

ROCKY FLATS PLANT
EMD OPERATING
PROCEDURES MANUAL
VOLUME III: GEOTECHNICAL

Manual No.: 5-21000-OPS-GT
Procedure No.: Table of Contents, Rev 50
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Organization: Environmental Management

THIS IS ONE VOLUME OF A SIX VOLUME SET
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•DCN 92.05	EXPIRED	2	EXPIRED
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•93-DMR-000955	Form GT.2A Modification	2	01/10/94
•93-DMR-000960	QC Sample Collection Modification	2	01/10/94

DOCUMENT CLASSIFICATION REVIEW WAIVER
PER R.B. HOFFMAN, CLASSIFICATION OFFICE
JUNE 11, 1991

QUALITY RECORD

A-SW-001355

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DCN 92.03	EXPIRED	2	EXPIRED
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•DCN 93.02	INCORPORATED	2	01/10/94
•DCN 93.03	INCORPORATED	2	01/10/94
•DCN 93.04	INCORPORATED	2	01/10/94
•93-DMR-000956	Form GT.3A Modification	2	01/10/94
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•93-DMR-000957	FORM GT.4A Modification	2	01/10/94
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•DCN 92.01	INCORPORATED	2	01/10/94
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•93-DMR-000961	Form GT.5A Modification	2	01/10/94
GT.06	Monitoring Wells and Piezometer Installation	2	05/12/92
DCN 92.05	EXPIRED	2	EXPIRED
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•DCN92.07	EXPIRED Provide Consistency	2	EXPIRED
•DCN 93.01	EXPIRED Borehole Advancement	2	EXPIRED
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DCN 93.08	PVC Schedule Change	2	05/10/93
DCN 93.09	Change to PVC Casing Thickness	2	05/11/93
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DCN 93.12	Riser Installation	2	09/02/93
DCN 93.13	Cancel DCN 93.11, Item #! for OU 2 SVE Study	2	10/06/93
DCN 93.14	Revision of Figure GT.6-3	2	10/06/93
GT.07	Logging and Sampling of Test Pits and Trenches	2	05/12/92

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DCN 92.01	EXPIRED	2	EXPIRED
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GT.09	Soil Gas Sampling and Field Analysis	2	05/12/92
GT.10	Borehole Clearing	2	05/12/92
GT.11	Plugging and Abandonment of Wells	2	05/12/92
-93-DMR-000962	Form GT.11A Modification	2	01/10/94
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-DCN 92.01	Surface Magnetic Surveys Procedure	2	EXPIRED
-DCN 92.02	Modification to Stacking Requirements	2	EXPIRED
-DCN 92.03	Modification to Method of Taking Readings	2	EXPIRED
DCN 93.01	5.4 Field Procedure Revisions	2	01/25/93
DCN 93.02	5.5 Time Domain Electromagnetic Metal Detection	2	11/22/93
GT.19	Field Gas Chromatographs	2	05/12/92
GT.20	Procedures for Soil Interstitial Water Sampling and Sampler Installation	2	05/12/92
GT.21	Cone Penetrometer Testing	1	05/12/92
DCN 93.01	CPT Rods	1	01/15/93
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GT.24	Approval Process for Construction Activities on or Near Individual Hazardous Substance Sites (IHSSs)	0	05/12/92

DOCUMENT MODIFICATION REQUEST (DMR)

Refer to 1-A01-PPG-001 for Processing Instructions.
Print or Type All Information (Except Signatures).

1. Date 11-2-93
25. DMR No. 93-DMR-000956
SUD

2. Existing Document Number/Revision 5-21000-OPS-GT.03/Rev. 2 ^{RR 11/22/93}
3. New Document Number or Document Number if it is to be changed with this Revision N/A
4. Originator's Name/Phone/Page/Location P. A. Kiefer, X8698, 080
5. Document Title Isolating Bedrock from the Alluvium with Grouted Surface Casing

6. Document Type Procedure
 Other _____
7. Document Modification Type (Check only one)
 New Revision Intent Change Nonintent Change Editorial Correction Cancellation

8. Item	9. Page	10. Step	11. Proposed Modifications
1	3	4.2	Add reference as identified on attached.
2	9,10	6.0	Change requirements of Daily Field Drilling Activities Report as identified on attached
3	FORM GT 3A		Eliminate. Information will be recorded on GT.2A

12. Justification (Reason for Modification, EJO #, TP #, etc.)
Eliminate GT.3A, as all information will be recorded on GT.2A which is a combination of GT.2A, GT.3A, GT.4A and FO.14E.

