



RFQ No. DACW67-02-Q-0003

**US Army Corps
of Engineers®**
Seattle District

Project: SUNSHINE ROTOSONIC & AUGER DRILLING

Location: COEUR D' ALENE, IDAHO

**SERVICE SOLICITATION
AND SPECIFICATIONS**

Closing Date: 19 OCTOBER 2001
Closing Time: 10:00 AM LOCAL TIME

REMARKS: Quotes may be faxed to (206) 764-6817, Attention: Susan Newby, or mailed to US Army, Corps of Engineers, Seattle District, Attention: Susan Newby, P.O. Box 3755, Seattle, WA 98124-3755.

SOLICITATION/CONTRACT/ORDER FOR COMMERCIAL ITEMS <i>OFFEROR TO COMPLETE BLOCKS 12, 17, 23, 24, AND 30</i>				1. REQUISITION NUMBER W68MD9-1271-4075		PAGE 1 OF 27				
2. CONTRACT NO.		3. AWARD/EFFECTIVE DATE		4. ORDER NUMBER		5. SOLICITATION NUMBER DACW67-02-Q-0003		6. SOLICITATION ISSUE DATE 11-Oct-2001		
7. FOR SOLICITATION INFORMATION CALL				a. NAME SUSAN F NEWBY		b. TELEPHONE NUMBER (No Collect Calls) 206-764-6780		8. OFFER DUE DATE/LOCAL TIME 19-Oct-2001 10:00		
9. ISSUED BY USA ENGINEER DISTRICT, SEATTLE ATTN: CENWS-CT P.O. BOX 3755 SEATTLE WA 98124-3755 TEL: 206-764-3772 FAX: 206-764-6817			CODE DACW67		10. THIS ACQUISITION IS <input type="checkbox"/> UNRESTRICTED <input checked="" type="checkbox"/> SET ASIDE: 100%FOR <input checked="" type="checkbox"/> SMALL BUSINESS <input type="checkbox"/> SMALL DISADV. BUSINESS <input type="checkbox"/> 8(A) SIC: 1081 SIZE STANDARD: \$5.0 million			11. DELIVERY FOR FOB DESTINATION UNLESS BLOCK IS MARKED <input type="checkbox"/> SEE SCHEDULE <input type="checkbox"/> 13 a. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 700) 13 b. RATING 14. METHOD OF SOLICITATION <input checked="" type="checkbox"/> RFQ <input type="checkbox"/> IFB <input type="checkbox"/> RFP		12. DISCOUNT TERMS
15. DELIVER TO SEE SCHEDULE				CODE		16. ADMINISTERED BY SEE ITEM 9				CODE
17 a. CONTRACTOR/ OFFEROR TEL.			CODE		FACILITY CODE		18 a. PAYMENT WILL BE MADE BY CODE			CODE
<input type="checkbox"/> 17 b. CHECK IF REMITTANCE IS DIFFERENT AND PUT SUCH ADDRESS IN OFFER					18 b. SUBMIT INVOICES TO ADDRESS SHOWN IN BLOCK 18 a. UNLESS BLOCK BELOW IS CHECKED <input type="checkbox"/> SEE ADDENDUM					
19. ITEM NO.	20. SCHEDULE OF SUPPLIES/ SERVICES				21 QUANTITY	22. UNIT	23. UNIT PRICE	24. AMOUNT		
SEE SCHEDULE										
25. ACCOUNTING AND APPROPRIATION DATA								26. TOTAL AWARD AMOUNT		
<input checked="" type="checkbox"/> 27 a. SOLICITATION INCORPORATES BY REFERENCE FAR 52.212-1. 52.212-4. FAR 52.212-3 AND 52.212-5 ARE ATTACHED.						ADDENDA <input checked="" type="checkbox"/> ARE <input type="checkbox"/> ARE NOT ATTACHED				
<input type="checkbox"/> 27 b. CONTRACT/PURCHASE ORDER INCORPORATES BY REFERENCE FAR 52.212-4. FAR 52.212-5 IS ATTACHED.						ADDENDA <input type="checkbox"/> ARE <input type="checkbox"/> ARE NOT ATTACHED				
28. CONTRACTOR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN <u>1</u> COPIES TO ISSUING OFFICE. CONTRACTOR AGREES TO FURNISH AND DELIVER ALL ITEMS SET FORTH OR OTHERWISE IDENTIFIED ABOVE AND ON ANY ADDITIONAL SHEETS SUBJECT TO THE TERMS AND CONDITIONS SPECIFIED HEREIN.					29. AWARD OF CONTRACT: REFERENCE <input type="checkbox"/> OFFER DATED . YOUR OFFER ON SOLICITATION (BLOCK 5), INCLUDING ANY ADDITIONS OR CHANGES WHICH ARE SET FORTH HEREIN, IS ACCEPTED AS TO ITEMS:					
30 a. SIGNATURE OF OFFEROR/CONTRACTOR				31 a. UNITED STATES OF AMERICA (SIGNATURE OF CONTRACTING OFFICER)						
30 b. NAME AND TITLE OF SIGNER (TYPE OR PRINT)			30 c. DATE SIGNED		31 b. NAME OF CONTRACTING OFFICER (TYPE OR PRINT)			31 c. DATE SIGNED		
32 a. QUANTITY IN COLUMN 21 HAS BEEN <input type="checkbox"/> RECEIVED <input type="checkbox"/> INSPECTED <input type="checkbox"/> ACCEPTED, AND CONFORMS TO THE CONTRACT, EXCEPT AS NOTED				33. SHIP NUMBER <input type="checkbox"/> PARTIAL <input type="checkbox"/> FINAL		34. VOUCHER NUMBER		35. AMOUNT VERIFIED CORRECT FOR		
32 b. SIGNATURE OF AUTHORIZED GOVT. REPRESENTATIVE			32 c. DATE		36. PAYMENT <input type="checkbox"/> COMPLETE <input type="checkbox"/> PARTIAL <input type="checkbox"/> FINAL			37. CHECK NUMBER		
41 a. I CERTIFY THIS ACCOUNT IS CORRECT AND PROPER FOR PAYMENT				38. S/R ACCOUNT NUMBER		39. S/R VOUCHER NUMBER		40. PAID BY		
41 b. SIGNATURE AND TITLE OF CERTIFYING OFFICER			41 c. DATE		42a. RECEIVED BY (Print)					
				42b. RECEIVED AT (Location)						
				42c. DATE REC'D (YY/MM/DD)		42d. TOTAL CONTAINERS				

SECTION SF 30 BLOCK 14 CONTINUATION PAGE

NAICS Coding versus SIC Coding

The computer program used to generate this document does not allow completion of Block 10, Standard Form (SF) 1449, with a NAICS code. The SIC Code, 1081, under Block 10, shall be read as if completed with the NAICS code 213114. The size standard is \$5.0 Million.

NOTE

QUOTES ARE DUE INTO THIS OFFICE
NO LATER THAN
OCTOBER 19, 2001
AT
10:00AM

INFORMATION FOR WRITTEN QUOTES:

Please note the following changes, clarifications, or additions to the terms in various provisions and clauses included in this solicitation.

Whenever the words "offer", "proposal", "offerors", or similar terms are used in this solicitation, they shall be read to mean "quote", "quotation", "quoter", or similar corresponding term to reflect that this solicitation is a Request for Quotations (RFQ), not a Request for Proposals (RFP).

Since this solicitation is a RFQ instead of an RFP, paragraphs (g) and (h) of FAR 52.212-1 are deleted.

PROSPECTIVE OFFERORS: THE DIRECTOR OF DEFENSE PROCUREMENT HAS ISSUED A FINAL RULE AMENDING THE DEFENSE FEDERAL ACQUISITION REGULATION SUPPLEMENT (DFARS) THAT REQUIRES CONTRACTORS TO BE REGISTERED IN THE DOD CENTRAL CONTRAL CONTRACTOR REGISTRATION (CCR) FOR AWARDS RESULTING FROM SOLICITATION ISSUED AFTER MAY 31, 1998.

THIS RULE EFFICIENTLY IMPLEMENTS THE DEBT COLLECTION IMPROVEMENT ACT OF 1996 AS IT REQUIRES CONTRACTORS TO BE REGISTERED IN CCR FOR CONSIDERATION OF FUTURE SOLICITATIONS, AWARDS AND PAYMENT. REGISTRATION IS REQUIRED PRIOR TO AWARD OF ANY CONTRACT, BASIC AGREEMENT, BASIC ORDERING AGREEMENT OR BLANKET PURCHASE AGREEMENT FROM A SOLICITATION ISSUED AFTER MAY 31, 1998. NO CONTRACT AWARD WILL BE MADE TO AN UNREGISTERED CONTRACTOR. INTERNET ACCESS ALLOWS YOU TO REGISTER BY COMPLETING AN ELECTRONIC ON-LINE REGISTRATION APPLICATION FROM CCR HOMEPAGE AT <http://www.ccr.gov/>. FOR FURTHER ASSISTANCE IN COMPLETING YOUR ON-LINE REGISTRATION, CONTACT THE NEAREST PROCUREMENT TECHNICAL ASSISTANCE CENTER (PTAC) NEAR YOU. A LIST OF THE NEAREST PTAC IS LOCATED AT: <http://www.rcacwv.com/ptac.htm>.

CONTRACTOR MUST PROVIDE DUN AND BRADSTREET NUMBER: _____
If contractor does not have DUNS number, contractor may register in CCR to retrieve a number (see internet address above, or you may call 888-333-0505).

CONTRACTOR MUST PROVIDE TAX IDENTIFICATION NUMBER: _____

PERIOD OF PERFORMANCE: EQUIPMENT AND OPERATORS SHALL BE AVAILABLE BY 24 OCTOBER 2001. THE AWARDEE MUST SUBMIT THE WORK PLAN WITHIN SEVEN (7) DAYS AFTER AWARD DATE AND BEFORE NOTICE TO PROCEED (NTP) IS ISSUED, AND WORK WILL BE COMPLETED SIXTY (60) CALENDAR DAYS FOLLOWING NOTICE TO PROCEED.

NOTE: Responses via Non-Facnet and Facnet will be accepted through the Seattle District office. Contractors must quote on all line items. This Request for Quotations (RFQ) is considered for Small Business Set-Aside Only; Large Business will not be considered.

EDI contractor MUST request for the specifications and wage determination. Failure to do so will result in rejection of offers. Upon requesting a copy of the RFQ, the point of contact is:

SUSAN NEWBY, Contract Specialist
CONTRACTING WEB ADDRESS: <http://www.nws.usace.army.mil/index.cfm>
(Click on Contract and Bid Information)
E-MAIL ADDRESS: Susan.F.Newby@nws02.usace.army.mil
TELEPHONE: (206) 764-6780
FACSIMILE: (206) 764-6817

Representations and Certifications contained herein must be completed by quoters and returned with offers. Please submit your completed Quotation, no later than October 19, 2001, to the address shown in Block 9, of the Standard Form (SF) 1449,

Quotation/Contract/Order for Commercial Items. Facsimile quotes may be sent to the Seattle District, Corps of Engineers, Attention: Susan Newby at (206) 764-6817.

Any amendments that will follow, will be accepted until the time and date of closing. Amendments must be acknowledged by signing the front page of the Standard Form (SF) 30, Amendment of Solicitation/Modification of Contract.

CONTRACTING OFFICER'S REPRESENTATIVE (COR)

The Contracting Officer (CO) of this order is the only person authorized to approve changes or modify any of the requirements under this contract, and notwithstanding anything contained elsewhere in this contract. In the event that the Contracting Officer is not present at the worksite, a Representative for the Contracting Officer will be appointed by letter at the time of award.

Instructions on FAR 52.212-2, Evaluation – Commercial Items (Jan 1999).

This request for quotation contains Evaluation Factors for the Rotosonic and Auger Drilling methods at Coeur d'Alene Basin, identified in the Scope of Work. The Government reserves the right to make an award, which will be determined, the most advantageous to the Government based on Best Value evaluation factors.

The following factors shall be used to evaluate offers:

In accordance with the provisions contained herein, award shall be made to a single offeror. The Government will select the most advantageous offer based on technical merit and cost. No quote shall be accepted that does not contain the total amount of work specified in this solicitation. To be considered for awards quotes shall conform to the terms and conditions contained in this solicitation. The evaluation process used to determine the most advantageous offer is as follows:

1. **Selection Board:** Contracting Officer may establish a selection board to conduct an evaluation of each quote received in response to this solicitation. The evaluation will be based exclusively on the merits and content of the quote. The Board will not consider any information incorporated by reference or otherwise referred to.
2. **Evaluation Criteria:** In descending order of preference, based on the criteria below, overall ratings are evaluated as follows:

PAST PERFORMANCE – Attached is the questionnaire that will be asked the three (3) references of projects you have completed work with, from other agencies, which is similar to the scope of this contract. These projects must have been completed within the last five (5) to ten (10) years.

The upper part of the questionnaire will be completed by offerors, and the bottom half of questionnaire (interview questions) will be completed by the Government. The point of contact you include on the questionnaire will be contacted and will be asked the following questions. POC's responses shall be able to provide an overall rating, to include, past experience of similar projects:

1. QUALITY OF SERVICE PROVIDED
2. TIMELINESS OF PERFORMANCE
3. BUSINESS RELATIONS
4. WOULD YOU RECOMMEND THIS VENDOR/CONTRACTOR AGAIN?

Excellent: Exceeds over and above requirements
 Good: Meets and fairly exceeds requirements
 Fair: Meets requirements.
 Poor: Meets below requirements
 Unsatisfactory: Requirements not met.

PAST EXPERIENCE – Performed Rotosonic and Auger drilling methods for more than one (1) year, in a Hazardous environment.

3. **Price:** Price of the contract is considered secondary to the technical factors and will be independently evaluated. Price will be evaluated but will not be scored. Price quotes will be independently evaluated to determine whether the quoted price is complete and reasonable. Offerors must quote all items in the schedule.
4. **Basis of Award:** Award shall be made to a higher rated offeror and may be awarded to a higher priced offeror if the offer is sufficiently more advantageous to the Government, inasmuch, to justify the payment of a higher price. The degree of importance of cost as a factor shall become more important when both past experience and performance are relatively equal in merit. Prices quoted for this project reflect all cost associated with the work required to complete the tasks identified in the Scope of Work and will be evaluated to reflect the Contractor's understanding of the project requirements, as well as the potential to provide the Best Value to the Government.

**QUESTIONNAIRE – CONTRACTOR’S PAST PERFORMANCE
(OFFERORS MUST COMPLETE THIS PORTION)**

KTR#1

AGENCY THAT WORK WAS PERFORMED FOR: _____

POINT OF CONTACT/TELEPHONE NUMBER: _____

PERIOD OF PERFORMANCE OF PREVIOUS WORK: _____

TOTAL DOLLAR AMOUNT OF CONTRACT: _____

BRIEF DESCRIPTION OF DRILLING METHODS PERFORMED: _____

.....
INTERVIEW QUESTIONS

(GOVERNMENT WILL COMPLETE THIS PORTION)

OFFEROR: _____ PHONE NUMBER: _____

REF: COMPANY CONTACTED: _____ POC CONTACTED: _____

PAST EXPERIENCE:

Performed Rotasonic and Auger drilling methods for more than one (1) year, in a Hazardous environment.

YES NO If yes, Contract Number: _____

Firm or Agency work was performed for: _____

Period of Performance: _____

PAST PERFORMANCE:

1. QUALITY OF SERVICE PROVIDED: Compliance with contract requirements, accuracy of reports, evidence of technical excellence and good workmanship, and responsiveness to technical questions/problems.

Excellent Good Fair Poor Unsatisfactory

2. TIMELINESS OF PERFORMANCE: Adherence to delivery schedules including administrative aspects of performance.

Excellent Good Fair Poor Unsatisfactory

3. BUSINESS RELATIONS: History of reasonable and cooperative behavior, evidence of customer satisfaction, flexibility, effective contractor recommended solutions to problems and business-like concern for the interests of the Government.

Excellent Good Fair Poor Unsatisfactory

4. WOULD YOU RECOMMEND THIS VENDOR/CONTRACTOR AGAIN?

YES NO

**QUESTIONNAIRE – CONTRACTOR’S PAST PERFORMANCE
(OFFERORS MUST COMPLETE THIS PORTION)**

KTR #2

AGENCY THAT WORK WAS PERFORMED FOR: _____

POINT OF CONTACT/TELEPHONE NUMBER: _____

PERIOD OF PERFORMANCE OF PREVIOUS WORK: _____

TOTAL DOLLAR AMOUNT OF CONTRACT: _____

BRIEF DESCRIPTION OF DRILLING METHODS PERFORMED: _____

INTERVIEW QUESTIONS

(GOVERNMENT WILL COMPLETE THIS PORTION)

OFFEROR: _____ PHONE NUMBER: _____

REF: COMPANY CONTACTED: _____ POC CONTACTED: _____

PAST EXPERIENCE:

Performed Rotasonic and Auger drilling methods for more than one (1) year, in a Hazardous environment.

YES NO If yes, Contract Number: _____

Firm or Agency work was performed for: _____

Period of Performance: _____

PAST PERFORMANCE:

5. QUALITY OF SERVICE PROVIDED: Compliance with contract requirements, accuracy of reports, evidence of technical excellence and good workmanship, and responsiveness to technical questions/problems.

Excellent Good Fair Poor Unsatisfactory

6. TIMELINESS OF PERFORMANCE: Adherence to delivery schedules including administrative aspects of performance.

Excellent Good Fair Poor Unsatisfactory

7. BUSINESS RELATIONS: History of reasonable and cooperative behavior, evidence of customer satisfaction, flexibility, effective contractor recommended solutions to problems and business-like concern for the interests of the Government.

Excellent Good Fair Poor Unsatisfactory

8. WOULD YOU RECOMMEND THIS VENDOR/CONTRACTOR AGAIN?

YES NO

**QUESTIONNAIRE – CONTRACTOR’S PAST PERFORMANCE
(OFFERORS MUST COMPLETE THIS PORTION)**

KTR #3

AGENCY THAT WORK WAS PERFORMED FOR: _____

POINT OF CONTACT/TELEPHONE NUMBER: _____

PERIOD OF PERFORMANCE OF PREVIOUS WORK: _____

TOTAL DOLLAR AMOUNT OF CONTRACT: _____

BRIEF DESCRIPTION OF DRILLING METHODS PERFORMED: _____

.....
INTERVIEW QUESTIONS

(GOVERNMENT WILL COMPLETE THIS PORTION)

OFFEROR: _____ PHONE NUMBER: _____

REF: COMPANY CONTACTED: _____ POC CONTACTED: _____

PAST EXPERIENCE:

Performed Rotasonic and Auger drilling methods for more than one (1) year, in a Hazardous environment.

YES NO If yes, Contract Number: _____

Firm or Agency work was performed for: _____

Period of Performance: _____

PAST PERFORMANCE:

9. **QUALITY OF SERVICE PROVIDED:** Compliance with contract requirements, accuracy of reports, evidence of technical excellence and good workmanship, and responsiveness to technical questions/problems.

Excellent Good Fair Poor Unsatisfactory

10. **TIMELINESS OF PERFORMANCE:** Adherence to delivery schedules including administrative aspects of performance.

Excellent Good Fair Poor Unsatisfactory

11. **BUSINESS RELATIONS:** History of reasonable and cooperative behavior, evidence of customer satisfaction, flexibility, effective contractor recommended solutions to problems and business-like concern for the interests of the Government.

