control matting installed.

1.02 Method of Measurement

Measurement will be based on LSQ as indicated in the SCHEDULE OF ITEMS.

PART II – PRODUCTS

2.01 Seed Mix

The Contractor shall seed the new and stabilized channels with the following seed mix. The seed mix and application rates (expressed as pounds of Pure Live Seed (lbs. PLS) per acres of surface area).

Channel Revegetation Seed Mix

Common Name	Scientific Name	Lbs. PLS/Acre*
Grasses		
Mountain Brome	<i>Bromus marginatus</i>	2
Slender Wheatgrass	<i>Agropyron trachycaulum</i>	4
Thickspike Wheatgrass	<i>Agropyron dasystachyum</i>	3
Bluebunch Wheatgrass	<i>Agropyron spicatum</i>	3
Indian Ricegrass	<i>Oryzopsis hymenoides</i>	3
Forbs		
Western Yarrow	<i>Achelles milliform</i>	1/4
Small Burnet	<i>Sanguisorba minor</i>	3
Palmer Penstemon	<i>Penstemon Palmari</i>	1
TOTAL		19.25 lbs. PLS/ac

* PLS = Pure Live Seed.

2.02 Erosion Control Matting

The erosion control matting shall be Kaul Corporation Regular Excelsior (R-1) - Erosion Control Blanket or equivalent approved by the Contracting Officer.

PART III – EXECUTION

3.01 Erosion Damage Repair

The Contractor shall repair the erosion damage to the East Diversion Channel as SHOWN ON THE DRAWINGS in the sections flagged by the U.S.D.A. Forest Service and as approved by the CO. Repair shall include adding additional compacted earth or regrading the channel to the original alignment, cross-section, and grade.

3.02 Revegetation

The Contractor shall seed the channels with the methods in accordance with the specifications for disturbed areas in Section 02801.

3.03 Erosion Control Matting

Following the seeding, the Contractor shall install erosion control matting in accordance with the manufacturer's recommendations and as approved by the CO.

3.04 Cleanup

Following the work, the work area shall be cleaned up and dressed to present a workmanlike appearance. All debris and unutilized material shall be removed from the site in accordance with Section 01501, Paragraph 3.03.

END OF SECTION 02315A

U. S. Department of Agriculture
Forest Service - Region 4
Humboldt-Toiyabe National Forest

**SECTION 01300C - HEAP SOLUTION MONITORING AND PROJECT SUBMITTALS
(OPTIONAL BID ITEM)**

GRIFFON MINE
HEAP LEACH FACILITY CLOSURE PROJECT

PART I – GENERAL

1.01 **Description**

This section covers the contractor's responsibility relating to all heap solution monitoring and reporting of monitoring results.

1.02 **Method of Measurement**

Measurement will be based on LSQ as indicated in the SCHEDULE OF ITEMS.

PART II – PRODUCTS

2.01 **General**

Products shall consist of written reports of the heap solution monitoring and analytical documentation required of this section.

PART III – EXECUTION

3.01 **All Submittals**

It will be the Contractor's responsibility to submit all items with such promptness as to cause no delay in the Work.

3.02 **Heap Solution Monitoring**

The Contractor shall perform monitoring of the heap solution for the duration of the project or until such time as the monitoring becomes impractical as approved by the CO. Monitoring shall be done as follows:

A. Weekly Monitoring – A weekly measurement of heap solution flow shall be obtained at an accessible location between the heap and ponds utilizing a 5-gallon bucket and stopwatch or other means approved by the CO.

B. Monthly Sample Collection – A monthly sample of heap solution shall be obtained at an accessible location between the heap and ponds and submitted under chain-of-custody protocol to a laboratory for NDEP Profile I analysis. A minimum of four samples shall be collected for this Contract. The laboratory utilized shall be certified by the State of Nevada to perform this type of analysis.

C. Submittals – The weekly field monitoring and monthly analytical results (official laboratory results) shall be submitted to the Contracting Officer in a timely manner as indicated in Paragraph 3.01.

Sampling Protocol – Sampling of heap solution will be performed at the exact location each time, in accordance with applicable EPA standard sampling protocol for wastewater sampling, and as directed by the laboratory. Sampling equipment shall be acquired from the laboratory.

END OF SECTION 01300C