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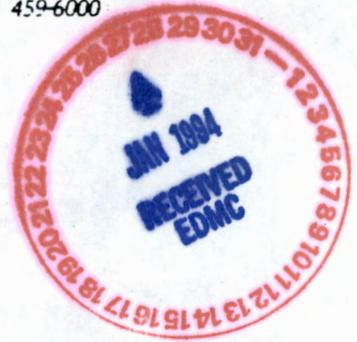


STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

Mail Stop PV-11 • Olympia, Washington 98504-8711 • (206) 459-6000

November 6, 1992

Mr. Steven H. Wisness  
Project Manager  
U.S. Department of Energy  
P.O. Box 550, A-5-19  
Richland, WA 99352-0550



Dear Mr. Wisness:

Re: WAC 173-160 Requirements; Variances, Start Cards, Abandonment

A number of issues have arisen within the last few months that indicate clarification is necessary to aid U. S. Department of Energy (USDOE) and its contractors in application and interpretation of WAC 173-160, "Minimum Standards for Construction and Maintenance of Wells." Specifically: When are variances from the WAC required; how should test pits or other vadose holes be abandoned; does WAC 173-160 apply to cone penetrometer work, horizontal drilling, test borings, or in general, to holes that do not penetrate through the vadose zone? This letter will attempt to answer these questions.

WAC 173-160 is considered to apply directly to construction and abandonment of water supply wells (wells used to withdraw, dewater or recharge ground water) and resource protection wells (monitoring wells, observation wells, piezometers, spill response wells and cased geotechnical test borings). A geotechnical test boring is considered a "temporary cased borehole completed primarily for the purpose of obtaining geologic, or geotechnical data about subsurface soil or rock conditions, and/or for determining ground water levels." (WAC 173-160-030(23) Definitions.) In Washington State, wells, cased horizontal boreholes, cased cone penetrometer boreholes, or other cased boreholes, whether completed in the vadose zone or the aquifer, will meet or exceed the minimum standards as described in WAC 173-160.

Uncased geotechnical borings or excavations are excluded from these regulations, except for WAC 173-160-055, 173-160-010(4), and 173-160-420 which shall apply (WAC 173-160-010(3)(g)). WAC 173-160-055 requires a construction notification such as a start card at least 72 hours prior to construction. Presently, at Hanford, five-day notification is given to the lead regulatory agency prior to commencing field work described in descriptions of work (DOWs). This should satisfy the start card requirement, provided that Ecology's Kennewick office receives that notification (presently, either Darci Teel or Tom Tebb of that office). WAC 173-160-010(4) stipulates that those excavations excluded shall be constructed and abandoned to "ensure protection of the ground water resource and to prevent the contamination of that resource." WAC 173-160-420, "Abandonment of uncased wells", requires that uncased wells shall be "backfilled with concrete, grout, puddled clay, or high-solids bentonite." Ecology interprets the regulations to mean at Hanford: Uncased excavations (e.g., test pits), Uncased geotechnical borings (e.g., uncased cone penetrometer holes) that penetrate to deeper than 15 feet

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shall meet the three requirements discussed above. Those uncased excavations and borings of 15 feet, or less, need meet only WAC 173-160-010(4).

When strict compliance with these regulations is impractical, a written request for variance shall be submitted to Ecology's Lacey office (presently to either Chuck Cline or Krystyna Kowalik) for approval prior to construction. The request for variances can be classified into three categories:

1. Variances where it is anticipated that the construction or remediation of a well will differ from the standards required under WAC 173-160.
2. Variances addressing unforeseen technical difficulties that occurred during drilling or remediation that will change, permanently, construction of the well or its surrounding; e.g., casing or shoe separating and remaining in hole. In fact, wells such as these are candidates for abandonment as per WAC 173-160-415(2). However, all efforts should be made to construct a well in accordance with the regulations. Variances can be written and approved (or denied) on a case-by-case basis.
3. Variances pertaining to well, borehole or excavation abandonment, i.e., grouting materials or abandonment procedures different from those required in WAC 173-160.

Ecology will authorize or deny a variance request within fourteen days of receipt of a written request. In exceptional circumstances, Ecology will allow verbal notification to the appropriate office, with a written request followup. All variances should be site-specific and will be handled on a case-by-case basis. Site-specific can mean that a number of constructions, remediations or abandonments can be addressed in one variance as long as individual logs or pertinent information is included and construction, remediation or abandonment procedures and materials are similar or are individually described. The minimum information needed to process a variance request is included in Enclosure 1. If you have any questions, please contact me at (206) 438-7556.

Sincerely,



Charles S. Cline  
Hydrogeologist  
Nuclear & Mixed Waste Management Program

CSC:dr  
Enclosure

cc: Don Moak, WHC  
Tom Mackie, Ecology, CRO  
Dick Szymarck, Ecology  
Dave Jansen, Ecology

Larry Goldstein, Ecology  
Darci Teel, Ecology  
Krystyna Kowalik, Ecology  
Russ Darr, Ecology

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## ENCLOSURE 1.

## MINIMUM INFORMATION NEEDED TO PROCESS VARIANCE REQUEST

1. Date	13. Schematic Drawing of Proposed Well Construction, as follows:
2. Cognizant Engineer, phone, org.	a. Total depth
3. DOE-RL contact, address, phone	b. Casing material, diameter
4. Driller's name, address, phone, WA DOE license #, WA L&I Contractors Registration #	c. Borehole diameter
5. Project name, location, purpose	d. Screen type, material
6. Reason for variance request (cite WAC that can't be met), reason why WAC can't be met	e. Screen, filter pack, bentonite, grout interval
7. Regulatory oversight agency, contact, phone	f. Surface protective measures (e.g., WAC 173-160-510)
8. Number of wells, boreholes, etc.	g. Surface completion details
9. Estimated life of wells, boreholes, completion date etc.	14. Method of emplacing filter pack, bentonite, grout etc.
10. Site map with well, borehole or excavation location(s)	15. Soil, geologic log, if available, or logs of adjacent holes
11. Available ground water data and proposed constituents to be sampled	16. Proposed abandonment procedure (e.g., WAC 173-160-560)
12. Estimated static water level	17. Please provide additional information or explanation, as needed

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