Excellent Good Fair Poor Unsatisfactory

12. **WOULD YOU RECOMMEND THIS VENDOR/CONTRACTOR AGAIN?**

YES NO

SECTION SF 1449 CONTINUATION SHEET

0001

SUNSHINE ROTOSONIC - COEUR D'ALENE TCRA
 FFP - SEE SCOPE OF WORK, dated Oct. 3, 2001, AND GEOLOGY
 SUPPLEMENT TO THE SCOPE OF SERVICES, Revised: 15 October, 2001.
 PURCHASE REQUEST NUMBER W68MD9-1271-4075

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0001AA		1.00	Lump Sum		
	FFP - Work Plan for all to be done for Time Critical Action work of site investigation of Sunshine Former Tailings Pond.				
	PURCHASE REQUEST NUMBER W68MD9-1271-4075				
				NET AMT	

0002

MONITORING WELL INSTALLATION (ROTONSONIC)
 FFP
 PURCHASE REQUEST NUMBER W68MD9-1271-4075

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0002AA		1.00	Each		
	FFP -				
	Mob/Demob Rotosonic Dril		Total	\$ _____	
	Mob/Demob Water Truck			\$ _____	
	PURCHASE REQUEST NUMBER W68MD9-1271-4075				
				NET AMT	

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0002AB		210.00	Linear Foot		
	FFP - Monitoring Well Drilling & Installation -- (7) 2" casing (30ft/hole)				
	PURCHASE REQUEST NUMBER W68MD9-1271-4075				
				NET AMT	

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0002AC		52.50	Sack		
	FFP - Bentonite Grout Annular Sealant Furnished and Installed (1SK/4ft)				
	PURCHASE REQUEST NUMBER W68MD9-1271-4075				
				NET AMT	

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0002AD		7.00	Sack		
	FFP - Above Ground Monitoring Well Protection Features, Furnished and installed.				
	PURCHASE REQUEST NUMBER W68MD9-1271-4075				
				NET AMT	

0003

DRILL BORINGS (ROTONSONIC)
 FFP
 PURCHASE REQUEST NUMBER W68MD9-1271-4075

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0003AA		660.00	Linear Foot		

FFP - Rotosonic Drilling (11) (60ft/hole) Equipment and Labor
PURCHASE REQUEST NUMBER W68MD9-1271-4075

NET AMT

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0003AB		220.00	Sack		

FFP - Cement Bentonite Grout Furnished & Installed (1SK/3ft) (Supply and
Closure Borings)
PURCHASE REQUEST NUMBER W68MD9-1271-4075

NET AMT

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0003AC		10.00	Hours		

FFP - Standby Time
PURCHASE REQUEST NUMBER W68MD9-1271-4075

NET AMT

0004

PIEZOMETER INSTALLATION (AUGER)
FFP
PURCHASE REQUEST NUMBER W68MD9-1271-4075

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0004AA		1.00	Each		

FFP - (Auger) Mobilization and Demobilization
Mob/Demob Auger Drill \$ _____
Mob/Demob Water Truck \$ _____
PURCHASE REQUEST NUMBER W68MD9-1271-4075

NET AMT

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0004AB		400.00	Linear Foot		

FFP - Piezometer Installation (8) 2" casing (50ft/hole)
PURCHASE REQUEST NUMBER W68MD9-1271-4075

NET AMT

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0004AC		100.00	Sack		

FFP - Bentonite Grout Annular Sealant furnished & Installed (1SK/4ft)
PURCHASE REQUEST NUMBER W68MD9-1271-4075

NET AMT

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0004AD		8.00	Each		

FFP - Above ground Piezometer Protection features, furnished and installed.
PURCHASE REQUEST NUMBER W68MD9-1271-4075

NET AMT

0005

DRILL BORINGS (AUGER)
 FFP
 PURCHASE REQUEST NUMBER W68MD9-1271-4075

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0005AA		600.00	Linear Foot		
FFP - Auger Drilling (12) (50ft/hole)					
PURCHASE REQUEST NUMBER W68MD9-1271-4075				NET AMT	

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0005AB		67.00	Sack		
FFP - Bentonite grout furnished & installed (1SK/3ft) (4 borings)					
PURCHASE REQUEST NUMBER W68MD9-1271-4075				NET AMT	

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0005AC		10.00	Hours		
FFP - Standby Time					
PURCHASE REQUEST NUMBER W68MD9-1271-4075				NET AMT	

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0006		1.00	Lump Sum		
INVESTIGATIVE DERIVED WASTE (IDW)					
FFP					
PURCHASE REQUEST NUMBER W68MD9-1271-4075				NET AMT	

CLAUSES INCORPORATED BY REFERENCE:

52.212-1	Instructions to Offerors--Commercial Items	OCT 2000
52.212-4	Contract Terms and Conditions--Commercial Items	MAY 2001
252.204-7004	Required Central Contractor Registration	MAR 2000

CLAUSES INCORPORATED BY FULL TEXT

52.212-3 OFFEROR REPRESENTATIONS AND CERTIFICATIONS--COMMERCIAL ITEMS (MAY 2001)

(a) Definitions. As used in this provision:

"Emerging small business" means a small business concern whose size is no greater than 50 percent of the numerical size standard for the NAICS code designated.

"Forced or indentured child labor" means all work or service-

(1) Exacted from any person under the age of 18 under the menace of any penalty for its nonperformance and for which the worker does not offer himself voluntarily; or

(2) Performed by any person under the age of 18 pursuant to a contract the enforcement of which can be accomplished by process of penalties.

Service-disabled veteran-owned small business concern--

(1) Means a small business concern--

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

"Small business concern" means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria in 13 CFR Part 121 and size standards in this solicitation.

Veteran-owned small business concern means a small business concern--

(1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and

(2) The management and daily business operations of which are controlled by one or more veterans.

"Women-owned small business concern" means a small business concern--

(1) That is at least 51 percent owned by one or more women or, in the case of any publicly owned business, at least 51 percent of its stock is owned by one or more women; and

(2) Whose management and daily business operations are controlled by one or more women.

"Women-owned business concern" means a concern which is at least 51 percent owned by one or more women; or in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and whose management and daily business operations are controlled by one or more women.

(b) Taxpayer Identification Number (TIN) (26 U.S.C. 6109, 31 U.S.C. 7701). (Not applicable if the offeror is required to provide this information to a central contractor registration database to be eligible for award.)

(1) All offerors must submit the information required in paragraphs (b)(3) through (b)(5) of this provision to comply with debt collection requirements of 31 U.S.C. 7701(c) and 3325(d), reporting requirements of 26 U.S.C. 6041, 6041A, and 6050M, and implementing regulations issued by the Internal Revenue Service (IRS).

(2) The TIN may be used by the Government to collect and report on any delinquent amounts arising out of the offeror's relationship with the Government (31 U.S.C. 7701(c)(3)). If the resulting contract is subject to the payment reporting requirements described in FAR 4.904, the TIN provided hereunder may be matched with IRS records to verify the accuracy of the offeror's TIN.

(3) Taxpayer Identification Number (TIN).

___ TIN:-----

___ TIN has been applied for.

___ TIN is not required because:

Offeror is a nonresident alien, foreign corporation, or foreign partnership that does not have income effectively connected with the conduct of a trade or business in the United States and does not have an office or place of business or a fiscal paying agent in the United States;

Offeror is an agency or instrumentality of a foreign government;

Offeror is an agency or instrumentality of the Federal Government.

(4) Type of organization.

Sole proprietorship;

Partnership;

Corporate entity (not tax-exempt);

Corporate entity (tax-exempt);

Government entity (Federal, State, or local);

Foreign government;

International organization per 26 CFR 1.6049-4;

Other-----

(5) Common parent.

Offeror is not owned or controlled by a common parent;

Name and TIN of common parent:

Name-----

TIN-----

(c) Offerors must complete the following representations when the resulting contract is to be performed inside the United States, its territories or possessions, Puerto Rico, the Trust Territory of the Pacific Islands, or the District of Columbia. Check all that apply.

(1) Small business concern. The offeror represents as part of its offer that it () is, () is not a small business concern.

(2) Veteran-owned small business concern. (Complete only if the offeror represented itself as a small business concern in paragraph (c)(1) of this provision.) The offeror represents as part of its offer that it () is, () is not a veteran-owned small business concern.

(3) Service-disabled veteran-owned small business concern. (Complete only if the offeror represented itself as a veteran-owned small business concern in paragraph (c)(2) of this provision.) The offeror represents as part of its offer that it () is, () is not a service-disabled veteran-owned small business concern.

(4) Small disadvantaged business concern. (Complete only if the offeror represented itself as a small business concern in paragraph (c)(1) of this provision.) The offeror represents, for general statistical purposes, that it () is, () is not a small disadvantaged business concern as defined in 13 CFR 124.1002.

(5) Women-owned small business concern. (Complete only if the offeror represented itself as a small business concern in paragraph (c)(1) of this provision.) The offeror represents that it () is, () is not a women-owned small business concern.

Note: Complete paragraphs (c)(6) and (c)(7) only if this solicitation is expected to exceed the simplified acquisition threshold.

(6) Women-owned business concern (other than small business concern). (Complete only if the offeror is a women-owned business concern and did not represent itself as a small business concern in paragraph (c)(1) of this provision.) The offeror represents that it () is, a women-owned business concern.

(7) Tie bid priority for labor surplus area concerns. If this is an invitation for bid, small business offerors may identify the labor surplus areas in which costs to be incurred on account of manufacturing or production (by offeror or first-tier subcontractors) amount to more than 50 percent of the contract price:

(8) Small Business Size for the Small Business Competitiveness Demonstration Program and for the Targeted Industry Categories under the Small Business Competitiveness Demonstration Program. (Complete only if the offeror has represented itself to be a small business concern under the size standards for this solicitation.)

(i) (Complete only for solicitations indicated in an addendum as being set-aside for emerging small businesses in one of the four designated industry groups (DIGs).) The offeror represents as part of its offer that it * is, * is not an emerging small business.

(ii) (Complete only for solicitations indicated in an addendum as being for one of the targeted industry categories (TICs) or four designated industry groups (DIGs).) Offeror represents as follows:

(A) Offeror's number of employees for the past 12 months (check the Employees column if size standard stated in the solicitation is expressed in terms of number of employees); or

(B) Offeror's average annual gross revenue for the last 3 fiscal years (check the Average Annual Gross Number of Revenues column if size standard stated in the solicitation is expressed in terms of annual receipts).

(Check one of the following):

Average Annual

Number of Employees Gross Revenues

___ 50 or fewer ___ \$1 million or less

___ 51 - 100 ___ \$1,000,001 - \$2 million

___ 101 - 250 ___ \$2,000,001 - \$3.5 million

___ 251 - 500 ___ \$3,500,001 - \$5 million

___ 501 - 750 ___ \$5,000,001 - \$10 million

___ 751 - 1,000 ___ \$10,000,001 - \$17 million

___ Over 1,000 ___ Over \$17 million

(9) (Complete only if the solicitation contains the clause at FAR 52.219-23, Notice of Price Evaluation Adjustment for Small Disadvantaged Business Concerns or FAR 52.219-25, Small Disadvantaged Business Participation Program-Disadvantaged Status and Reporting, and the offeror desires a benefit based on its disadvantaged status.)

(i) General. The offeror represents that either--

(A) It () is, () is not certified by the Small Business Administration as a small disadvantaged business concern and identified, on the date of this representation, as a certified small disadvantaged business concern in the database maintained by the Small Business Administration (PRO-Net), and that no material change in disadvantaged ownership and control has occurred since its certification, and, where the concern is owned by one or more individuals claiming disadvantaged status, the net worth of each individual upon whom the certification is based does not exceed \$750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); or

(B) It () has, () has not submitted a completed application to the Small Business Administration or a Private Certifier to be certified as a small disadvantaged business concern in accordance with 13 CFR 124, Subpart B, and a decision on that application is pending, and that no material change in disadvantaged ownership and control has occurred since its application was submitted.

(ii) Joint Ventures under the Price Evaluation Adjustment for Small Disadvantaged Business Concerns. The offeror represents, as part of its offer, that it is a joint venture that complies with the requirements in 13 CFR 124.1002(f) and that the representation in paragraph (c)(7)(i) of this provision is accurate for the small disadvantaged business concern that is participating in the joint venture. (The offeror shall enter the name of the small disadvantaged business concern that is participating in the joint venture: _____.)

(d) Certifications and representations required to implement provisions of Executive Order 11246--

(1) Previous Contracts and Compliance. The offeror represents that--

(i) It () has, () has not, participated in a previous contract or subcontract subject either to the Equal Opportunity clause of this solicitation, the and

(ii) It () has, () has not, filed all required compliance reports.

(2) Affirmative Action Compliance. The offeror represents that--

(i) It () has developed and has on file, () has not developed and does not have on file, at each establishment, affirmative action programs required by rules and regulations of the Secretary of Labor (41 CFR Subparts 60-1 and 60-2), or

(ii) It () has not previously had contracts subject to the written affirmative action programs requirement of the rules and regulations of the Secretary of Labor.

(e) Certification Regarding Payments to Influence Federal Transactions (31 U.S.C. 1352). (Applies only if the contract is expected to exceed \$100,000.) By submission of its offer, the offeror certifies to the best of its knowledge and belief that no Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress or an employee of a Member of Congress on his or her behalf in connection with the award of any resultant contract.

(f) Buy American Act--Balance of Payments Program Certificate. (Applies only if the clause at Federal Acquisition Regulation (FAR) 52.225-1, Buy American Act--Balance of Payments Program--Supplies, is included in this solicitation.)

(1) The offeror certifies that each end product, except those listed in paragraph (f)(2) of this provision, is a domestic end product as defined in the clause of this solicitation entitled ``Buy American Act--Balance of Payments Program-

-Supplies" and that the offeror has considered components of unknown origin to have been mined, produced, or manufactured outside the United States. The offeror shall list as foreign end products those end products manufactured in the United States that do not qualify as domestic end products.

(2) Foreign End Products:

Line Item No.:-----
Country of Origin:-----

(List as necessary)

(3) The Government will evaluate offers in accordance with the policies and procedures of FAR Part 25.

(g)(1) Buy American Act--North American Free Trade Agreement--Israeli Trade Act--Balance of Payments Program Certificate. (Applies only if the clause at FAR 52.225-3, Buy American Act--North American Free Trade Agreement--Israeli Trade Act--Balance of Payments Program, is included in this solicitation.)

(i) The offeror certifies that each end product, except those listed in paragraph (g)(1)(ii) or (g)(1)(iii) of this provision, is a domestic end product as defined in the clause of this solicitation entitled ``Buy American Act--North American Free Trade Agreement--Israeli Trade Act--Balance of Payments Program" and that the offeror has considered components of unknown origin to have been mined, produced, or manufactured outside the United States.

(ii) The offeror certifies that the following supplies are NAFTA country end products or Israeli end products as defined in the clause of this solicitation entitled ``Buy American Act--North American Free Trade Agreement--Israeli Trade Act--Balance of Payments Program":

NAFTA Country or Israeli End Products

Line Item No.:-----
Country of Origin:-----

(List as necessary)

(iii) The offeror shall list those supplies that are foreign end products (other than those listed in paragraph (g)(1)(ii) of this provision) as defined in the clause of this solicitation entitled ``Buy American Act--North American Free Trade Agreement--Israeli Trade Act--Balance of Payments Program." The offeror shall list as other foreign end products those end products manufactured in the United States that do not qualify as domestic end products.

Other Foreign End Products

Line Item No.:-----
Country of Origin:-----

(List as necessary)

(iv) The Government will evaluate offers in accordance with the policies and procedures of FAR Part 25.

(2) Buy American Act--North American Free Trade Agreements--Israeli Trade Act--Balance of Payments Program Certificate, Alternate I (Feb 2000). If Alternate I to the clause at FAR 52.225-3 is included in this solicitation, substitute the following paragraph (g)(1)(ii) for paragraph (g)(1)(ii) of the basic provision:

(g)(1)(ii) The offeror certifies that the following supplies are Canadian end products as defined in the clause of this solicitation entitled ``Buy American Act--North American Free Trade Agreement--Israeli Trade Act--Balance of Payments Program":

Canadian End Products

Line Item No.:-----

(List as necessary)

(3) Buy American Act--North American Free Trade Agreements--Israeli Trade Act--Balance of Payments Program Certificate, Alternate II (Feb 2000). If Alternate II to the clause at FAR 52.225-3 is included in this solicitation, substitute the following paragraph (g)(1)(ii) for paragraph (g)(1)(ii) of the basic provision:

(g)(1)(ii) The offeror certifies that the following supplies are Canadian end products or Israeli end products as defined in the clause of this solicitation entitled ``Buy American Act--North American Free Trade Agreement--Israeli Trade Act--Balance of Payments Program":

Canadian or Israeli End Products

Line Item No.:-----

Country of Origin:-----

(List as necessary)

(4) Trade Agreements Certificate. (Applies only if the clause at FAR 52.225-5, Trade Agreements, is included in this solicitation.)

(i) The offeror certifies that each end product, except those listed in paragraph (g)(4)(ii) of this provision, is a U.S.-made, designated country, Caribbean Basin country, or NAFTA country end product, as defined in the clause of this solicitation entitled ``Trade Agreements."

(ii) The offeror shall list as other end products those end products that are not U.S.-made, designated country, Caribbean Basin country, or NAFTA country end products.

Other End Products

Line Item No.:-----

Country of Origin:-----

(List as necessary)

(iii) The Government will evaluate offers in accordance with the policies and procedures of FAR Part 25. For line items subject to the Trade Agreements Act, the Government will evaluate offers of U.S.-made, designated country, Caribbean Basin country, or NAFTA country end products without regard to the restrictions of the Buy American Act or the Balance of Payments Program. The Government will consider for award only offers of U.S.-made, designated country, Caribbean Basin country, or NAFTA country end products unless the Contracting Officer determines that there are no offers for such products or that the offers for such products are insufficient to fulfill the requirements of the solicitation.

(h) Certification Regarding Debarment, Suspension or Ineligibility for Award (Executive Order 12549). The offeror certifies, to the best of its knowledge and belief, that --

(1) The offeror and/or any of its principals () are, () are not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency, and

(2) () Have, () have not, within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to

obtain, or performing a Federal, state or local government contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and () are, () are not presently indicted for, or otherwise criminally or civilly charged by a Government entity with, commission of any of these offenses.

(i) Certification Regarding Knowledge of Child Labor for Listed End Products (Executive Order 13126). [The Contracting Officer must list in paragraph (i)(1) any end products being acquired under this solicitation that are included in the List of Products Requiring Contractor Certification as to Forced or Indentured Child Labor, unless excluded at 22.1503(b).]

(1) Listed end products.

Listed End Product

Listed Countries of Origin

(2) Certification. (If the Contracting Officer has identified end products and countries of origin in paragraph (i)(1) of this provision, then the offeror must certify to either (i)(2)(i) or (i)(2)(ii) by checking the appropriate block.)

() (i) The offeror will not supply any end product listed in paragraph (i)(1) of this provision that was mined, produced, or manufactured in the corresponding country as listed for that product.

() (ii) The offeror may supply an end product listed in paragraph (i)(1) of this provision that was mined, produced, or manufactured in the corresponding country as listed for that product. The offeror certifies that it has made a good faith effort to determine whether forced or indentured child labor was used to mine, produce, or manufacture any such end product furnished under this contract. On the basis of those efforts, the offeror certifies that it is not aware of any such use of child labor.

(j) Certification Regarding Debarment, Suspension or Ineligibility for Award (Executive Order 12549). The offeror certifies, to the best of its knowledge and belief, that--

(1) The offeror and/or any of its principals () are, () are not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency; and

(2) () Have, () have not, within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a Federal, state or local government contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and () are, () are not presently indicted for, or otherwise criminally or civilly charged by a Government entity with, commission of any of these offenses.

(End of provision)

(a) The Contractor shall comply with the following FAR clauses, which are incorporated in this contract by reference, to implement provisions of law or executive orders applicable to acquisitions of commercial items:

(1) 52.222-3, Convict Labor (E.O. 11755).

(2) 52.233-3, Protest after Award (31 U.S.C. 3553).

(b) The Contractor shall comply with the FAR clauses in this paragraph (b) that the Contracting Officer has indicated as being incorporated in this contract by reference to implement provisions of law or Executive orders applicable to acquisitions of commercial items or components:

(Contracting Officer shall check as appropriate.)

___ (1) 52.203-6, Restrictions on Subcontractor Sales to the Government, with Alternate I (41 U.S.C. 253g and 10 U.S.C. 2402).

___ (2) 52.219-3, Notice of HUBZone Small Business Set-Aside (Jan 1999).

___ (3) 52.219-4, Notice of Price Evaluation Preference for HUBZone Small Business Concerns (Jan 1999) (if the offeror elects to waive the preference, it shall so indicate in its offer).

___ (4) (i) 52.219-5, Very Small Business Set-Aside (Pub. L. 103-403, section 304, Small Business Reauthorization and Amendments Act of 1994).

___ (ii) Alternate I to 52.219-5.

___ (iii) Alternate II to 52.219-5.

___ (5) 52.219-8, Utilization of Small Business Concerns (15 U.S.C. 637 (d)(2) and (3)).

___ (6) 52.219-9, Small Business Subcontracting Plan (15 U.S.C. 637 (d)(4)).

___ (7) 52.219-14, Limitations on Subcontracting (15 U.S.C. 637(a)(14)).

___ (8)(i) 52.219-23, Notice of Price Evaluation Adjustment for Small Disadvantaged Concerns (Pub. L. 103-355, section 7102, and 10 U.S.C. 2323) (if the offeror elects to waive the adjustment, it shall so indicate in its offer).

___ (ii) Alternate I of 52.219-23.

___ (9) 52.219-25, Small Disadvantaged Business Participation Program--Disadvantaged Status and Reporting (Pub. L. 103-355, section 7102, and 10 U.S.C. 2323).