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PER R.B. HOFFMAN, CLASSIFICATION OFFICE
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If modification is for a new procedure or a revision, list concurring disciplines in Block 13, and enter N/A in Blocks 14 and 15. If modification is for any type of change or a cancellation, organizations are listed in Block 13, then Concurror prints, and signs in Block 14, and dates in Block 15.

13. Organization	14. Print, Sign (if applicable)	15. Date (if applicable)
SME	T. P. Lovseth <i>Timothy Lovseth</i>	11-10-93
SM	P. A. Kiefer <i>[Signature]</i>	11-2-93
ECS	M. C. Brooks (RR) <i>M. C. Brooks</i>	12-13-93
EDM	C. M. Broussard <i>[Signature]</i>	12-09-93
RPM	W.S. Busby <i>[Signature]</i>	12-13-93

18. Originator's Supervisor (print/sign, date) D. D. Stagg *[Signature]* 2 Nov 93
17. Assigned SME/Phone/Page/Location T. P. Lovseth/8706/5134/080-223
18. Cost Center 0202
19. Charge Number ER-GT
20. Requested Completion Date 12/15/93
21. Effective Date 1.10.94
22. Accelerated Review? Yes No
23. ORC Review ORC Review NOT Required
24. Responsible Manager (print/sign, date) Steve Singer *[Signature]* 12/13/93

ISOLATING BEDROCK FROM THE ALLUVIUM WITH GROUTED SURFACE CASING

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Category 2	Organization:	Environmental Management

3.0 PERSONNEL QUALIFICATIONS

Personnel overseeing the installation of grouted surface casing will be geologists, geotechnical engineers, or field technicians with an appropriate amount of applicable field experience or on-the-job training under the supervision of another qualified person.

4.0 REFERENCES

4.1 SOURCE REFERENCES

The following is a list of references reviewed prior to the writing of this procedure:

A Compendium of Superfund Field Operations Methods. EPA/540/P-87/001. December 1987.

Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA. Interim Final. EPA/540/G-89/004. October 1988.

RCRA Facility Investigation Guidance. Interim Final. May 1989.

RCRA Groundwater Monitoring Technical Enforcement Guidance Document. EPA, OSWER-9950.1. Washington D.C. September 1986.

4.2 INTERNAL REFERENCES

Related SOPs cross-referenced by this SOP are as follows:

- SOP FO.3, General Equipment Decontamination
- SOP FO.4, Heavy Equipment Decontamination

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- SOP GT.1, Logging Alluvial and Bedrock Material
- SOP GT.2, Drilling and Sampling Using Hollow-Stem Auger Techniques
- SOP GT.4, Rotary Drilling and Rock Coring
- SOP GT.10, Borehole Clearing
- SOP FO.14, Field Data Management
- SOP GT.24, Approval Process for Construction Activities on or Near Individual Hazardous Substance Sites (IHSSs)

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- (7) Remove the water inside the casing by air-lift methods or bailing before the plug is drilled out and the borehole is advanced past the bottom of the casing.

Alternatively, surface casing may be installed by filling the borehole with grout as the augers are removed, placing the casing into the grout-filled borehole after auger removal, and then forcing the grout from within the casing using a rubber plug. The first method is the preferred method at RFP because it reduces the waste volume of grout and it can be used in holes of all depths. The alternative method of placing the casing into the uncased, grout-filled borehole can be used if large diameter surface casing (approximately greater than 6 inches) is required.

6.0 DOCUMENTATION

All information required by this SOP will be documented on the Borehole Log Form (Form GT.1A) and the ~~Surface Casing Installation Field Activities Report form (Form GT.3A)~~ ~~Daily Field Drilling Activities Report Form (Form GT.2A)~~. Form GT.3A will be filled out for each day of drilling at a given borehole location; and, in situations where more than one boring is drilled and completed per day per drill rig, at least one form will be completed per boring. ~~The borehole log will include information on subsurface material classification and lithology.~~ The ~~Daily Field Drilling~~ Activities Report will include the following information and have space for comments and documentation of general observations:

- Project name ~~and borehole identification~~
- Subcontractor
- ~~Location code~~
- Date
- Weather conditions
- Driller and drilling company
- Geologist and other crew members

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include the following information and have space for comments and documentation of general observations:

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- Project name ~~and borehole identification~~
- Subcontractor
- **Location code**
- Date
- Weather conditions
- Driller and drilling company
- Geologist and other crew members
- Equipment descriptions (rig, etc.)
- Borehole depth ~~and diameter~~