___ (10) 52.219-26, Small Disadvantaged Business Participation Program--Incentive Subcontracting (Pub. L. 103-355, section 7102, and 10 U.S.C. 2323).

XX (11) 52.222-21, Prohibition of Segregated Facilities (Feb 1999).

XX (12) 52.222-26, Equal Opportunity (E.O. 11246).

XX (13) 52.222-35, Affirmative Action for Disabled Veterans and Veterans of the Vietnam Era (38 U.S.C. 4212).

XX (14) 52.222-36, Affirmative Action for Workers with Disabilities (29 U.S.C. 793).

___ (15) 52.222-37, Employment Reports on Disabled Veterans and Veterans of the Vietnam Era (38 U.S.C. 4212).

___ (16) 52.222-19, Child Labor--Cooperation with Authorities and Remedies (E.O. 13126).

___ (17)(i) 52.223-9, Estimate of Percentage of Recovered Material Content for EPA-Designated Products (42 U.S.C. 6962(c)(3)(A)(ii)).

___ (ii) Alternate I of 52.223-9 (42 U.S.C. 6962(i)(2)(C)).

___(18) 52.225-1, Buy American Act--Balance of Payments Program--Supplies (41 U.S.C. 10a-10d).

___(19)(i) 52.225-3, Buy American Act--North American Free Trade Agreement--Israeli Trade Act--Balance of Payments Program (41 U.S.C. 10a-10d, 19 U.S.C. 3301 note, 19 U.S.C. 2112 note).

___(ii) Alternate I of 52.225-3.

___(iii) Alternate II of 52.225-3.

___(20) 52.225-5, Trade Agreements (19 U.S.C. 2501, et seq., 19 U.S.C. 3301 note).

___(21) 52.225-13, Restriction on Certain Foreign Purchases (E.O. 12722, 12724, 13059, 13067, 13121, and 13129).

___(22) 52.225-15, Sanctioned European Union Country End Products (E.O. 12849).

___(23) 52.225-16, Sanctioned European Union Country Services (E.O.12849).

XX (24) 52.232-33, Payment by Electronic Funds Transfer--Central Contractor Registration (31 U.S.C. 3332).

___(25) 52.232-34, Payment by Electronic Funds Transfer--Other than Central Contractor Registration (31 U.S.C. 3332).

___(26) 52.232-36, Payment by Third Party (31 U.S.C. 3332).

___ (27) 52.239-1, Privacy or Security Safeguards (5 U.S.C. 552a).

___ (28) 52.247-64, Preference for Privately Owned U.S.-Flag Commercial Vessels (46 U.S.C. 1241).

(c) The Contractor shall comply with the FAR clauses in this paragraph (c), applicable to commercial services, which the Contracting Officer has indicated as being incorporated in this contract by reference to implement provisions of law or executive orders applicable to acquisitions of commercial items or components:

(Contracting Officer check as appropriate.)

XX (1) 52.222-41, Service Contract Act of 1965, As amended (41 U.S.C. 351, et. seq.).

XX (2) 52.222-42, Statement of Equivalent Rates for Federal Hires (29 U.S.C. 206 and 41 U.S.C. 351, et. seq.).

XX (3) 52.222-43, Fair Labor Standards Act and Service Contract Act -- Price Adjustment (Multiple Year and Option Contracts) (29 U.S.C.206 and 41 U.S.C. 351, et seq.).

XX (4) 52.222-44, Fair Labor Standards Act and Service Contract Act - Price Adjustment (29 U.S.C. 206 and 41 U.S.C. 351, et seq.).

XX (5) 52.222-47, SCA Minimum Wages and Fringe Benefits Applicable to Successor Contract Pursuant to Predecessor Contractor Collective Bargaining Agreement (CBA) (41 U.S.C. 351, et seq.).

(d) Comptroller General Examination of Record. The Contractor shall comply with the provisions of this paragraph (d) if this contract was awarded using other than sealed bid, is in excess of the simplified acquisition threshold, and does not contain the clause at 52.215-2, Audit and Records--Negotiation.

(1) The Comptroller General of the United States, or an authorized representative of the Comptroller General, shall have access to and right to examine any of the Contractor's directly pertinent records involving transactions related to this contract.

(2) The Contractor shall make available at its offices at all reasonable times the records, materials, and other evidence for examination, audit, or reproduction, until 3 years after final payment under this contract or for any shorter period specified in FAR Subpart 4.7, Contractor Records Retention, of the other clauses of this contract. If this contract is completely or partially terminated, the records relating to the work terminated shall be made available for 3 years after any resulting final termination settlement. Records relating to appeals under the disputes clause or to litigation or the settlement of claims arising under or relating to this contract shall be made available until such appeals, litigation, or claims are finally resolved.

(3) As used in this clause, records include books, documents, accounting procedures and practices, and other data, regardless of type and regardless of form. This does not require the Contractor to create or maintain any record that the Contractor does not maintain in the ordinary course of business or pursuant to a provision of law.

(e) Notwithstanding the requirements of the clauses in paragraphs (a), (b), (c) or (d) of this clause, the Contractor is not required to include any FAR clause, other than those listed below (and as may be required by an addenda to this paragraph to establish the reasonableness of prices under Part 15), in a subcontract for commercial items or commercial components--

(1) 52.222-26, Equal Opportunity (E.O. 11246);

(2) 52.222-35, Affirmative Action for Disabled Veterans and Veterans of the Vietnam Era (38 U.S.C. 2012(a));

(3) 52.222-36, Affirmative Action for Workers with Disabilities (29 U.S.C. 793);

(4) 52.247-64, Preference for Privately-Owned U.S.- Flag Commercial Vessels (46 U.S.C. 1241)(flow down not required for subcontracts awarded beginning May 1, 1996)., and

(5) 52.222-41, Service Contract Act of 1965, As Amended (41 U.S.C. 351, et seq.).

(End of clause)

52.252-1 SOLICITATION PROVISIONS INCORPORATED BY REFERENCE (FEB 1998)

This solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. The offeror is cautioned that the listed provisions may include blocks that must be completed by the offeror and submitted with its quotation or offer. In lieu of submitting the full text of those provisions, the offeror may identify the provision by paragraph identifier and provide the appropriate information with its quotation or offer. Also, the full text of a solicitation provision may be accessed electronically at this/these address(es):

FAR: <http://www.arnet.gov/far> or <http://farsite.hill.af.mil>

DFAR: <http://www.acq.osd.mil/dp/dars/dfars/dfars.html>

52.252-2 CLAUSES INCORPORATED BY REFERENCE (FEB 1998)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es):

FAR: <http://www.arnet.gov/far> or <http://farsite.hill.af.mil>

DFAR: <http://www.acq.osd.mil/dp/dars/dfars/dfars.html>

WAGE DETERMINATION #94-2159 REV (17) dated 3 July 2001 is attached to and made a part of this order.

WAGE DETERMINATION NO: 94-2159 REV (17) AREA: ID,STATEWIDE
 REGISTER OF WAGE DETERMINATIONS UNDER | U.S. DEPARTMENT OF LABOR
 FOR OFFICIAL USE ONLY BY FEDERAL AGENCIES PARTICIPATING IN MOU WITH DOL
 WASHINGTON D.C. 20210

William W.Gross	Division of	Wage Determination No.: 1994-2159	
Director	Wage Determinations	Revision No.: 17	
		Date Of Last Revision: 07/03/2001	

State: IdahoArea: Idaho Statewide

Fringe Benefits Required Follow the Occupational Listing

OCCUPATION TITLE	MINIMUM WAGE RATE
Administrative Support and Clerical Occupations	
Accounting Clerk I	7.22
Accounting Clerk II	8.87
Accounting Clerk III	9.98
Accounting Clerk IV	10.89
Court Reporter	15.67
Dispatcher, Motor Vehicle	12.77
Document Preparation Clerk	8.68
Duplicating Machine Operator	8.68
Film/Tape Librarian	8.80
General Clerk I	7.38
General Clerk II	8.30
General Clerk III	9.11
General Clerk IV	10.10
Housing Referral Assistant	11.28
Key Entry Operator I	8.43
Key Entry Operator II	9.24
Messenger (Courier)	8.21
Order Clerk I	9.03
Order Clerk II	9.91
Personnel Assistant (Employment) I	7.91
Personnel Assistant (Employment) II	8.77
Personnel Assistant (Employment) III	9.77
Personnel Assistant (Employment) IV	10.85
Production Control Clerk	12.68
Rental Clerk	10.03
Scheduler, Maintenance	10.03
Secretary I	10.03
Secretary II	10.56
Secretary III	11.28

Secretary IV	12.52
Secretary V	13.81
Service Order Dispatcher	11.79
Stenographer I	13.59
Stenographer II	15.11
Supply Technician	12.52
Survey Worker (Interviewer)	8.51
Switchboard Operator-Receptionist	8.80
Test Examiner	10.56
Test Proctor	10.56
Travel Clerk I	8.63
Travel Clerk II	9.06
Travel Clerk III	9.83
Word Processor I	9.41
Word Processor II	9.71
Word Processor III	10.31
Automatic Data Processing Occupations	
Computer Data Librarian	8.80
Computer Operator I	8.60
Computer Operator II	11.63
Computer Operator III	13.59
Computer Operator IV	16.60
Computer Operator V	16.75
Computer Programmer I (1)	12.87
Computer Programmer II (1)	18.39
Computer Programmer III (1)	19.40
Computer Programmer IV (1)	22.20
Computer Systems Analyst I (1)	16.78
Computer Systems Analyst II (1)	19.58
Computer Systems Analyst III (1)	23.37
Peripheral Equipment Operator	10.48
Automotive Service Occupations	
Automotive Body Repairer, Fiberglass	14.82
Automotive Glass Installer	12.83
Automotive Worker	11.54
Electrician, Automotive	12.97
Mobile Equipment Servicer	10.37
Motor Equipment Metal Mechanic	12.97
Motor Equipment Metal Worker	11.54
Motor Vehicle Mechanic	12.97
Motor Vehicle Mechanic Helper	9.85
Motor Vehicle Upholstery Worker	10.90
Motor Vehicle Wrecker	11.54
Painter, Automotive	12.32
Radiator Repair Specialist	12.52
Tire Repairer	10.02
Transmission Repair Specialist	12.97
Food Preparation and Service Occupations	
Baker	10.33
Cook I	7.70
Cook II	8.94
Dishwasher	7.20
Food Service Worker	6.57
Meat Cutter	12.63
Waiter/Waitress	7.64
Furniture Maintenance and Repair Occupations	
Electrostatic Spray Painter	12.32
Furniture Handler	10.87
Furniture Refinisher	12.32
Furniture Refinisher Helper	10.87
Furniture Repairer, Minor	10.90
Upholsterer	12.32

General Services and Support Occupations	
Cleaner, Vehicles	7.20
Elevator Operator	7.69
Gardener	9.84
House Keeping Aid I	7.24
House Keeping Aid II	7.64
Janitor	7.69
Laborer, Grounds Maintenance	8.33
Maid or Houseman	6.42
Pest Controller	9.39
Refuse Collector	10.16
Tractor Operator	10.95
Window Cleaner	8.11
Health Occupations	
Dental Assistant	10.93
Emergency Medical Technician (EMT)/Paramedic/Ambulance Driver	11.87
Licensed Practical Nurse I	10.02
Licensed Practical Nurse II	11.23
Licensed Practical Nurse III	12.57
Medical Assistant	9.77
Medical Laboratory Technician	13.06
Medical Record Clerk	11.24
Medical Record Technician	13.54
Nursing Assistant I	7.63
Nursing Assistant II	8.58
Nursing Assistant III	9.36
Nursing Assistant IV	10.50
Pharmacy Technician	12.19
Phlebotomist	11.24
Registered Nurse I	16.57
Registered Nurse II	18.89
Registered Nurse II, Specialist	18.89
Registered Nurse III	22.50
Registered Nurse III, Anesthetist	40.43
Registered Nurse IV	25.20
Information and Arts Occupations	
Audiovisual Librarian	14.70
Exhibits Specialist I	11.27
Exhibits Specialist II	14.41
Exhibits Specialist III	16.15
Illustrator I	10.01
Illustrator II	12.80
Illustrator III	14.34
Librarian	16.23
Library Technician	8.80
Photographer I	9.75
Photographer II	12.46
Photographer III	13.97
Photographer IV	17.18
Photographer V	21.12
Laundry, Dry Cleaning, Pressing and Related Occupations	
Assembler	6.50
Counter Attendant	6.47
Dry Cleaner	7.69
Finisher, Flatwork, Machine	6.47
Presser, Hand	6.47
Presser, Machine, Drycleaning	6.47
Presser, Machine, Shirts	6.47
Presser, Machine, Wearing Apparel, Laundry	6.47
Sewing Machine Operator	8.18
Tailor	8.68
Washer, Machine	6.78

Machine Tool Operation and Repair Occupations	
Machine-Tool Operator (Toolroom)	12.32
Tool and Die Maker	18.45
Material Handling and Packing Occupations	
Forklift Operator	10.75
Fuel Distribution System Operator	10.59
Material Coordinator	12.68
Material Expediter	12.68
Material Handling Laborer	9.67
Order Filler	10.95
Production Line Worker (Food Processing)	10.35
Shipping Packer	10.20
Shipping/Receiving Clerk	10.86
Stock Clerk (Shelf Stocker; Store Worker II)	11.54
Store Worker I	9.04
Tools and Parts Attendant	10.39
Warehouse Specialist	10.39
Mechanics and Maintenance and Repair Occupations	
Aircraft Mechanic	17.00
Aircraft Mechanic Helper	11.00
Aircraft Quality Control Inspector	18.31
Aircraft Servicer	14.00
Aircraft Worker	14.82
Appliance Mechanic	12.32
Bicycle Repairer	9.30
Cable Splicer	14.91
Carpenter, Maintenance	13.75
Carpet Layer	13.27
Electrician, Maintenance	17.15
Electronics Technician, Maintenance I	13.85
Electronics Technician, Maintenance II	20.00
Electronics Technician, Maintenance III	23.69
Fabric Worker	11.62
Fire Alarm System Mechanic	12.97
Fire Extinguisher Repairer	10.97
Fuel Distribution System Mechanic	12.97
General Maintenance Worker	11.54
Heating, Refrigeration and Air Conditioning Mechanic	14.59
Heavy Equipment Mechanic	15.48
Heavy Equipment Operator	14.56
Instrument Mechanic	17.86
Laborer	9.69
Locksmith	13.14
Machinery Maintenance Mechanic	14.04
Machinist, Maintenance	14.87
Maintenance Trades Helper	9.85
Millwright	15.80
Office Appliance Repairer	13.51
Painter, Aircraft	12.32
Painter, Maintenance	12.32
Pipefitter, Maintenance	17.54
Plumber, Maintenance	16.67
Pneudraulic Systems Mechanic	12.97
Rigger	13.88
Scale Mechanic	11.54
Sheet-Metal Worker, Maintenance	13.13
Small Engine Mechanic	11.54
Telecommunication Mechanic I	14.91
Telecommunication Mechanic II	17.03
Telephone Lineman	14.91
Welder, Combination, Maintenance	12.97
Well Driller	14.92

Woodcraft Worker	13.88
Woodworker	10.48
Miscellaneous Occupations	
Animal Caretaker	7.44
Carnival Equipment Operator	8.50
Carnival Equipment Repairer	10.27
Carnival Worker	7.20
Cashier	7.14
Desk Clerk	6.94
Embalmer	16.83
Lifeguard	9.02
Mortician	19.35
Park Attendant (Aide)	11.32
Photofinishing Worker (Photo Lab Tech., Darkroom Tech)	8.69
Recreation Specialist	11.95
Recycling Worker	10.31
Sales Clerk	7.80
School Crossing Guard (Crosswalk Attendant)	8.28
Sport Official	9.02
Survey Party Chief (Chief of Party)	14.81
Surveying Aide	10.04
Surveying Technician (Instr. Person/Surveyor Asst./Instr.)	13.46
Swimming Pool Operator	10.01
Vending Machine Attendant	9.77
Vending Machine Repairer	11.51
Vending Machine Repairer Helper	8.50
Personal Needs Occupations	
Child Care Attendant	6.52
Child Care Center Clerk	10.70
Chore Aid	7.39
Homemaker	7.25
Plant and System Operation Occupations	
Boiler Tender	13.83
Sewage Plant Operator	12.97
Stationary Engineer	14.91
Ventilation Equipment Tender	10.47
Water Treatment Plant Operator	12.97
Protective Service Occupations	
Alarm Monitor	10.24
Corrections Officer	18.00
Court Security Officer	19.14
Detention Officer	18.00
Firefighter	18.02
Guard I	8.92
Guard II	12.43
Police Officer	21.40
Stevedoring/Longshoremen Occupations	
Blocker and Bracer	11.50
Hatch Tender	13.09
Line Handler	11.22
Stevedore I	11.18
Stevedore II	12.23
Technical Occupations	
Air Traffic Control Specialist, Center (2)	27.00
Air Traffic Control Specialist, Station (2)	18.62
Air Traffic Control Specialist, Terminal (2)	20.50
Archeological Technician I	12.23
Archeological Technician II	13.67
Archeological Technician III	16.95
Cartographic Technician	13.46
Civil Engineering Technician	15.73
Computer Based Training (CBT) Specialist/ Instructor	15.68

Drafter I	12.98
Drafter II	14.13
Drafter III	18.04
Drafter IV	20.17
Engineering Technician I	10.72
Engineering Technician II	11.68
Engineering Technician III	14.91
Engineering Technician IV	16.72
Engineering Technician V	19.62
Engineering Technician VI	20.69
Environmental Technician	15.91
Flight Simulator/Instructor (Pilot)	17.31
Graphic Artist	15.45
Instructor	15.68
Laboratory Technician	13.06
Mathematical Technician	16.72
Paralegal/Legal Assistant I	11.54
Paralegal/Legal Assistant II	13.52
Paralegal/Legal Assistant III	15.69
Paralegal/Legal Assistant IV	20.00
Photooptics Technician	19.22
Technical Writer	19.46
Unexploded (UXO) Safety Escort	17.16
Unexploded (UXO) Sweep Personnel	17.16
Unexploded Ordnance (UXO) Technician I	17.16
Unexploded Ordnance (UXO) Technician II	20.76
Unexploded Ordnance (UXO) Technician III	24.88
Weather Observer, Combined Upper Air and Surface Programs (3)	14.74
Weather Observer, Senior (3)	18.01
Weather Observer, Upper Air (3)	14.74
Transportation/ Mobile Equipment Operation Occupations	
Bus Driver	10.60
Parking and Lot Attendant	7.01
Shuttle Bus Driver	9.28
Taxi Driver	8.49
Truckdriver, Heavy Truck	13.43
Truckdriver, Light Truck	9.28
Truckdriver, Medium Truck	10.16
Truckdriver, Tractor-Trailer	13.43

ALL OCCUPATIONS LISTED ABOVE RECEIVE THE FOLLOWING BENEFITS:

HEALTH & WELFARE: \$2.02 an hour or \$80.80 a week or \$350.13 a month.

VACATION: 2 weeks paid vacation after 1 year of service with a contractor or successor; 3 weeks after 5 years, and 4 weeks after 15 years. Length of service includes the whole span of continuous service with the present contractor or successor, wherever employed, and with the predecessor contractors in the performance of similar work at the same Federal facility. (Reg. 29 CFR 4.173)

HOLIDAYS: A minimum of ten paid holidays per year: New Year's Day, Martin Luther King Jr.'s Birthday, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Columbus Day, Veterans' Day, Thanksgiving Day, and Christmas Day. (A contractor may substitute for any of the named holidays another day off with pay in accordance with a plan communicated to the employees involved.) (See 29 CFR 4.174)

THE OCCUPATIONS WHICH HAVE PARENTHESES AFTER THEM RECEIVE THE FOLLOWING BENEFITS (as numbered):

- 1) Does not apply to employees employed in a bona fide executive, administrative, or professional capacity as defined and delineated in 29 CFR 541. (See CFR 4.156)
- 2) APPLICABLE TO AIR TRAFFIC CONTROLLERS ONLY - NIGHT DIFFERENTIAL: An employee is entitled to pay for all work performed between the hours of 6:00 P.M. and 6:00 A.M. at the rate of basic pay plus a night pay differential amounting to 10 percent of the rate of basic pay.
- 3) WEATHER OBSERVERS - NIGHT PAY & SUNDAY PAY: If you work at night as part of a regular tour of duty, you will earn a night differential and receive an additional 10%

of basic pay for any hours worked between 6pm and 6am. If you are a full-time employed (40 hours a week) and Sunday is part of your regularly scheduled workweek, you are paid at your rate of basic pay plus a Sunday premium of 25% of your basic rate for each hour of Sunday work which is not overtime (i.e. occasional work on Sunday outside the normal tour of duty is considered overtime work).

HAZARDOUS PAY DIFFERENTIAL: An 8 percent differential is applicable to employees employed in a position that represents a high degree of hazard including working with or in close proximity to explosives and incendiary materials involved in research, testing, manufacturing, inspection, renovation, maintenance, and disposal. Such as: Screening, blending, dying, mixing, and pressing of sensitive explosives pyrotechnic compositions such as lead azide, black powder and photoflash powder. All dry-house activities involving propellants or explosives. Demilitarization, modification, renovation, demolition, and maintenance operations on sensitive explosives and incendiary materials. All operations involving regarding and cleaning of artillery ranges.

A 4 percent differential is applicable to employees employed in a position that represents a low degree of hazard. Including working with or in close proximity to explosives and incendiary materials which involves potential injury such as laceration of hands, face, or arms of the employee engaged in the operation and, possibly adjacent employees, irritation of the skin, minor burns and the like; minimal damage to immediate or adjacent work area or equipment being used.

All operations involving, unloading, storage, and hauling of explosive and incendiary ordnance material other than small arms ammunition. (Distribution of raw nitroglycerine is covered under high degree hazard.)

**** UNIFORM ALLOWANCE ****

If employees are required to wear uniforms in the performance of this contract (either by the terms of the Government contract, by the employer, by the state or local law, etc.), the cost of furnishing such uniforms and maintaining (by laundering or dry cleaning) such uniforms is an expense that may not be borne by an employee where such cost reduces the hourly rate below that required by the wage determination. The Department of Labor will accept payment in accordance with the following standards as compliance:

The contractor or subcontractor is required to furnish all employees with an adequate number of uniforms without cost or to reimburse employees for the actual cost of the uniforms. In addition, where uniform cleaning and maintenance is made the responsibility of the employee, all contractors and subcontractors subject to this wage determination shall (in the absence of a bona fide collective bargaining agreement providing for a different amount, or the furnishing of contrary affirmative proof as to the actual cost), reimburse all employees for such cleaning and maintenance at a rate of \$3.35 per week (or \$.67 cents per day). However, in those instances where the uniforms furnished are made of "wash and wear" materials, may be routinely washed and dried with other personal garments, and do not require any special treatment such as dry cleaning, daily washing, or commercial laundering in order to meet the cleanliness or appearance standards set by the terms of the Government contract, by the contractor, by law, or by the nature of the work, there is no requirement that employees be reimbursed for uniform maintenance costs.

**** NOTES APPLYING TO THIS WAGE DETERMINATION ****

Source of Occupational Title and Descriptions:

The duties of employees under job titles listed are those described in the "Service Contract Act Directory of Occupations," Fourth Edition, January 1993, as amended by the Third Supplement, dated March 1997, unless otherwise indicated. This publication may be obtained from the Superintendent of Documents, at 202-783-3238, or by writing to the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Copies of specific job descriptions may also be obtained from the appropriate contracting officer.

REQUEST FOR AUTHORIZATION OF ADDITIONAL CLASSIFICATION AND WAGE RATE {Standard Form 1444 (SF 1444)}

Conformance Process:

The contracting officer shall require that any class of service employee which is not listed herein and which is to be employed under the contract (i.e., the work to be performed is not performed by any classification listed in the wage determination),



SCOPE OF WORK

Coeur d'Alene Basin Time Critical Removal Action

Proposed Sunshine Repository
Preliminary Site Investigation

Final

October 3, 2001

Prepared by:



Seattle District Corps of Engineers



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STATEMENT OF WORK

Coeur d'Alene Basin
Time Critical Action
Proposed Sunshine Repository
Big Creek, Idaho

1. INTRODUCTION

The Seattle District, U.S. Army Corps of Engineers (USACE), is assisting the U.S. Environmental Protection Agency (EPA) with conducting an investigation for the feasibility of a repository at the Sunshine Mine former tailings pond for remedial activities, Big Creek, Shoshone County, Idaho. Soils and groundwater at the site are suspected to be contaminated with heavy metals and possible explosive compounds. All work shall be performed in accordance with all applicable federal, state, and local regulations and requirements, the Geology Supplement to the Scope of Services (Attachment 1), USACE Engineering Manual (EM) 1110-1-1804 01 January 2001. The contractor shall immediately inform the USACE Project Manager of any discrepancies between these regulations and requirements and this Statement of Work (SOW).

This SOW describes, in general terms, the work required to be performed by Contractor personnel, which includes, to install soil borings, construct monitoring wells and piezometers, collect soil samples for geotechnical and chemical analysis to be used by the USACE to perform these analyses, obtain standard penetration test (SPT) for settlement analysis, and possible in-situ tests (Table 1). The new wells will be installed in the unconfined aquifer adjacent to the former tailings pond structure. Installation of these wells will follow Idaho State Regulations.

The Geology Supplement to the Scope of Services describes in greater detail the work to be performed by contractor personnel. In the event differences between the SOW and the Geology Supplement to the Scope of Services are identified, the SOW shall prevail and the contractor shall implement the SOW.

Table 1: General Activities

Item	Depths (ft)	Base #	Base Total (ft)	Remarks
Monitoring Wells Drilling & Installation (Rotosonic)	30	7	210	Installed along perimeter of site.
Borings (Rotosonic)	60	11	660	
Piezometers Installation	50	8	400	Installed in 8 of the 12 auger borings.
Borings (Auger)	50	12	600	

1.1. Background

A Remedial Investigation/Feasibility Study (RI/FS) has been completed for the Coeur d'Alene Basin to investigate and evaluate contamination due to mining activities. The dominant site is the Bunker Hill Superfund Site. The Sunshine Former Tailings Pond is located in Shoshone County, Idaho, just off of I90 near Big Creek, near Bunker Hill. The Bunker Hill Mine operated from 1895 until 1981 and then was reopened in 1988. The adjacent lead and zinc smelter complex operated from 1916 until 1981. The Bunker Hill Mine operation grew to a maximum milling capacity of 2,500 tons of ore per day, typically employed approximately 2,000 people, and produced one-fifth of the refined lead, zinc, and silver in the U.S. Facility activities stopped in 1981 from the combined effects of lower market prices and increased operations costs.



From 1886 until 1917, the lead and silver concentrates produced at the Bunker Hill Complex were shipped to offsite smelters for processing. Construction of the lead smelter began in 1916 and the first blast furnace went online in 1917 producing lead, cadmium, silver, and alloys of these heavy metals. Smelting operations resulted in fugitive and stack emission of metals and sulfur dioxide that were deposited throughout the site.

The electrolytic zinc plant was put into production at the site in 1928. Sullivan Mining Company operated the zinc plant until 1955. Both the Bunker Hill and Sullivan Mining Company and the Hecla Mining Company each had a 50 percent interest in the Sullivan Mining Company. By 1956, the zinc plant was wholly owned by Bunker Hill. Two sulfuric acid plants, a phosphoric acid plant, and a fertilizer plant were added to the zinc plant. A sulfuric acid plant was added to the lead plant. The mining and metallurgical complex closed in 1981. The Bunker Hill Mine has subsequently re-opened.

The mining and metallurgical complexes (also called the Industrial Complex) and the surrounding communities and hillsides were placed on the National Priorities List (NPL) of hazardous waste sites in 1983 and called the Bunker Hill Superfund Site. The original focus of cleanup activities have been concentrated in the Smelterville and Kellogg area, an area encompassing approximately 21 square miles. However, the focus is now being expanded to include the entire Coeur d'Alene River Drainage Basin from the headwaters in Idaho-Montana border to the Idaho-Washington border, including Lake Coeur d'Alene to. Mining activities throughout the area are also known to have resulted in metals contamination in rivers, floodplains, residence and common areas. The Coeur d'Alene Basin TCRA are mostly intended to address removal of contaminants from yards and common areas. A repository for the disposal of the resulting waste is needed to allow continued completion of this Time Critical Removal Actions (TCRA).

Proposed exploration shall collect data that shall assist in the engineering evaluation of the site for suitable use. This project is considered time-critical task. This project is considered a Time-Critical Removal Action by the Environmental Protection Agency (EPA) and the Idaho Department of Environmental Quality (IDEQ). Planned use of the site is by 01 June 2002. Therefore, all subsurface exploration must begin by no later than mid- to late October 2001. This will ensure all geotechnical and chemical laboratory analytical results are received by mid-December 2001 to meet design schedule needs.

1.2. Site History

The former Sunshine Mine Tailings Pond Repository Site (SMTPR) is located at the confluence of Big Creek and the Couer d'Alene River, approximately 4 miles east of Kellogg, Idaho. It is bounded on the east by Big Creek Road (County Route 264), on the west by Big Creek, on the north by the Coeur d'Alene River and the Union Pacific Railroad right-of-way, and on the south by the active Sunshine Mine Tailings Pond. If feasible, the SMTPR will be constructed on an old tailings pond, which is not in use and is filled with mine tailings, covered by mine waste material. In recent years, small quantities of construction debris has been place on the site. The approximate dimension of the rectangular site is 20 to 50 feet high by 600 feet (E-W) by 1400 feet (N-S) (Woodward Clyde, 1976).

The tailings dam was report to be constructed in 1968. The height of the dam was 10 to 40 feet with slopes 1.4H:1V and was constructed with sub-rounded to sub-angular sand, gravel and cobbles. The interior pond was approximately 14 acres and filled with tailings composed of fine sands to silt and minor amounts of clay. The dam was raised 10 feet in 1973 using angular mine waste. Seepage was observed on three sides of the tailings dam at the crest of the original dam. In 1975, bentonite was placed in the pond in an attempt to prevent seepage, which was reported to be unsuccessful. (Woodward Clyde, 1976). The pond was removed from service in 1979. A cover of probable mine waste was placed on top of the mine tailings at closure.

Table 2: Dam description (Woodward Clyde, 1976)

Location	Original Dam Height (ft)	Last Dam Height (ft)



North (A – top)	40	50
East (C – road side)	20	30
South (D – bottom)	10	20
West (B – creek side)	30	40

1.3. Site Conditions

1.3.1. Topography

The site is located in the flat-bottom valley bounded by Big Creek in the west and steep slopes on the east. The valley has steep side slopes and Big Creek flows year round. The elevation of the valley floor at the site is approximately 2400-2440 feet above mean sea level. The former tailings pond is approximately 22 acres with steep sides and a flat top. There is sparse vegetation cover of aspens and alders in the interior and pine along the perimeter.

1.3.2. Access

Access to the site is good, from an all-weather well-maintained asphalt road (Big Creek Road). An exit from US Interstate 90 is within a 100 yards of the site. A number of gravel roads are located throughout the site, and are best accessed during dry conditions. Track mounted rigs may be required during wet conditions.

1.3.3. Geology

The site is underlain by recent alluvial material (Qal) consisting of gravel, cobbles and minor amounts of boulders, sand, silt and clay. The recent alluvium is approximately 40 feet thick. The side slopes of the valley consist of colluvium (Qc). The bedrock beneath the site is highly fractured and jointed and composed of Precambrian Belt Series (Prichard Formation) of meta-sedimentary rocks. The rocks consist of argillite, quartzose argillite, and quartzite (Figure 1).

1.3.4. Hydrogeology

Based on the previous study done in 1976, groundwater levels are estimated at 2420 feet elevation in the south end of the site and 2400 feet elevation in the north. Groundwater gradient is to the north.

1.4. Previous Site Activities

A geotechnical investigation was performed to determine the feasibility of raising the existing tailings dam to increase storage capacity (Woodward-Clyde, 1976). The investigation consisted of field work, review of historical information, seismic refraction traverses, drilling and sampling of 18 test holes, permeability tests, piezometers, laboratory testing of samples, and stability analysis.



2. SCOPE

All work shall be completed within 60 calendar days following notice to proceed.

2.1. Rotosonic

Seven monitoring wells will be installed using Rotosonic drilling methods along the perimeter of the site. In addition, eleven borings will be drilled throughout the site at designated locations (Figure 2).

2.2. Auger

Twelve auger borings will be drilled at designated locations (Figure 3). Auger borehole drilling shall be used to explore the interior of the former tailings pond. In addition, eight piezometers shall be installed in 8 of the 12 auger borings (Figure 3).

3. QUALITY ASSURANCE

Quality Assurance will be accomplished in the field by USACE personnel providing 100% oversight of contractor tasks.

4. SPECIFIC TASKS

4.1. Task 1 - Prepare Work Plan

The Contractor shall prepare a Work Plan (WP) to be approved by the government prior to commencement of field work. This plan shall include a detailed description of the work to be performed including Drill Borings, Monitoring Well and Piezometer Installation, and Closure of Borings, an Accident Prevention Plan (APP), and an Investigation Derived Waste Plan (IDWP). Water generated during this effort (e.g., well development, equipment and personnel decontamination) shall be containerized and be disposed of by the contractor at the lined pond at the Bunker Hill Project Site, in coordination with the Contracting Officer's Representative. Soil generated may be disposed of onsite unless suspected to be highly contaminated.

The Contractor shall prepare a WP that defines the objectives of monitoring well and piezometer installations, boring closures (not planned to have piezometers installed). In addition, it will provide details of work proposed to be performed to meet these objectives. The WP shall describe site conditions and discuss the necessary data collection requirements. The WP shall include a detailed discussion of the technical approach to be used. At a minimum, the WP shall contain: an Introduction; a Background of the Site and Existing Conditions; a Rationale for the WP; a Description of the Proposed Tasks; a Schedule for Conducting the tasks described in this SOW.

The Work Plan shall identify key personnel working on this project by functional roles, organization, qualifications, training, and resume indicating experience relating to the respective task being performed for this delivery order. The project organization for the prime Contractor and any sub-Contractors shall be clearly defined with a discussion of Quality Control (QC) responsibilities. The Contractor's QC officer shall report to a responsible senior officer of the company (i.e. QC management shall be separate from project management). The listing of key individuals shall include QC officers for all project components.

The Work Plan shall follow the requirements listed in this SOW. The Contractor shall provide the draft Work Plan to USACE within 7 Calendar Days (CD) of Notice to Proceed, and shall provide the Final Work Plan to USACE within 3 CD of receipt of draft Work Plan comments from USACE.



4.1.1. Drill Boring, Monitoring Well (Piezometer) Installation, and Boring Closure Plan

The monitoring well and piezometer installation, boring installation and closure portion of the Work Plan shall include a description of the closure method including material to be used to seal borings, and contamination prevention methods. The monitoring well and piezometer installation portion shall describe the drilling methods, construction and development of wells and piezometers. If drilling fluid additives are to be used, then the additive name and the manufacturer's data shall be submitted for COR approval.

The following requirements shall be incorporated into the Contractor's Monitoring Well and Piezometer Installation, and Boring Installation and Closure portion of the Management Plan and shall be followed in the field. Guidance for performing the installation and closure can be found in Attachment B. The plan shall include, but not be limited to, a discussion of the following:

- (a) Description of well (piezometer) drilling methods, and installation procedures, including any temporary casing used, placement of filter pack and seal materials, drill cuttings and fluids disposal, and soil sample disposition.
- (b) Description of well(piezometer) construction materials, including well screen, riser pipe, centralizers (if used), tailpiece, filter pack, bentonite, drilling water, cement, and well protective measures.
- (c) Description of quality control procedures to be used for placement of filter pack and seals in the boring, including depth measurements.
- (d) Description of contamination prevention and well (piezometer) materials and equipment decontamination procedures.
- (e) Description of protective cover surface completion procedures, including any special design criteria/features relating to frost heave prevention. The maximum frost penetration for the site shall be included in this description.
- (f) Description of well development methods development criteria to be used.
- (g) List of personnel assignments for this project, and personnel qualifications.
- (h) Description of boring closure methods to be used.

Catalog data for monitoring well (piezometer) screens, riser pipe, filter pack material, bentonite, cement, centralizers, surface protective covers, well vaults, locking caps, airline oil filters for pneumatic drilling, and chemical specifications on drill lubricants shall be included. Catalog data shall be available upon request by USACE. This data would include any information, written or otherwise, supplied by the manufacturers or suppliers of the above listed items.

All well (piezometer) drilling, installation, and abandonment activities shall comply with IDAPA 37.02.09 and EM 11101-4000, Table 3.

4.1.2. Disturbed Samples

The Contractor shall collect disturbed soil samples from the Rotasonic bore holes from surface to the total depth of the bore hole as a function of core retrieved from the bore hole. Disturbed samples from auger boreholes shall be collected from 0'-2.5', 5'-7.5', 10'-12.5', and every 5 feet thereafter to the total depth of the bore hole. In addition, to the specified intervals, samples shall be collected whenever a change in material is observed by the USACE Geologist. A confirmation sample shall be collected at the total depth of the bore hole. The disturbed samples from auger boreholes shall be collected using a 24' long split spoon driven 24"



using a 140-pound hammer falling 30 inches. Hammer stoke and weight shall be calibrated before the start of work. The driller shall provide the sample to the USACE geologist immediately after being retrieved from the bore hole. The contact between the overburden and top of tailings and between the tailings and native material shall be noted by the driller based on drill action if these contacts are not observed in samples.

4.1.3. Undisturbed Samples

Up to three undisturbed soil samples shall be collected from each Rotasonic or auger bore hole depending on material type. The undisturbed samples shall be collected using an 18' long thin walled 3' diameter Shelby Tube pushed into the ground. No undisturbed sample shall be collected within 1-foot of the end of a drive of a disturbed sample. Pressure to drive the sample into the soil shall be recorded on the drill log. The sample penetration rate shall not be more than 1-foot per minute. The undisturbed sample shall be delivered to the geologist or geotechnical engineer immediately after being removed from the bore hole. After logging and preparation, the Shelby tube shall be transferred to a cushioned shipping box and shipped immediately to the analytical laboratory. Extreme care will be taken during handling and packing of the sample to prevent jarring or vibration, which could degrade sample properties. The samples shall be protected from freezing at all times. The sample must be extruded from the Shelby tube within twenty-four (24) hours of the time of collection.

If the sample can not be extruded from the Shelby tube within twenty-four (24) hours of collection, then the sample shall be extruded in the field. A detailed log shall be made of the sample and the sample shall be sealed in alternating layers of muslin cloth and tin foil sealed with melted wax as soon as possible after extrusion. The sample shall be protected from any damage, moisture, frost, and dirt during the extrusion and waxing process. The Driller shall provide extrusion and waxing stations and supplies if required.

4.1.4. Health & Safety

The Contractor shall ensure that all work carried out is performed in a manner that is safe and protective of human health and the environment. This work shall be performed in accordance with these specifications, 29 CFR 1926 and the US Army Corps of Engineers Safety and Health Requirements Manual (EM 385-1-1, 3 September 1996). The Contractor shall develop an Accident Prevention Plan (APP). All personnel shall understand, be familiar with, and conform to site safety procedures presented in the accepted Accident Prevention Plan (APP) developed by the Contractor for site activities. The information contained in this Section is provided to assist in the development of the APP. The Contractor will be held responsible for ensuring that operations under its control do not jeopardize the health and safety of public or private sector workers, members of the public at large, or the environment.

As a result it is most important that the Contractor develop and enforce the safety and health requirements specified in this section, EM 385-1-1, including Appendix A thereof, and 29 CFR 1926.62 (hazardous waste operations and emergency response) and 29 CFR 1926.62 (Lead). The Contractor 's Accident Prevention Plan shall also clearly state, in enforceable language, the corrective measures which will be taken to preclude workers and equipment from being damaged or imperiled by the work activities required to perform the work.



4.1.5. Contaminant Characterization

There is the potential presence of elevated levels of antimony, arsenic, cadmium lead and zinc in the soil, groundwater and surface water. This is the result of over 100 years of mining and 65 years of smelting activity in the region. Heavy metals contamination has also extended into several communities. In addition to total suspended particulates (TSP), which includes respirable crystalline silica, there are four (4) chief metals of concern for the area. The metals are antimony (Sb), arsenic (As), cadmium (Cd) and lead (Pb). Arsenic is not technically a metal. However, the USEPA considers it as such and therefore includes it as one of the four chief metals of concern. The Contractor shall control dust level of soil to the Corps mandated level of 1 mg/m³, which will result in a maximum airborne lead level well below 50 µg/m³ (the PEL for lead.) The breathing atmosphere for the workers shall be controlled such that the indigenous dusts and the respirable crystalline silica do not equal or exceed the one half the value posted for the materials by either OSHA, ACGIH, or NIOSH. In addition, there is the potential of explosive material present in the former tailings pond site. The Accident Prevention Plan shall include, in the following order, the written requirements for the engineering controls, administrative controls and personal protective equipment which shall be used in order to ensure that the Contractor's employees will be protected from these materials.

4.1.6. Decontamination

The Contractor shall decontaminate all equipment used for the soil sampling and support equipment between sampling events. Support equipment includes vises, work tables, brushes, buckets, tubs, and tools. The drill crew shall decontaminate their outer rubber gloves between sampling events. Clean (surgical type) outer gloves shall be used when handling the sampling equipment for each sample collected. Contractor shall properly dispose of gloves, wipes, plastic scoops, pans, or other disposable material and shall ensure that all wash liquids are captured. The cleaning of soil sampling tools shall be accomplished as follows: a) Wash with soapy water (lab-grade phosphate-free detergent; tap, distilled or deionized water); b) Rinse with distilled water and wash again with soapy water; c) Rinse with distilled or deionized water; and d) Air dry. Deionized water means water that contains less than 50 milligrams per liter of dissolved solids.

OR

Drive samplers used to sample overburden materials shall be cleaned between each sampling event by washing the samplers in a phosphate free detergent and rinsing in clean water from an approved source. If samplers are used to collect soil samples for laboratory analysis, the samplers will be turned over to the Government's sampling contractor for additional cleaning and then shall be handled by the Contractor using clean surgical gloves.

4.1.7. Accident Prevention

Prior to initiating on-site work the Contractor shall submit, for Government Acceptance, a written APP which meets all of the basic requirements as delineated in Section 1 (01.A.07) and Appendix A, of EM 385-1-1 (Appendix A of this SOW is requirement for the Monitoring Well Installation), as well as Site Safety and Health Plan requirements of 29 CFR 1926.65 and the Lead Compliance Program of 29 CFR 1926.62. The Contractor shall include the APP with the WP. The Contractor shall not commence on-site work activities, with the exception of mobilization to the work site, until such time as USACE has formally accepted the APP. The APP shall be made available to all persons entering onto the work site(s) in accordance with EM 385-1-1 (1996). A copy of the written APP shall be maintained onsite. All site workers shall be current in the training requirements specified in 29 CFR 1926.62 and 29 CFR 1926.65 and proof of said training, for both supervisory personnel as well as non-supervisory personnel, shall be included in the APP. The Accident Prevention Plan shall also include all of the activities of any sub-Contractors and shall demonstrate and ensure the safety and health of sub-Contractor personnel. The Accident Prevention Plan shall include a detailed Work Plan which includes all activities of both Contractor and Subcontractor personnel.



In addition to the specific requirements delineated in EM 385-1-1, the APP shall include and incorporate the lead compliance program specified in 29 CFR 1926.62(e), as well as specify and delineate the personal hygiene facilities which will be used. The Contractor's APP shall demonstrate those steps which will be taken to also enforce the safety and health regulations of 29 CFR 1926, with special attention to subpart .62 (Lead) for its employees as well as Subcontractor personnel.

The APP shall also demonstrate what steps (engineering controls, administrative controls and PPE) the Contractor and Subcontractor(s) will take to ensure that site workers are not exposed to atmospheres containing toxic materials. This includes chemical hazards, indigenous dust, arsenic, cadmium, lead and/or respirable silica (Class 1 carcinogen) at or above the ½ of the published Permissible Exposure Level (PEL) or the Threshold Limit Value (TLV) whichever is lower. The APP shall delineate how the workers will be monitored. For respirable silica, arsenic, cadmium and lead, the Contractor shall perform both real-time and 8 hour TWA monitoring for workers on the site. The results of personal sampling shall be included in the Daily Work Log. The Accident Prevention Plan shall provide the name(s) and credentials of the Lead Competent Person(s) who will be conducting the personal and area lead, arsenic, cadmium and respirable silica exposure monitoring, as well as the AIHA certified laboratory to be performing the analyses.

The APP shall include either a medical clearance report from a medical physician for the site workers or a written affidavit, on company letterhead, which attests, by name, that all site workers are medically qualified to use the required PPE (including respirators) and work on lead containing sites, in accordance with 29 CFR 1926.62 (including the appendices thereof). The Accident Prevention Plan shall clearly show the name of the of the Board (American Board of Preventative Medicine) Certified/Board Eligible Occupational Health Physician making the medical determination for each Contractor/Subcontractor employee who is to be used for this work.

The Accident Prevention Plan shall describe the procedures that will be taken to ensure that clothing contaminated with lead, arsenic, cadmium, and/or respirable silica, bearing soils, will not be carried off site. In addition, with specific steps which will be taken to ensure that the environment and groundwater are not contaminated with lead containing materials as a result of the procedures used during well installation.

In accordance with the contract Clause, "Accident Prevention," the Contractor shall provide and maintain work environments and procedures which will safeguard the public, Government personnel, Contractor personnel, property, materials, supplies and equipment exposed to Contractor operations and activities.

4.1.8. Activity Hazard Analysis (AHA)

The AHA, submitted as part of the APP, shall specifically list, in chronological order, the specific steps of each task, the specific hazard(s) associated with the task, the specific engineering control technique(s)/ method(s) which will be used to mitigate the hazards administrative controls (including work practices) and specific personal protective equipment (PPE) which will be used to mitigate said hazards. The AHA shall be laid out in chronological order and presented in the table format depicted in Figure 1-1 of Section 1 of EM 385-1-1 (1996). The Activity Hazard Analysis shall include all work which is to be performed by Subcontractors. Compliance with the accident prevention plan and safety requirements by Subcontractors shall be the responsibility of the Contractor.

4.1.9. Notice of Violations

Whenever the Contracting Officer detects and noncompliance with Contractual, Corps or OSHA health and safety compliance, or any condition which poses a serious or imminent danger to the health or safety of personnel on the site, the Contracting Officer will notify the Contractor in writing and request immediate initiation of corrective action. Lack of notice from the Contracting Officer does not relieve the Contractor from compliance requirements and responsibility. Such notice, when delivered to the Contractor at the site of the work, shall be deemed sufficient for the purpose of notification. After receipt of the written notice, the



Contractor shall immediately take corrective action and report said actions in writing to the Contracting Officer who will then document said corrective action, in writing, for the Contractor or the on-site representative of the Contractor. If the Contractor fails, or refuses, to comply promptly, the Contracting Officer may issue and order stopping all or part of the work until satisfactory corrective action has been taken. No part of the work stoppage, resulting from the "Stop Work" directive, shall be made the subject of claim for extension of time or for additional costs or damages by the Contractor.

4.1.10. Reporting

In addition to the other documents required, the Contractor shall include all personal exposure assessments/monitoring data and results for all materials of occupational health concern (including a letter from an Occupational Medicine physician, which attests that each person working on this project has received a final medical clearance for lead in accordance with 29 CFR 1926.62 along with accident reports, near-miss reports, accident investigation reports and laboratory analytical reports for any exposure monitoring.

5. Task 2 – Rotosonic Drilled Borings and Monitoring Well Installation

The proposed project involves work along and within the former tailings pond in the Big Creek drainage. The work consists of installation of 8 monitoring wells and 11 borings. It consists of drilling through overburden soils and tailings presumed to be contaminated with antimony, arsenic, cadmium, copper, lead, mercury, and zinc. The Contractor shall allow collection of soil samples for soil classification and analysis during drilling of boring and well construction in accordance with the approved WP. During drilling operations, soil samples shall be classified in the field by USACE Geologist.

The well installation method shall prevent the collapse of formation material against the PVC well screen and PVC casing. The inside diameter of any temporary steel casing (or hollow stem auger flight) used shall be sufficient to allow accurate placement of the screen, riser, filter pack, seal and grout. The screen material shall be non-contaminating, non-clogging, continuous slot (10-slotted), wire wrap design. Well screens shall be 10 feet in length. Each well shall be installed in a dedicated borehole and shall be constructed to yield chemically representative ground water samples of the screened interval for chemical analysis and to allow for the accurate measurement of ground water depths relative to the top of the well riser. Lead has been identified as the primary contaminant of concern based on health studies, therefore all monitoring well site workers shall have a background test for blood lead level prior to commencing work and a final test following completion of the contract work. The general locations of the monitoring wells are shown on Figure 2. Drilling shall be by Rotosonic drilling methods and documented in the WP. The monitoring wells at the site are to be screened in an unconfined aquifer, ten feet below the static water table. The work consists of furnishing all plant, labor, materials, transportation, supplies, and accessories to accomplish the work in accordance with the specifications herein. Please refer to Attachment A.

Each well is assumed to be 4-inch diameter and made of Schedule 40 PVC. The Contractor shall assume that there will be a total of 210 linear feet (LF) of well installation and a total of 660 LF of borings. Wells and borings shall be installed at locations described in the WP and/or determined in the field by USACE. Monitoring wells will be labeled 01-SR-MW-02 (Year Constructed – 01, SR – Sunshine Repository, MW – monitoring well, and 02 – well number). Contractor shall collect drill energy data during drilling for estimation of Standard Penetration Test (SPT) results by new state of the art methods.

6. Task 3 – Auger Drilled Borings and Piezometer Installation

The proposed piezometer installation and drilling program involves work within the former tailings pond in the Big Creek drainage. The work consists of installation of 12 borings with 8 of these borings having piezometer installed. It consists of drilling through overburden soils and tailings presumed to be



contaminated with antimony, arsenic, cadmium, copper, lead, mercury, and zinc. The Contractor shall allow collection of soil samples using a 2" diameter (24" long) stainless steel split-spoon sampler for soil classification and analysis during drilling of boring and well construction in accordance with the approved WP. Standard Penetration Test (SPT) will be obtained according to the ASTM D 1586. Contractor shall sample on 2.5 feet intervals from the surface to the top tailings, and collect continuous split spoon samples there after to total depth of borehole. Boreholes will be terminated at least 10 feet below bottom of the former tailings pond. During drilling operations, soil samples shall be classified in the field by USACE Geologist as indicated in this Statement of Work.

The piezometer installation method shall prevent the collapse of formation material against the PVC well screen and PVC casing. It shall follow monitoring well installation procedures found in Appendix A. The inside diameter of any temporary steel casing (or hollow stem auger flight) used shall be sufficient to allow accurate placement of the screen, riser, filter pack, seal and grout. The screen material shall be non-contaminating, non-clogging, continuous wrap (10-slotted) design. Well screens shall be 10 feet in length. Each well shall be installed in a dedicated borehole and shall be constructed to yield chemically representative ground water samples of the screened interval for chemical analysis and to allow for the accurate measurement of ground water depths relative to the top of the well riser. The general locations of the piezometer wells are shown on Figure 3. Drilling shall be by auger drilling methods and documented in the WP. The piezometer wells at the site are to be screened in an unconfined aquifer to straddle the static water table to allow for seasonal groundwater fluctuations. The work consists of furnishing all plant, labor, materials, transportation, supplies, and accessories to accomplish the work in accordance with the specifications herein. Please refer to Appendix A.

Lead has been identified as the primary contaminant of concern based on health studies, therefore all monitoring well site workers shall have a background test for blood lead level prior to commencing work and a final test following completion of the contract work.

Each piezometer is assumed to be 2-inch diameter and made of Schedule 40 PVC. The Contractor shall assume that there will be a total of 400 linear feet (LF) of piezometer installation and a total of 600 linear feet (LF) of auger drilling. Wells shall be installed at locations described in the WP and/or determined in the field by USACE. Piezometer will be labeled 01-SR-PZ-01 (Year Constructed – 01, SR – Sunshine Repository, PZ – Piezometer, and 01 – well number).



7. APPLICABLE PUBLICATIONS

The publications listed below form a part of this specification to the extent referenced. These are referred to by basic designation only.

Table 8: Applicable Publications

Title	Reference No.	Description
American Society For Testing Materials (ASTM)	ASTM C 387	(1987; R 1995, 2000) Specification C387-00e1 Standard Specification for Packaged, Dry, Combined Materials for Mortar and Concrete
	ASTM D 1586	(1999) Test Method D1586-99 Standard Test Method for Penetration Test and Split-Barrel Sampling of Soils
	ASTM D 1587	(2000) Practice D1587-00 Standard Practice for Thin-Walled Tube Sampling of Soils for Geotechnical Purposes
	ASTM D 1785	(1999) Poly (Vinyl Chloride)(PVC) Plastic Pipe, Schedules 40, 80, and 120
	ASTM D 4220	(2000) Practice D4220-95(2000) Standard Practices for Preserving and Transporting Soil Samples
	ASTM D 5088	(1990) Decontamination of Field Equipment Used at Non-radioactive Waste Sites
	ASTM D 5092	(1990, 1995) D5092-90(1995)e1 Standard Practice for Design and Installation of Ground Water Monitoring Wells in Aquifers
	ASTM D 2488	(1998) Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)
	ASTM F 480	(2000) Specification F480-00 Standard Specification for Thermoplastic Well Casing Pipe and Couplings Made in Standard Dimension Ratios (SDR), SCH 40 and SCH 80
American National Standards Institute (ANSI)	Z 535.1-91	Safety Color Code
Code Of Federal Regulations (CFR)	49 CFR 172	Hazardous Materials Table, Special Provisions, Hazardous Materials, Communications, Emergency Response Information, and Training Requirements
	29 CFR 1926	Safety and Health in Construction
National Sanitation Foundation Standard (NSF)	NSF Std 14	(Nov 1990) Plastics Piping Components and Related Materials
State Of Idaho, Department of Water Resources	IDAPA 37.03.09	Well Construction Standards Rules Title 03, Chapter 09
U.S. Army Corps. Of Engineers (USACE)	EM 385-1-1	(1996) U.S. Army Corps of Engineers Safety and Health Requirements Manual
	EM 1110-1-4000	(Nov 1998) Monitoring Well, Design, Installation, and Documentation at Hazardous, Toxic, and Radioactive Waste Sites
Environmental Protection Agency (EPA)	540-G-91-009	(1991) Management of Investigation-Derived Wastes During Site Inspections





8. ENVIRONMENTAL PROTECTION

The Contractor shall take all precautions as may be required to prevent contaminated water or water having undesirable physical or chemical characteristics from entering the water supply stratum through the boring. Care shall be taken to preserve the natural barriers to ground-water movement between aquifers and to seal aquifers or strata penetrated during drilling operations which might impair water quality or result in cascading water. A plastic sheeting pad with berm shall be placed under and around the drill rig and under all supporting equipment to prevent spilled or leaking fuel and lubricants from entering the soil cover or staining the pavement surface. The Contractor shall cover the boring at all times when not at the work site. The cover shall be secured in place or weighted down so that it cannot be removed except with the aid of drilling equipment or through the use of drill tools. Demonstration of said protective measures shall be described in the Contractor's Accident Prevention Plan, see paragraph HEALTH AND SAFETY.

9. PERMITS AND PERFORMANCE REQUIREMENTS

The Contractor shall be responsible for obtaining permits, licenses, and other requirements necessary for execution of the work and paying all costs thereof. Real Estate Right of Entry will be provided by the Contracting Officer and must be in place prior to drilling. All activities will be located on Sunshine Mines property. All work and materials for the construction of the monitoring wells shall conform to the requirements of IDAPA37 Title 03 Chapter 09. Access to each monitoring well site, including underground utility clearances, is the responsibility of the Contractor. Prior to commencing work, the Contractor shall obtain written approval from the local utility companies to drill at each site, to avoid disturbing buried utilities. Any items damaged by actions of the Contractor shall be repaired to the satisfaction of the COR at the expense of the Contractor. The Government geologist inspecting the drilling operations will be responsible for answering questions from the inquiring public. Utility clearances and Right of Entry to be obtained by USACE. The USACE will stake all monitoring wells, piezometers, and borings in the field prior to commencement of work.

10. PERSONNEL REQUIREMENTS

Each drill shall be manned with an experienced and qualified crew to ensure efficient and timely execution of the work. The minimum acceptable crew for each drill shall be a qualified driller experienced in the installation, repair and abandonment of monitoring wells and an experienced and qualified helper. Qualified driller shall possess all licenses required to drill subsurface borings and wells in the State of Idaho. The Contractor shall provide sufficiently experienced supervisory staff to direct all phases of work under this contract.

11. SANITARY PROVISIONS, WATER AND ELECTRICITY

Contractor shall provide such sanitary accommodations for use of his employees as may be necessary and shall maintain same in a neat and sanitary condition. Such accommodations shall comply with requirements and regulations of EM 385-1-1, and state health department, local ordinances, and other authorities having jurisdiction. All electrical current and water required by the Contractor will be furnished by the Contractor.



12. DRILLING, INSTALLATION, AND CLOSURE RECORDS

Records to be completed by Contractor. The following record keeping requirements apply to this Statement of Work.

12.1. Daily Logs (GA)

The Contractor's drill operator shall maintain an accurate and precise chronological daily driller's log of events which shall be submitted to the Contracting Officer's Representative at the conclusion of each boring or as otherwise directed. The following items shall be included in this daily log:

- (a) Beginning of work shift (time, date, and location)
- (b) Measure static water level at beginning of each shift
- (c) Delays in work (times and circumstances)
- (d) Any significant occurrence in performing work
- (e) Start and stop time of hourly payment items
- (f) Equipment failures
- (g) End of shift casing depth and height left above ground surface
- (h) End of work shift (time and date)
- (i) Movements to new boring location,
- (j) Daily tabulation of quantities for each pay item
- (k) Any pertinent comments concerning the daily performance.
- (l) Drilling lithologic log by driller.

The presence of a Government geologist or the keeping of separate drilling records by Contracting Officer personnel shall not relieve the Contractor of the responsibility for the work specified. Contractor shall furnish a water level measuring device accurate to 0.01 foot and capable of measuring water level to 100 feet depth in order to accomplish sub-item (b) above.

12.2. Notification or Non-Compliance/Corrective Action Report

The Contractor shall notify the CO verbally and in writing within two working days of any and all deviations or non-compliance events relating to chemical data quality management requirements. Similarly, the CO will notify the Contractor of any detected non-compliance with the foregoing chemical data requirements. Failure of the Contractor to report or respond to such non-compliance does not relieve the Contractor from the non-compliance requirements. At any time during the process if corrective action is required according to this Statement of Work, base contract, Corps audit, or good laboratory practices, a corrective action report shall be submitted to the CO for approval.

The Contractor shall, after notifying the CO of any and all deviations or non-compliance events relating to chemical data quality management requirements or receipt of such notice from the CO, immediately take corrective actions. If the Contractor fails to comply promptly, the CO may issue an order to stop all or part of the work until satisfactory corrective action has been taken. Such an order shall encompass activities of both the Contractor and Subcontractors. No part of such time lost due to such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

13. SCHEDULE

The Contractor shall furnish sufficient technical, supervisory and administrative personnel to ensure completion of the work in accordance with the following schedule. The Contractor shall keep the COR fully



advised at all times, concerning delays or difficulties which may prohibit completion of any or all of the work according to the following schedule:

	Activity	Days*	Remarks
1	Delivery Order (DO) Award/ Notice to Proceed (NTP)	0	DO Award/NTP Date
2	Submit Draft WP	4 CD	After Notice to Proceed Date
3	Submit Final WP	3 CD	After Receipt of Comments
4	Field Work initiated	7 CD	After Approval of Work Plan
5	Field Work Complete	22 CD	After Initiation of Field Work
5	Reports and Records Due	14CD	After Completion of Field Work

*CD - Calendar Days, WD - Work Days (Mon.-Fri)

14. MEASUREMENT AND PAYMENT

14.1. General

The contract price for each item shall constitute full compensation for furnishing all plant, labor, materials, and incidentals, and performing all operations necessary to construct and complete the items in accordance with the specifications. Payment for each item shall not be considered as full compensation, notwithstanding that minor features may not be specifically mentioned herein. Materials and work paid for under one item will not be paid for under any other item. The Contractor shall not be compensated for loss of time or equipment due to breakdown of equipment, lack of proper equipment as determined by the Contracting Officer, labor shortages or disputes, delay in obtaining materials, or for any other reason not directly the fault of the Government. Items for which no separate payment is provided shall be considered as incidental to the performance of the work which it is mentioned.

Payment will be made at the contract unit price for each line item listed in the Cost Schedule, payment of which shall constitute full compensation for plant, material, equipment, supplies, and transportation of such to and from the site of work.

14.2. Measurement

Measurement of the units of work shall be made as hereinafter specified. Measurement by linear feet will be measured for payment to the nearest linear foot. Depth, installation, PVC well casing, and well screen shall be measured by linear distance. Measurement of well depth shall be vertical measurement in linear feet (LF) from original ground surface. Measurement by volume of bentonite grout will be by direct count of 94-pound sacks (SK) placed in the well. Measurement by the hour will be to the nearest whole hour. The time necessary to wait for grout to set will not be measured for payment. Standby time will be measured by the number of hours that crew and/or equipment are specifically directed by the Contracting Officer's Authorized Representative to standby until notified to resume work.



14.3. Payment

14.3.1. Item No. 0001, Work Plan/ Project Summary Report

Payment will be made at the contract lump sum price All Work for the Preliminary Site Investigation of the Sunshine Property, Big Creek, Idaho. Work under this item includes all labor, travel, materials, supplies, equipment, permits, and all incidentals necessary to complete the Work Plan and Project Summary Report.

14.3.2. Item No. 0002, Monitoring Well Installation (Base)

14.3.3. Item No. 0002A, (Rotasonic) Mobilization and Demobilization (Base)

The contract unit price for Item 0002A shall include transportation of all plant, material, equipment, and supplies to and from the site of work (including those necessary for monitoring well repairs, monitoring well closures, and groundwater sampling.) Sixty percent of Item: Mobilization and Demobilization will be paid following completion of mobilization to the work area, including furnishing complete assembly in working order of all equipment necessary to perform the required drilling, sampling and monitoring well construction. The preparation, submittal, and necessary revisions for the required Accident Prevention Plan and Activity Hazard Analysis will be incidental to this item of work. The remaining 40 percent of Item: Mobilization and Demobilization will be paid when all equipment has been removed from the area, cleanup accomplished to the satisfaction of the Contracting Officer, and demobilization is complete.

14.3.4. Item No. 0002B, Monitoring Well Drilling and Installation (Base)

The contract unit price for Item 0002B, Monitoring Well Drilling and Installation, shall include costs for equipment, materials and labor for drilling; furnishing and the disposal of temporary casing, drill return water, sample handling, and sample containers and drumming of drill cuttings. No payment will be allowed for monitoring wells abandoned due to construction practices not in accordance with this specification, or for the convenience of the Contractor. Interim mobilization on each boring, sanitation of equipment, and the furnishing, installing, removing of ground protection materials and disposal of ground protection materials will be incidental to this item of work. When the total cumulative depths of the eight monitoring wells exceeds a total drilled footage of 240 linear feet, then additional depth will be paid for at the contract unit price for Item 0002B: Additional Monitoring Well Depth. In addition payment shall constitute full compensation for furnishing all plant, labor, PVC materials, catalog data, equipment, supplies, decontamination, and performing all work necessary to install screen and blank 2-inch-nominal diameter PVC pipe. The furnishing of filter pack, bentonite chip well seal, centralizers, tail pipe, and end caps in the aquifer and the installation of said materials while simultaneously removing the temporary steel casing or auger flights from the drilled borings will be incidental to the this item of work. The furnishing and placing of bentonite backfill material within the aquitard is also incidental to this item of work. Payment for furnishing and placing bentonite grout annular sealant will be made under Item: Bentonite Grout Annular Sealant, Furnished and Installed.

14.3.5. Item No. 0002C, Bentonite Grout Annular Sealant Furnished & Installed (Base).

The contract unit price for Item 0002D, Bentonite Grout Annular Sealant, Furnished and Installed, shall include costs to furnish all plant, labor, grout materials, catalog data, equipment, supplies, and performing all work necessary to install annular sealant. Simultaneously removal of the temporary steel casing or auger flights from the drilled borings will be incidental to this item of work. The cement bentonite grout used in the annulus above the bentonite seal will be paid by direct count of 94-pound sacks used. Payment will include compensation for furnishing bentonite grout, mixing of the grout, and pumping of grout, necessary for the work. No payment will be made for bentonite to backfill or plug a boring or well rejected by the Contracting Officer's Authorized Representative and/or abandoned by the Contractor.

14.3.6. Item No. 0002D, Above Ground Monitoring Well Protection Features, Furnished and Installed.

The contract unit price for Item 0002F, Above Ground Monitoring Well Protection Features, Furnished and Installed, shall include costs associated with furnishing all plant, labor, materials, equipment, supplies and



catalog data and providing all work to install monitoring well protection features as specified. Payment shall constitute full compensation for furnishing and installing concrete pad, four guard posts, metal protection casing, watertight lockable security plug for the PVC well riser, keyed-alike padlocks, commercially manufactured locking cover, and the furnishing and installation of the well identification tag.

14.3.7. Item No. 0003, (Rotasonic) Drilling Borings (Base)

14.3.8. Item No. 0003A, (Rotasonic) Drilling (Base)

The contract unit price for Item 0003A, drilling, shall include costs for all labor, equipment, and incidentals necessary to drill borings as specified. Interim mobilization on each boring, sanitation of equipment, and the furnishing, installing, removing of ground protection materials, and disposal of ground protection materials, will be incidental to this item of work.

14.3.9. Item No. 0003B, Bentonite Grout Furnished and Installed for Boring Closure (Base).

The contract unit price for the portion of the No. 0003B Item, to close (decommission) Soil Borings, shall include costs associated with furnishing all plant, labor, material, catalog data, equipment, supplies, and performing all work necessary to decommission the soil borings as specified. The cement bentonite used in the closure of the soil borings will be paid by direct count of 94-pound sacks used. The furnishing of water to hydrate the bentonite will be incidental to this item of work.

14.3.10. Item No. 0003C, Standby Time.

The contract unit price for Standby Time, shall include cost associated with the standing by of equipment and crew only when the Contracting Officer's Authorized Representative requests that the Contractor stop doing work on the well due to the Government's need to make decisions. No more than 10 hours of standby time will be paid. Standby time will not be allowed during periods when the equipment would have otherwise been in idle status.

14.3.11. Item No. 0004, (Auger) Piezometer Installation (Base)

14.3.12. Item No. 0004A, (Auger) Mobilization and Demobilization (Base)

The contract unit price for Item 0004A, Mobilization and Demobilization, shall include costs for transportation of all plant, material, equipment, and supplies to and from the site of work (including those necessary for monitoring well repairs, monitoring well closures, and groundwater sampling). Sixty percent of Item: Mobilization and Demobilization will be paid following completion of mobilization to the work area, including furnishing complete assembly in working order of all equipment necessary to perform the required drilling, sampling and monitoring well construction. The preparation, submittal, and necessary revisions for the required Accident Prevention Plan and Activity Hazard Analysis will be incidental to this item of work. The remaining 40 percent of Item: Mobilization and Demobilization will be paid when all equipment has been removed from the area, cleanup accomplished to the satisfaction of the Contracting Officer, and demobilization is complete.

14.3.13. Item No. 0004B, Piezometer Installation (Base)

The unit price for Item 0002B, Piezometer Installation, shall include costs for equipment, materials and labor for installation; No payment will be allowed for piezometer abandoned due to construction practices not in accordance with this specification, or for the convenience of the Contractor. Interim mobilization on each boring, sanitation of equipment, and the furnishing, installing, removing of ground protection materials and disposal of ground protection materials will be incidental to this item of work. When the total cumulative depths of the 10 piezometer wells exceeds a total drilled footage of 600 linear feet. In addition payment shall constitute full compensation for furnishing all plant, labor, PVC materials, catalog data, equipment, supplies, decontamination, and performing all work necessary to install screen and blank 2-inch-nominal diameter PVC pipe. The furnishing of filter pack, bentonite chip well seal, centralizers, tail pipe, and end caps in the aquifer and the installation of said materials while simultaneously removing the temporary steel casing or auger flights from the drilled borings will be incidental to the this item of work. The furnishing and placing of bentonite cement backfill material within the aquitard is also incidental to this item of work. Payment for



furnishing and placing cement bentonite grout annular sealant will be made under Item: Cement bentonite Grout Annular Sealant, Furnished and Installed.

14.3.14. Item No. 0004C, Cement Bentonite Grout Annular Sealant Furnished & Installed (Base).

The contract unit price for Item 0004D, Cement Bentonite Grout Annular Sealant, Furnished and Installed, shall include costs for furnishing all plant, labor, grout materials, catalog data, equipment, supplies, and performing all work necessary to install annular sealant. Simultaneously removal of the temporary steel casing or auger flights from the drilled borings will be incidental to this item of work. The cement bentonite grout used in the annulus above the bentonite seal will be paid by direct count of 94-pound sacks used. Payment will include compensation for furnishing bentonite grout, mixing of the grout, and pumping of grout, necessary for the work. No payment will be made for cement bentonite to backfill or plug a boring or well rejected by the Contracting Officer's Authorized Representative and/or abandoned by the Contractor.

14.3.15. Item No. 0004D, Above Ground Piezometer Protection Features, Furnished and Installed.

The contract unit price for Item 0002F, Above Ground Monitoring Well Protection Features, Furnished and Installed, shall include costs for furnishing all plant, labor, materials, equipment, supplies and catalog data and providing all work to install monitoring well protection features as specified. Payment shall constitute full compensation for furnishing and installing metal protection casing, watertight lockable security plug for the PVC well riser, keyed-alike padlocks, commercially manufactured locking cover, and the furnishing and installation of the well identification tag.

14.3.16. Item No. 0005, (Auger) Drilling Borings (Base)

14.3.17. Item No. 0005A, (Auger) Drilling (Base)

The contract unit price for Item 0005A, drilling, shall include costs for all labor, equipment, and incidentals necessary to drill borings as specified. Interim mobilization on each boring, sanitation of equipment, and the furnishing, installing, removing of ground protection materials, and disposal of ground protection materials, will be incidental to this item of work.

14.3.18. Item No. 0005B, Bentonite Grout Furnished and Installed for Boring Closure (Base).

The contract unit price for the portion of the No. 0005B Item, to close (decommission) Soil Borings, shall include costs for furnishing all plant, labor, material, catalog data, equipment, supplies, and performing all work necessary to decommission the soil borings as specified. The cement bentonite used in the closure of the soil borings will be paid by direct count of 94-pound sacks used. The furnishing of water to hydrate the bentonite will be incidental to this item of work.

14.3.19. Item No. 0005C, Drive Samples (Base)

The contract unit price for Item 0005C, Drive Samples, shall include costs for all labor, equipment, and incidentals necessary to sample each soil boring as directed. Payment will be made in cases of no recovery providing sampling procedures have been in accordance with the specifications and sampling equipment retainer springs are in working order. The sanitation of sampler equipment will be incidental to this item of work.

14.3.20. Item No. 0005D, Undisturbed Sampling.

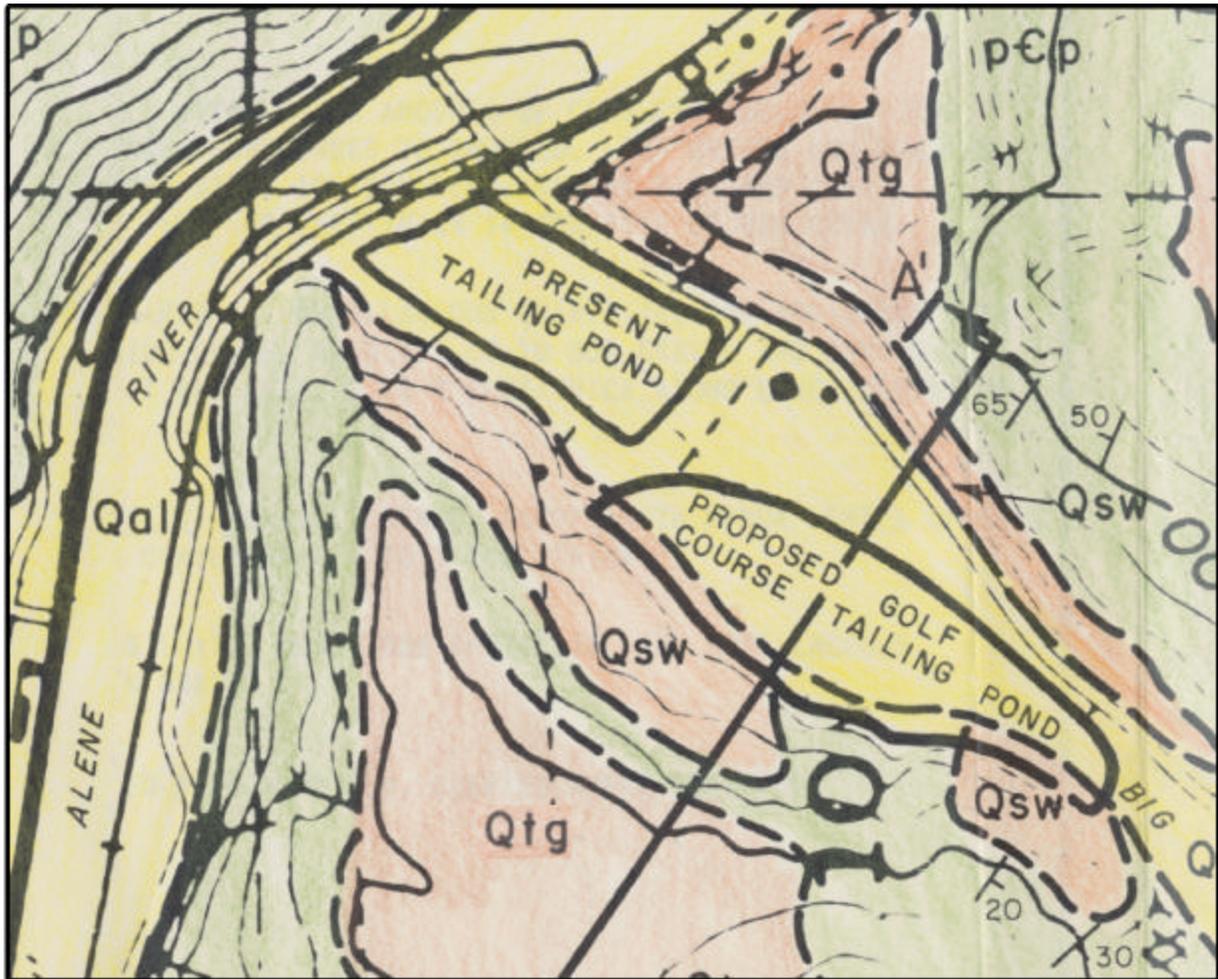
The contract unit price for Undisturbed Sampling, shall include costs for all labor, equipment, and incidentals necessary to sample each soil boring as directed using a Shelby Tube. The Driller shall provide extrusion and waxing stations and supplies if required. Payment will be made in cases of no recovery providing sampling procedures have been in accordance with the specifications and sampling equipment. The sanitation of sampler equipment will be incidental to this item of work.



14.3.21. Item No. 0005E, Standby Time.

The contract unit price for Standby Time, shall include costs for the standing by of equipment and crew only when the Contracting Officer's Authorized Representative requests that the Contractor stop doing work on the well due to the Government's need to make decisions. No more than 10 hours of standby time will be paid. Standby time will not be allowed during periods when the equipment would have otherwise been in idle status.

FIGURES



Qal Recent Alluvium - Gravels minor amounts of cobbles, boulders, sand, silt, and clay.

Qsw Slope Deposits - Angular quartzite, argillaceous quartzite, argillite rock fragments.

Qtg Older Channel and Terrace Gravels - Gravel with minor amounts of silt and clay.

p-εp Precambrian Prichard Formation - Argillite, quartzose argillite and argillaceous quartzite.

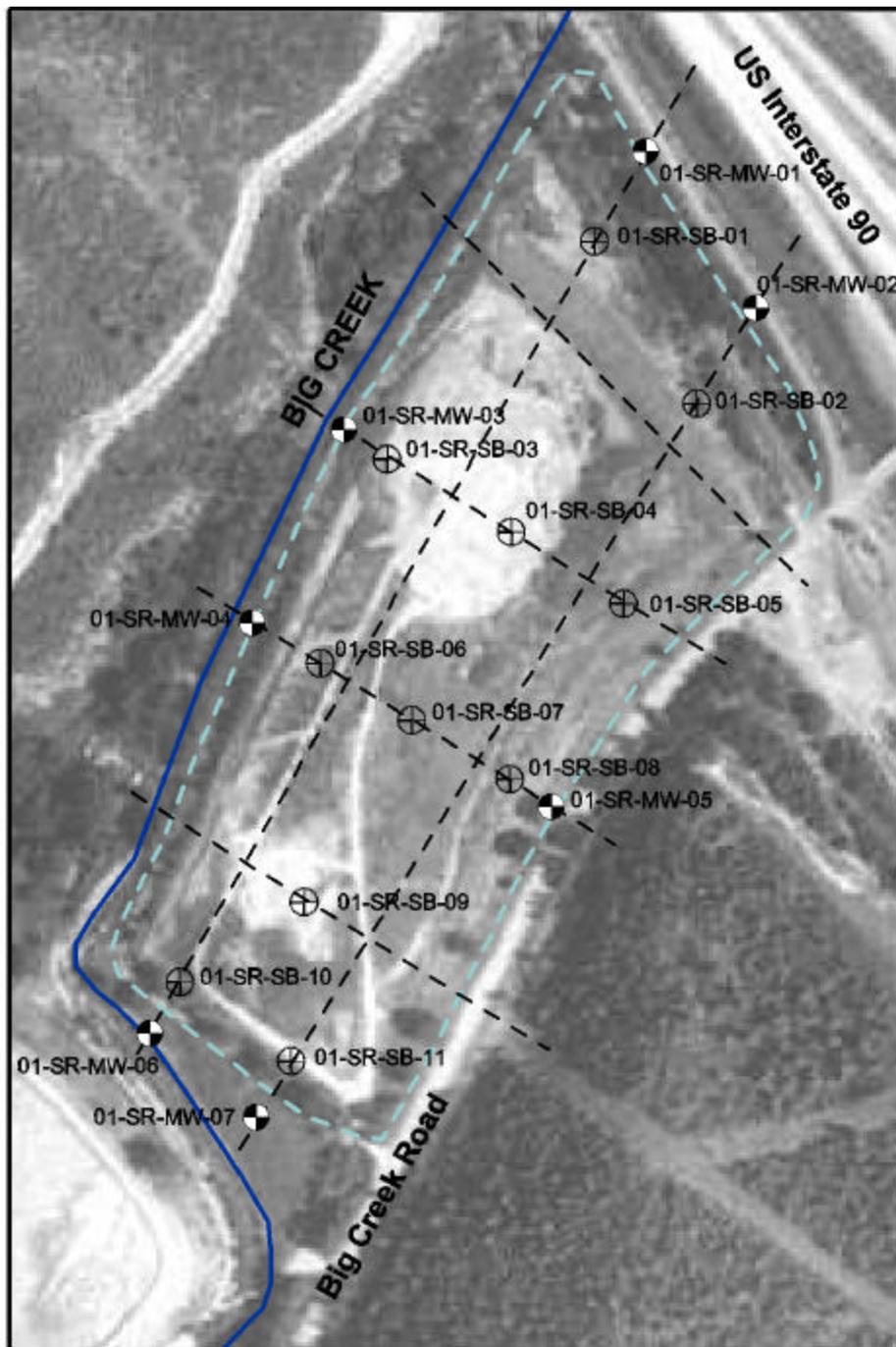
Reference: Woodward-Clyde Consultants,
"Geologic Map and Proposed Tailing
Dam Sites, Sunshine Mine" Fig. 1, Job No.
18252, Denver, CO, 5/30/75.



Geology of the Former Tailings Pond
Preliminary Site Investigation
Proposed Sunshine Repository
Bunker Hill Superfund Site
Big Creek, Idaho

Prepared by:
L.M. Scott
25 Sept 01

FIGURE 1



LEGEND

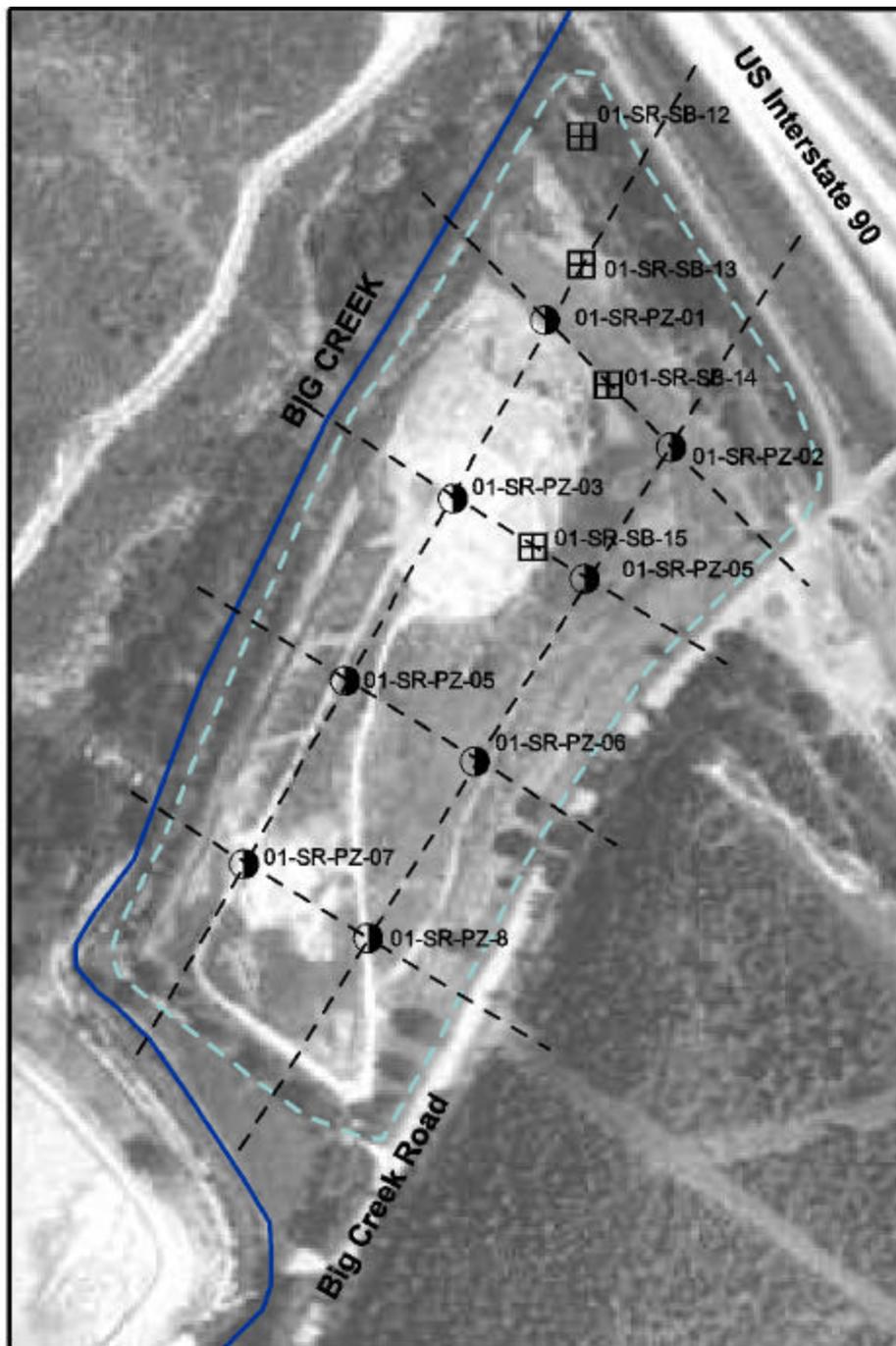
- 01-SR-SB-01
 Rotosonic Soil Boring
- 01-SR-MW-01
 Monitoring Well
- Former Tailings Pond Boundary**
- Perennial Stream**



Rotosonic Soil Borings and Monitoring Well Locations
 Coeur d'Alene Basin Time Critical Removal Action
 Proposed Sunshine Repository
 Preliminary Site Investigation
 Big Creek, Idaho

Prepared by:
 L.M. Scott
 28 Sept 01

FIGURE 2



LEGEND

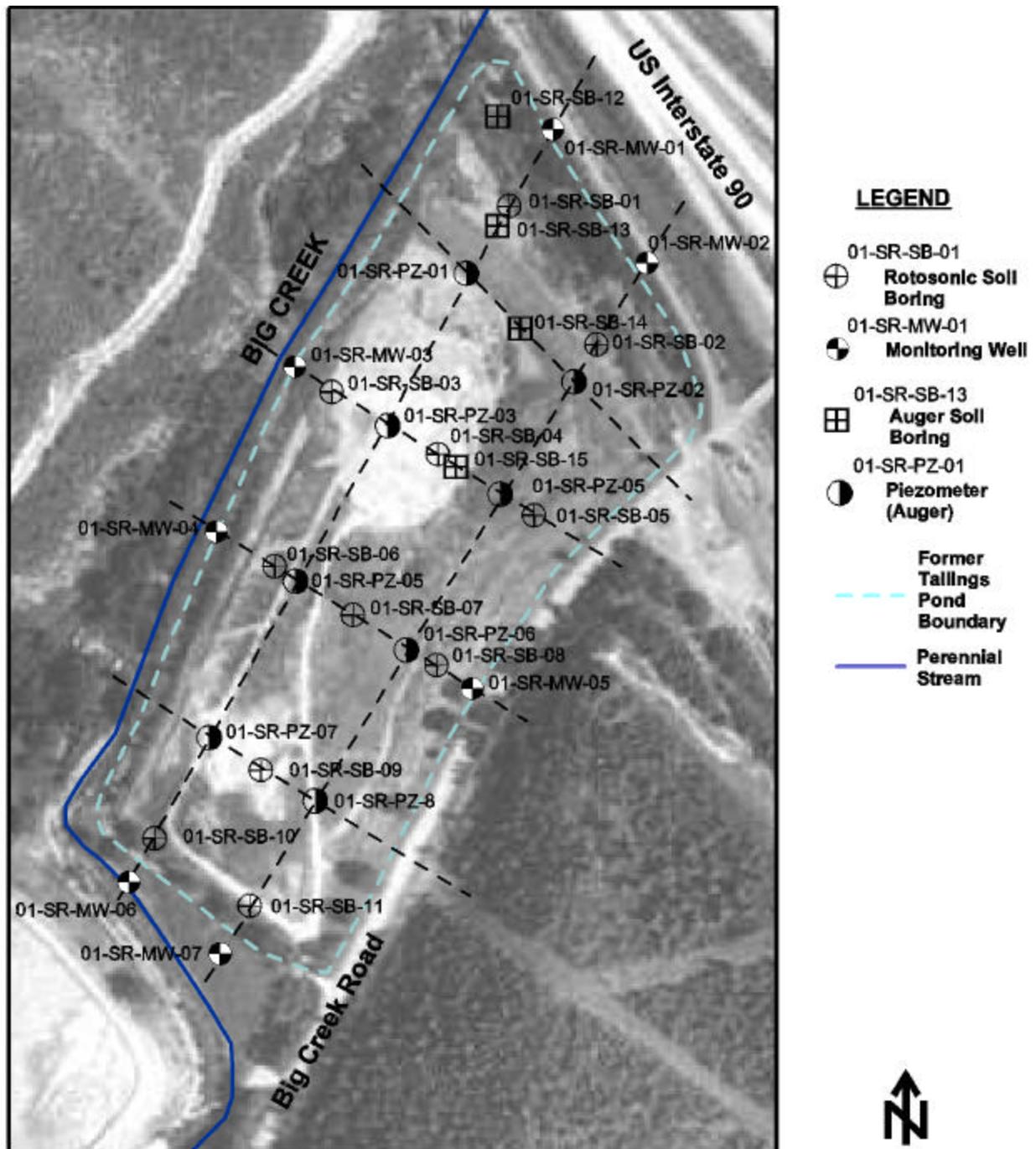
- 01-SR-SB-01 Rotosonic Soil Boring
- 01-SR-MW-01 Monitoring Well
- 01-SR-SB-13 Auger Soil Boring
- 01-SR-PZ-01 Piezometer (Auger)
- Former Tailings Pond Boundary
- Perennial Stream



Auger Soil Borings and Piezometer Locations
Coeur d'Alene Basin Time Critical Removal Action
Proposed Sunshine Repository
Preliminary Site Investigation
Big Creek, Idaho

Prepared by:
L.M. Scott
28 Sept 01

FIGURE 3



All Soil Borings, Piezometer, and Monitoring Well Locations
Coeur d'Alene Basin Time Critical Removal Action
Proposed Sunshine Repository
Preliminary Site Investigation
Big Creek, Idaho

Prepared by:
L.M. Scott
28 Sept 01

FIGURE 4



ATTACHMENTS

be classified by the contractor so as to provide a reasonable relationship (i.e., appropriate level of skill comparison) between such unlisted classifications and the classifications listed in the wage determination. Such conformed classes of employees shall be paid the monetary wages and furnished the fringe benefits as are determined. Such conforming process shall be initiated by the contractor prior to the performance of contract work by such unlisted class(es) of employees. The conformed classification, wage rate, and/or fringe benefits shall be retroactive to the commencement date of the contract. {See Section 4.6 (C)(vi)} When multiple wage determinations are included in a contract, a separate SF 1444 should be prepared for each wage determination to which a class(es) is to be conformed.

The process for preparing a conformance request is as follows:

- 1) When preparing the bid, the contractor identifies the need for a conformed occupation(s) and computes a proposed rate(s).
- 2) After contract award, the contractor prepares a written report listing in order proposed classification title(s), a Federal grade equivalency (FGE) for each proposed classification(s), job description(s), and rationale for proposed wage rate(s), including information regarding the agreement or disagreement of the authorized representative of the employees involved, or where there is no authorized representative, the employees themselves. This report should be submitted to the contracting officer no later than 30 days after such unlisted class(es) of employees performs any contract work.
- 3) The contracting officer reviews the proposed action and promptly submits a report of the action, together with the agency's recommendations and pertinent information including the position of the contractor and the employees, to the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, for review. (See section 4.6(b)(2) of Regulations 29 CFR Part 4).
- 4) Within 30 days of receipt, the Wage and Hour Division approves, modifies, or disapproves the action via transmittal to the agency contracting officer, or notifies the contracting officer that additional time will be required to process the request.
- 5) The contracting officer transmits the Wage and Hour decision to the contractor.
- 6) The contractor informs the affected employees.

Information required by the Regulations must be submitted on SF 1444 or bond paper. When preparing a conformance request, the "Service Contract Act Directory of Occupations" (the Directory) should be used to compare job definitions to insure that duties requested are not performed by a classification already listed in the wage determination. Remember, it is not the job title, but the required tasks that determine whether a class is included in an established wage determination. Conformances may not be used to artificially split, combine, or subdivide classifications listed in the wage determination.

**GEOLOGY SUPPLEMENT TO THE
SCOPE OF SERVICES**

REVISED: 15 OCTOBER, 2001

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1.0 INTRODUCTION.

This supplement serves as the specifications for accomplishing the geology related tasks identified in the Scope of Services (Scope of Work), to which this supplement is attached. All work shall be performed in accordance with this supplement unless otherwise specified in the site specific Section of the Scope of Services. If there are any differences between this supplement and the Scope of Services, the Architect-Engineer (A-E) shall implement the Scope of Services (Scope of Work.)

- The *A-E shall disregard* all sections of this supplement that do not apply to the tasks as outlined in the Site Specific Scope of Services (Scope of Work.) For example, if no new monitoring wells are to be installed, then the A-E has no reason to refer to the sections on monitoring well installation, construction diagrams, etc.
- The Draft Project Report and Final Project referenced in this document shall be defined in the Site Specific Section of the Scope of Services. If there are any questions regarding this supplement, the A-E shall contact the USACE Project Geologist for clarification.
- **Regulatory Requirements.** Field investigation procedures shall be conducted in accordance with all federal, state, and local requirements. If the specifications as set forth in this Scope of Services do not meet state or local requirements, contact the USACE Project Manager (USACE-PM) for resolution of differences. The A-E is responsible for determining applicable federal, state, and local requirements.

2.0 QUALITY ASSURANCE/QUALITY CONTROL.

2.1 Work Plans

A plan shall be submitted by the A-E for approval before any field work for the project is begun which addresses all quality assurance/quality control (QA/QC) procedures to be implemented in the field. This plan shall comply with the appropriate regulatory requirements as referenced in the Scope of Services (SOS) for this project. This plan shall include, at a minimum, the A-E's methods, equipment, and procedures for carrying out all field work including drilling, (sampling soils, sediment, ground water, soil vapor and surface water, etc.) monitoring well installation, well development, decontamination procedures, aquifer testing, geophysics, and surveying. This plan is not a separate document. This information shall be incorporated into the A-E work plans, which address overall project QA/QC.

2.2 Deleted.

3.0 SOIL BORINGS AND MONITORING WELL BORINGS.

Soil borings and monitoring wells may be required to investigate the vertical and horizontal extent of site-specific contaminants. Soil samples for chemical analysis may also be required from borings drilled for monitoring well installations, as directed in the Site Specific Section of the Scope of Services. All borings for soil sampling and monitoring well installations shall be drilled and sampled according to requirements discussed in the following sections.

3.1 Utility Clearances and Permits.

The A-E shall be responsible for obtaining and coordinating all utility clearances and drilling permits. If it is necessary to move a boring in order to avoid utilities, the A-E shall be responsible for relocating the boring to a suitable location which accomplishes the intent of the original location. The new location shall be as close as possible to the original location. Both locations shall be shown on the boring log. The A-E shall take all reasonable precautions to protect persons and property near the drill site.

3.2 Drilling Methods.

All borings shall be drilled by a method of the A-E's choosing unless otherwise specified under the Site Specific Section of the Scope of Service. The method(s) shall be proposed by the A-E and approved by

the USACE Project Geologist (PG) prior to use. The method(s) shall be discussed in the A-E work plans. The drilling method must allow, or provisions must be made for, accurate determination of the depth to ground water surface. If a well is to be installed in a boring, the boring shall be of sufficient diameter to permit at least two inches of annular space between the boring wall and the sides of the centered riser and screen. The boring diameter shall be of sufficient size to allow for the accurate placement of the screen, riser, and centralizers, filter pack, bentonite and grout. The A-E's drilling method shall maintain the integrity of the borehole (i.e. prevent collapse) during backfilling or well installation. No grease shall be used on drill pipe joints. The use of any lubricants shall be submitted for approval in the A-E work plans and shall be noted on the boring logs. The A-E shall provide documentation (brand name, chemical analysis of product composition, etc.) for all materials introduced into the boring during drilling, for approval prior to use.

3.3 Aquifer Protection.

If other than the uppermost water yielding zone is penetrated during drilling, precautions shall be taken to prevent the downward (or upward) movement of any contaminants. The drilling method and procedure to be employed shall be described in detail in the work plans for USACE review and approval prior to field deployment.

3.4 Decontamination.

All sampling equipment shall be decontaminated according to the requirements stated in the Chemistry supplement to this Scope of Services. All drill pipe, drilling tools, bits, etc. shall be free of potentially contaminating materials (i.e. grease, oil, paint, etc.) and shall be steam cleaned prior to use at each well boring. Drilling equipment that may potentially cross contaminate samples, such as auger center plugs, core barrels, clean out bits, etc. shall be decontaminated between each boring location. The drill rig shall be steam cleaned prior to use at each site if the project consists of more than one site. The rig shall be free of leaks, which could contaminate the holes (i.e. hydraulic fluid, oil, gas, loose paint, etc.).

3.5 Geotechnical Sample Requirements.

During drilling of all borings, soil sampling shall be performed at regular intervals to allow for accurate logging of the soil lithology and to obtain material for geotechnical testing. Sampling may be performed using a split spoon sampler or thin wall (Shelby tube) sampler using the techniques given in ASTM D 1586-84 and ASTM D 1587-94, respectively. Other type samplers (California split tube, hollow stem auger continuous sampler, etc.) may also be used if included in the A-E work plans for approval. All samplers used to collect samples for chemical analysis shall be stainless steel. Samples to be used only for logging and geotechnical testing may be taken with sampling devices that are not stainless steel.

3.5.1 Unless otherwise indicated in the Site Specific Section of the Scope of Services, soil samples for lithologic logging shall be collected continuously for the first ten feet and every five feet for the remaining depth of each boring. Material recovered from geotechnical sample intervals may also be utilized to meet the requirements for chemical sampling, i.e. a sample for geotechnical testing and a sample for chemical analysis may be taken from the same split spoon after the material is logged. Where the material quality is insufficient to meet all needs, samples for chemical analysis shall be collected first.

3.5.2 All soil samples shall be visually classified in the field using the Unified Soil Classification System (ASTM D 2488-93). In order to verify the field classifications and to obtain additional data on the composition of the subsurface materials, the A-E shall retain samples for laboratory geotechnical testing. Refer to the site-specific section of the SOS for specific sampling and testing requirements. This testing shall consist of Grain Size Distribution (ASTM D 421-85 & 422-63), Atterberg Limits (ASTM D 4318-95), and moisture content (ASTM D 2216-92). If multiple borings are performed at a site, the A-E shall attempt to select

samples for geotechnical analysis which are representative of all materials on site. In monitoring well borings, one sample shall be collected from the screened portion of the aquifer to confirm validity of the screen design.

3.6 Deleted.

3.7 Backfilling.

All borings shall be backfilled with grout or tamped cuttings in accordance with the Site Specific Section of the Scope of Services. Grout backfill shall be placed consistent with paragraph 4.6 of this supplement. The borings shall be backfilled immediately after the sampling is completed unless saturated conditions have been encountered or a monitoring well is installed. In borings encountering saturated conditions, a 24-hour ground-water level shall be measured before backfilling. Borings left open overnight shall be covered to lessen the potential for injury to personnel and to minimize the potential for any surface drainage entering the boring.

3.8 Site Restoration.

The site shall be restored to the condition proper to field work that is acceptable to the owner/base/facility within 5 days of the completion of the site investigation. **High visibility areas or high traffic areas shall be immediately restored upon completion of the site investigation.** Drums (if used) shall be staged to a pre-designated drum staging area specified by the owner as part of this site restoration. The drum staging area shall be identified in the work plans. The drums shall be placed on wooden pallets for temporary storage. The USACE shall provide the final approval of the site restoration.

4.0 WELL DESIGN AND INSTALLATION.

The wells shall be constructed according to all applicable federal, state, and local requirements. If the specifications as set forth in the Scope of Services do not meet regulatory guidance or requirements, contact the USACE Technical Manager (USACE-PM) for resolution of differences. The A-E is responsible for determining all applicable regulatory agency requirements and for obtaining all state and local well permits required for wells with the yields anticipated during development and sampling.

All well materials (except for “factory sealed” plastic wrapped pipe) shall be steam cleaned immediately before installation and shall remain clean until installed in the boring or the material shall be steam cleaned again. The following specifications shall be followed except when site specific requirements may be different where noted in the Site Specific Section of the Scope of Services. The A-E shall provide documentation (brand name, sizes, etc.) for all well and seal materials that shall be used for well installation. This data shall be presented in the work plan.

4.1 Well Riser.

Well riser shall consist of poly-vinyl chloride (PVC) or stainless steel. PVC pipe (if used) shall be new, threaded, flush joint, and as a minimum, conform to the requirements of ASTM F 480-81 SDR 13.5 (Schedule 40). It shall bear markings that shall identify the materials and shall carry the seal of the National Sanitation Foundation. Stainless steel pipe (if used) shall consist of new, flush jointed and threaded, type 304, corrosion resistant steel. Riser sections shall be joined by threaded flush-joint couplings with chemically inert O-rings, to form watertight unions. Adhesives or solvents shall not be used to join the casing sections. The use of Teflon tape on threaded joints is acceptable and shall be noted on the well construction log. No lead shot or lead wool is to be employed in producing seals at any point in the well.

4.2 Well Screen.

The A-E shall have the responsibility of selecting the screened area of the borehole so that the completed monitoring well provides data that meets the project data quality objectives. Well screen shall be constructed of the same size and strength material as the well riser. The screen material shall be non-

contaminating, non-clogging, *continuous slot, wire wrap design*. All screen sections shall be threaded, flush joint design. **Field slotted or factory slotted screen** is **not permitted** unless otherwise specified in the site-specific requirements. The slot size shall be determined by the A-E based upon available subsurface data and designed to be compatible with aquifer and gravel pack material. For water table wells, normal, seasonal fluctuations in the water table elevation shall be taken into consideration when placing the well screen so that monitoring shall be possible throughout an average year. Normal fluctuations shall be determined through a review of local well records and available literature. Sediment traps (sumps, tailpipe) shall not be used below the screened portion in monitoring wells unless directed by the USACE-Omaha District Project Geologist. The procedure to be used in the field for determining the screen placement shall be presented in the A-E work plans.

4.3 Filter Pack.

The annular space around the well screen shall be backfilled with clean, washed, well-rounded silica sand sized to perform as a filter between the formation material and the well screen. The grain size of the filter pack that is used shall be included in the A-E work plans (with selection rationale) and shall be shown on the well construction log. A grain-size distribution curve for all filter pack material shall be submitted by the A-E in the work plan and in the Final Project Report along with the well construction diagrams. Unless otherwise specified in the site specific SOS, the A-E shall collect and test for grain size distribution a minimum of one representative sample of the filter pack material to assure compliance with the work plan. This sample shall be collected at the site. The filter pack material shall be tremied into place to avoid bridging and ensure a continuous filter pack throughout the screened interval of the well. The filter pack shall extend approximately 1 foot below, and 3 to 5 feet above the well screen. If the boring extends more than 1 foot below the bottom of the screen, the A-E shall propose backfilling methods and materials in the A-E work plan.

4.4 Well Plumbness and Alignment.

All riser and screen casing shall be allowed to hang in tension during the installation process in order to be set round, plumb, and true to line. A 10-foot long section of pipe, $\frac{1}{16}$ to $\frac{3}{4}$ inch less in diameter than the inner diameter of the well riser pipe, shall be run through the entire length of the well to check the alignment. The result of such test shall be recorded on the Daily Quality Control Reports and the installation diagram. If the pipe does not pass freely for the entire depth of the well, the A-E shall replace or repair the well at no additional cost to the Government, if so directed by the Contracting Officer. The pipe section shall be decontaminated with steam prior to the test. Adequate precautions shall be taken to prevent cross-contamination of wells by changing the rope attached to the pipe or decontaminating the cable prior to each alignment test.

4.5 Bentonite Seal.

A 3-5 foot thick bentonite seal shall be placed in the annular space above the well screen and filter pack sand. The seal shall be composed of commercially manufactured sodium bentonite pellets. Bentonite pellets shall not exceed one-half inch diameter. The bentonite pellet seal shall be allowed to hydrate a minimum of 4 hours before grouting begins. If the bentonite seal is positioned above the water table, the bentonite shall be installed in 1-foot lifts with each hydrated a minimum of 30 minutes between lifts before proceeding. Clean, potable water shall be added to hydrate the bentonite. After the placement of the final lift, the bentonite seal shall be allowed to hydrate an additional two hours before grouting begins.

The bentonite seal shall be placed immediately after installing the filter pack, unless the well is going to be developed prior to placement of the seals, in which case, the seal shall be placed immediately upon completion of development.

4.6 Annular Seal.

Grout shall be placed by pumping through a side discharging tremie pipe with the lower end of the tremie pipe located within 3 feet of the top of the bentonite seal. Pumping shall continue until undiluted grout flows from the boring at the ground surface. The annular seal shall be placed within 48 hours, but no sooner than 4 hours of the bentonite seal installation.

Cement grout shall be placed above the bentonite seal to the ground surface. The cement grout shall consist of a mixture of Portland Cement (ASTM C 150) and water in the proportion of not more than 7 gallons of approved water per bag of cement (94 pounds). Additionally, 3 percent by weight of sodium bentonite powder shall be added unless prohibited by state or local regulations. Grout shall be placed by pumping through a side discharging tremie pipe with the lower end of the tremie pipe located within 3 feet of the top of the bentonite seal. Pumping shall continue until undiluted grout flows from the boring at the ground surface.

4.7 Protection of Well.

At all times during the progress of the work, precautions shall be taken to prevent tampering the well or the entrance of foreign material into it. Run-off shall be prevented from entering the well during construction. Upon completion of the well, a suitable vented or loose fitting cap shall be installed to prevent material from entering the well. A vent hole of 1/8 inch diameter shall be drilled into the cap. The well riser shall be surrounded by a larger diameter protective non-corrosive steel or aluminum casing rising 2 to 3 feet above ground level and set an equal distance below the ground surface into the cement grout backfill. The casing shall be installed in a manner that does not hinder access to the monitoring well for purposes of cap removal, taking samples or water level measurements. The outside of all protective casings shall be painted a color specified by the USACE-PM. Refer to Site Specific Section for color requirements (the default color-blaze orange). The protective casing shall be provided with a locking cap and lock. The cap shall be designed to prevent water from entering the protective casing. All locks shall be brass (non-rusting) and keyed alike. Three (3) duplicate keys shall be provided: two to the USACE-PM and one to the owner unless otherwise specified. A minimum 2 feet by 2 feet square by 4 inches thick concrete (cement, aggregate, water) pad, sloped away from the well, shall be constructed around the well casing with the top outer edge at the final ground level elevation. Care shall be taken not to lock the concrete pad to the protective casing. Three 2-inch diameter or larger concrete filled steel posts shall be equally spaced around the well and cemented in place 2 to 3 feet below ground, outside the concrete pad. The posts shall be a minimum of 3 feet above ground. The ground immediately surrounding the top of the well shall be sloped away from the well.

4.7.1 Flush Finish Completion.

Some wells may be required to be finished flush with the ground or pavement if they are in areas of heavy traffic. This requirement shall be stipulated in the Site Specific Section of the Scope of Services or determined by the site owner. If this is required, the A-E shall submit the proposed locations and flush mounted well designs in the A-E work plan for approval. Flush finished wells shall also be equipped with a lock and shall be protected from the entry of surface fluids into the well. Protective posts shall not be required on flush-finished wells.

4.7.2 Cold Climate Completion.

In climates with alternating freezing and thawing conditions, the well must be designed to minimize the potential for damage caused by frost heaving. The A-E shall determine the frost heave potential and include damage minimizing surface completion design details such as a gravel blanket in lieu of the concrete pad, in the A-E work plan.

4.8 Monitoring Well Installation Diagrams.

Suitable diagrams detailing the as-built configuration of each monitoring well shall be prepared for inclusion in the Project Report. The diagrams shall be prepared by a qualified geologist present during all drilling operations. Two legible copies of each well installation diagram shall be completed and sent to the USACE within five days of completion of each well. The well shall not be accepted by the USACE before the drill logs and installation diagrams are received and approved. Information provided on all diagrams shall include, but not be limited to the following:

- 4.8.1 Project and site names, well number, and the total depth of completed well.
- 4.8.2 Depth of any grouting or sealing, and the amount of cement and/or bentonite used, and the total boring depth.
- 4.8.3 Depth and type of well casing.
- 4.8.4 Static water level upon completion of the well and after well development.
- 4.8.5 Installation date or dates, and name of the driller and the geologist installing the well. Each installation diagram shall be signed by the preparer.
- 4.8.6 All pertinent construction details of monitoring wells, such as depth, volume and description of all backfill materials installed (such as gravel pack, bentonite, and grout); gradation of gravel pack; length, location, diameter, slot size, material (PVC, etc.), and manufacturer of well screen(s); position of centralizers; and location of any blank pipe installed in the well.
- 4.8.7 Source and volume of water added during drilling and well installation.
- 4.8.8 Descriptions of surface completion, including protective steel casing, protective pipes, and concrete surface seal.
- 4.8.9 A description of any difficulties encountered during well installation.
- 4.8.10 Surveyed coordinates and elevation of top of ground and top of well riser where ground water is measured. A notch or mark on the casing where ground water is measured should be noted. (Generally, a mark or notch should be made on the north side of the casing.)

4.9 Temporary Capping.

Any well that is to be temporarily removed from service or left incomplete due to delay in construction shall be capped with a watertight cap and equipped with a "vandal proof" cover satisfying applicable state or local regulations or recommendations.

4.10 Identification of Wells.

The A-E shall securely affix a permanent corrosion resistant tag to the outer steel protective casing of each well which clearly identifies the well number, depth, date of installation, the A-E company name and the top of riser measuring/point elevation. The well shall also be clearly identified as a ground water monitoring well, (or other type of well as applicable) either on the tag or by other means which must be approved by the USACE. On flush finished wells, the tag shall be fixed to the inside of the cover and the outside clearly labeled as a monitoring well.

4.11 A-E Responsibility for Monitoring Wells.

It is the responsibility of the A-E to properly plan, design, install, develop, and test monitoring wells so that they are suitable to produce representative ground water samples in sufficient quantity and quality for geochemical testing. The A-E shall ensure that the intentions of this Scope of Services and best construction practices are carried out.

4.11.1 Well Replacement. If the A-E, due to his inadequate design or construction, installs monitoring wells that are not suitable for their intended use or not in accordance with specifications, the Contracting Officer shall disapprove the well and direct the A-E to repair or replace it at the Contracting Officer's discretion. This work shall be done at no additional cost to the Government.

4.11.2 Abandoned Wells. If a monitoring well is disapproved by the USACE or is abandoned by the A-E for any reason, the hole shall be abandoned in accordance with paragraph: Well Abandonment. Such work shall be done at no additional cost to the Government.

4.12 Deleted.

4.13 In-situ Permeability Testing (Slug Testing).

After development of monitoring wells, the A-E shall determine for each new well at each site the in-situ permeability of the screened formation using an appropriate method. Slug tests shall be performed for all new wells at each site unless otherwise specified in site specific SOS. The A-E shall propose the methods expected to be used and references for those methods in the A-E work plans. No water or other liquid may be introduced into the well. Only the rising head portion of slug tests shall be analyzed in well screened partially in the unsaturated zone. All instrumentation and materials placed into the well shall be decontaminated according to the requirements given for sampling equipment. If for any reason in-situ tests can not be completed at any well, the A-E shall contact the USACE-PM immediately for instructions.

4.14 Water Source.

Water for drilling, steam cleaning, and other necessary field activities shall be arranged by the A-E and approved by the USACE. Chlorine-free water shall be used if a suitable source is available. The A-E shall be responsible for collecting and transporting all water to the drilling areas for required uses. The A-E shall sample the water at each source and test it for the same parameters specified for ground water samples under the Site Specific Section of the Scope of Services. In addition, a sample shall be obtained at the site from the delivery/transport vehicle and tested for the same parameters as the source sample. This information and documentation of the source of the water (i.e. fire hydrant location, etc.) which was used and any impact it may have on any of the analytical results performed under this Scope of Services shall be included in both the Draft and Final Project reports. The A-E shall be responsible for providing any deionized water required to perform this work.

4.15 Monitoring Well Log Book.

A log book shall be prepared by the A-E for maintaining a record of all personnel who access the monitoring wells. The notebook shall be permanently bound and have at least one page for each well and shall contain the keys to the well caps. The book shall be kept with the site owner. The log book shall include a listing of all existing and newly installed monitoring wells on the site or installation and shall identify their locations by site location and/or number and horizontal coordinates.

A warning shall be clearly visible in the log book stating the responsibility of all individuals to use any special procedures required to protect the integrity of the wells and of the data obtained from them. The log book shall also contain a detailed description of the decontamination procedures required for any equipment that enters the well. The book shall contain log pages that shall include, as a minimum,

labeled columns for the date, individual's name and organization, well number, well location and purpose of activity performed (i.e. sampling, water level measurement, etc.), and the condition of the well. The book shall be organized such that additional entries and new wells can be added at a later date.

If a log book already exists for the site or installation, the A-E shall add the data for newly installed wells to the existing book.

5.0 SAMPLING TECHNIQUES -EQUIPMENT AND METHODS.

5.1 Soil Sampling.

Sampling for chemical analysis shall be performed using a stainless steel split-spoon sampler. Alternate sampling methods may be proposed for approval in the A-E work plans. Soil grab samples for volatile organic or semi-volatile analyses shall be obtained sub-sampling the material retrieved in the split spoon. Sub-sampling shall be done immediately upon opening the split spoon, and shall be done as soon as possible once the split-spoon sample is taken from the boring. The portion of the split-spoon sample, which represents slough, shall not be sum-sampled. The A-E is responsible to recover adequate soil volume for all analytical requirements. If the sample volume of the first sample is not adequate, another sample shall be attempted from immediately below the previous sample or from the same depth in a boring drilled immediately adjacent to the boring in which the sample failed. This shall be done at no additional cost to the Government. The A-E shall include in the A-E work plans methods to be used to recover additional samples that are consistent with the project data quality objectives. Shallow soil samples for chemical analysis may be obtained with a stainless steel hand auger or a similar device if approved by the USACE Project Geologist in the A-E work plans.

Homogenizing (mixing) of soil samples shall be performed in a stainless steel bowl using stainless steel stirring devices that have been decontaminated prior to each homogenizing procedure.

Sampling equipment, sampling methods and decontamination procedures shall be clearly indicated in the A-E work plans.

5.2 Headspace Screening Method.

When the Site Specific section of the SOS specifies headspace screening, the A-E shall screen soil samples for volatile organic compounds in the field at the time of sample collection. Field screening shall utilize either an organic vapor analyzer equipped with a photo-ionization detector (PID) or a flame-ionization detector (FID). If a high humidity condition exists during the time period when field activity is to be performed, the FID is recommended since a PID is not reliable screening instrument under these conditions. The ionization potential of lamp for the PID shall be optimized for the contaminants of concern. The A-E shall perform field screening in accordance with the following procedures unless alternate procedures are submitted and approved in the A-E work plans.

5.2.1 Immediately upon opening the split-spoon (or other sample retrieval device) and after collecting the volatile organic sample (if required), a representative portion of the sample shall be collected and placed in a clean, contaminate-free jar. (The sample may be placed in a new, clean, plastic sandwich bag inside a jar to minimize the number of new jars required. **If the plastic bag method is utilized, readings shall be taken inside empty bags to ensure no external contamination is being introduced.**)

5.2.2 If the volume of sample recovered is insufficient for all analytical requirements, then the material used in the headspace readings could be utilized for any non-volatile sampling requirements (i.e. the headspace material could be used to fulfill the geotechnical requirements).

NOTE: If due to insufficient sample volume a additional sample was retrieved immediately below the initial attempt, an additional headspace reading is not required.

5.2.3 Seal each jar with at least on continuous sheet of aluminum foil, using the jar lid to secure the foil.

5.2.4 Vigorously agitate the sample jar for at least fifteen seconds and then allow a minimum of ten minutes (or as the environmental conditions dictate) for the sample to adequately volatilize.

5.2.5 During cold weather, the samples shall be warmed to near room temperature prior to taking the headspace measurement.

5.2.6 Re-shake the jar and then remove the jar lid. Quickly insert the vapor sampling probe through the aluminum foil and record the maximum meter response (which should be within the first two to five seconds). Erratic responses should be evaluated in terms of high organic vapor concentrations or conditions of elevated headspace moisture.

5.2.7 Record headspace screening data on the boring log and any other appropriate documentation (e.g. sample transmittals, field notebooks, etc.) as appropriate.

5.2.8 The screening instrument shall be calibrated according to the appropriate standard span gas and shall be calibrated a minimum of twice daily and before use after a long shut down period (i.e. lunch breaks, equipment breakdowns, weather caused breaks, etc.).

5.2.9 If sample jars are to be re-used in the field, jars must be cleaned according to field decontamination procedures for cleaning of sampling equipment. In addition, headspace readings must be taken to ensure no residual organic vapors exist in the cleaned sample jars.

5.2.10 Any deviation(s) from the approved procedures must be noted on the drill logs and the Daily Quality Control Report (DQCR) and a basis stated for the deviation(s).

5.3 Monitoring Well Sampling.

The A-E shall include in the A-E work plans all methods and equipment to be utilized in the purging and sampling of monitoring wells. After development, all wells shall be allowed to stabilize for a minimum of 2 weeks prior to sampling. For all wells, the A-E shall determine (measure and record) depth to water and the total well depth using an electronic water level probe to determine the water volume to be purged. Prior to purging, determine the presence of Non-Aqueous Phase Liquids (NAPLs) at the top and bottom of the water column. If NAPLs are present, contact the USACE-PM for further instructions. The well shall then be pumped or bailed with clean equipment to remove a quantity of water equal to at least three times the submerged volume of the casing and screen. The same parameters as specified in Paragraph: Well Development, shall be measured and recorded during the purging process. Field parameters shall be measured at the start of purging and twice per casing volume removed. Purging shall continue beyond three casing volumes until these parameters have stabilized (0.2 pH units or a 10 percent change for the other parameter between four consecutive readings). The water sample shall be collected immediately after purging is complete. If the well does not recharge fast enough to permit removing three casing volumes, the well shall be pumped or bailed dry and sampled as soon as sufficient recharge has occurred. Samples shall be drawn and placed in the appropriate sample bottles immediately upon receipt of water at the surface. The samples shall then be placed immediately in a cooler with a temperature of 4 C. Samples shall be packaged and shipped as specified in the Chemistry supplement to this Scope of Services. Specific details are to be outlined in the A-E's work plans. All data generated during purging and sampling shall in included in the A-E QCSR.

5.4 Water Level/NAPL Measurement.

Immediately prior to purging and sampling monitoring wells (paragraph 5.3) the A-E shall conduct a complete round of ground-water elevation and Non-Aqueous Product Layer (NAPL) thickness measurements from all newly installed and existing wells at each site. The water level, NAPL thickness (actual and apparent), time of measurement, well depth, weather conditions at time of measurement and date shall be recorded. Measurements from all wells shall be completed within the smallest timeframe possible to reduce external variables (weather conditions). A maximum 24-hour interval shall be accepted for all measurements. This data shall be included in tabular form in the Draft and Final reports.

6.0 INVESTIGATION DERIVED WASTES (IDW).

Drill cuttings, excess sample materials, drilling fluids, and water removed from a well during installation, development, and aquifer testing shall be disposed of in a manner prescribed in the A-E work plan. Disposal shall be consistent with applicable federal, state, and local regulations or guidance. (Reference EPA/540/G-91/009 Management of Investigation Derived Wastes During Site Inspection) The A-E shall develop field protocols to minimize the amount of waste generated and to segregate clean materials from potentially contaminated materials. These protocols shall be described in the A-E work plans. Site specific disposal options should be discussed with the appropriate regulatory agencies prior to their inclusion in the A-E work plans.

- All materials generated during field activities that are segregated as potentially contaminated shall be placed in water-tight containers supplied by the A-E. If drums are utilized, they shall be new, DOT and EPA approved for transport of hazardous materials. The use of reconditioned drums may be proposed for approval in the A-E work plans. Any drum used shall be sealed, labeled, and recorded so that its contents can be identified as to material and source. At a minimum, drums shall be labeled as to type of material contained, site number and location, boring number (and depths for soils), A-E firm, point of contact and telephone, and date. All materials shall be segregated in separate drums (i.e. soil, water, PPE, etc.). Labeling shall be of a permanent nature, unaffected by exposure to outdoor elements for an extended period of time. Labels shall be placed on the side of the drum and positioned to be easily viewed when drums are staged.
- All potentially contaminated IDW shall be transported to a secured centralized location, on site, at the completion of each boring, well development, or purging event of daily unless otherwise specified in the Site Specific Section of the SOS. Drums shall be secured on wooden pallets and shall not be stacked. The A-E shall include disposal methods for uncontaminated materials in the A-E work plans.
- Results from laboratory analysis of soil and ground water samples collected during the field investigation shall be utilized to further segregate contaminated and uncontaminated drummed materials. Drummed materials identified as clean shall be disposed of in the manner stated in the A-E work plans for uncontaminated materials. Drums containing potentially hazardous materials shall be sampled to characterize the material for off-site disposal. These analysis shall identify the potentially hazardous characteristics of the material, including flammability, corrosivity, reactivity, and TCLP. The A-E shall utilize the analyses to prepare a waste manifest for ultimate shipment of the material to a TSD facility. The A-E is responsible for off-site disposal of any contaminated material. The A-E shall determine the most cost-effective method of disposal and furnish an estimated cost to the USACE-PM.

7.0 WELL ABANDONMENT.

All well abandonment procedures shall be in accordance with this SOS and/or all federal, state, and local requirements. If the specifications as set forth in the Scope of Services do not meet state or local

requirements, contact the USACE-PM for resolution of differences. The A-E is responsible for determining applicable federal, state, and local requirements. For each well abandonment, the documents outlined below shall be completed. The A-E shall be responsible for submittal of all required documentation to the respective state agency and copies shall be provided to the USACE project geologist.

7.1 Well Abandonment Methods.

A description of the methods and procedures to be used for well abandonment shall be submitted with the A-E work plans. The plans shall include, but not be limited to the following:

- 7.1.1 Applicable regulations.
- 7.1.2 Description of well abandonment procedures including drilling and placement of grout.
- 7.1.3 Description of drilling equipment.
- 7.1.4 Description of well abandonment material.
- 7.1.5 Description of quality control procedures including depth measurements, placement of grout. Include also example forms for well abandonment logs and diagrams.

7.2 Well Abandonment Records.

Well abandonment records summarizing the field performance of the items listed in paragraph 7.1 shall be prepared by a qualified geologist or hydrogeologist present on-site during all well abandonment activities. Copies of the records shall be submitted in the draft and final reports.

7.3 Abandonment Procedures.

If there are no state or local regulations governing well abandonment, the following procedures shall be followed:

- 7.3.1 Grout. Grout for well abandonment shall consist of the same mixture specified under paragraph: Annular Seal, of this supplement.
- 7.3.2 Grout Placement. The grout shall be placed by tremie pipe, submerged in the grout at all times. The tremie pipe may be raised as the grout is placed as long as the discharge end remains submerged in the grout. The grout shall be placed from the bottom to the top of the hole in one continuous operation.

8.0 DELETED.