

STATE OF COLORADO

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Colorado Department
of Public Health
and Environment

SEP 22 2010

Clean Harbors Deer Trail, LLC
108555 East US Highway 36
Deer Trail, Colorado 80105-9611

Re: Request for License Renewal
Colorado Radioactive Materials License Number Colo. 1102-01

Attention: Clyde E. Christman, Radiation Safety Officer

This letter is to request additional information or clarification to the Standard Operating Procedures provided in the renewal documentation dated May 31, 2010. The review of your application is ongoing and this list of issues/deficiencies may not be comprehensive. The Department may provide additional requests for information as needed during the review process. Please provide appropriate documentation and revisions to plans and procedures to resolve each of the following items.

Radiation Protection Plan (SOP 15.RPP.01)

1. Section 4.46 of the Regulations specifies the record retention requirements for individual monitoring. For occupational doses, the requirement is to retain the records for the duration of the license. However, Section 9.1.c.iii of the SOP says the dosimetry records will be retained for one year. Additionally, Section 9.1.g of the SOP says declarations of pregnancy will be retained for three years. Again, the requirement is to retain the records for the duration of the license. Please update the SOP to comply with the Regulations.
2. Several definitions in Section 10 should be edited with the proper superscript or subscript to remove any potential confusion.

Worker Radiation Protection Records (SOP 15.RPP.03)

3. Section 4.46 of the Regulations specifies the record retention requirements for individual monitoring. For occupational doses, the requirement is to retain the records for the duration of the license. However, Section 5.1 of the SOP says the dosimetry records will be retained for one year. Additionally, Section 5.1 of the SOP says declarations of pregnancy will be retained for three years. Again, the requirement is to retain the records for the duration of the license. Please update the SOP to comply with the Regulations.

Prepared by: RJP Reviewed by: MGR Reviewed by: _____ Mailed by: [Signature]
Date: 9/15/10 Date: 9/20/10 Date: _____ Date Mailed: SEP 22 2010
Title: RFI dated 09/15/2010
File: Clean Harbors Deer Trail, LLC; 1102-01: 3

Individual and Area Dosimetry (SOP 15.RPP.04)

4. Section 5.1 of the SOP states “All full-time CHDT workers shall be issued and wear an individual dosimeter.” However, no indication is made for part-time workers who may be considered as radiation workers. Also, this statement would imply that all full-time workers who work at CHDT, including administrative staff, would be issued a dosimeter. Please clarify which individuals will be issued a dosimeter.

Estimation of Inhalation Dose (SOP 15.RPP.05)

5. Section 5.1 of the SOP states the air monitoring from around the cell will be used to calculate the concentration of uCi/ml for any airborne contamination. By using this concentration, the worker exposure may be under represented as the air sampler is running at times when no radioactive air emissions would be expected, for example in the evening or when non-radioactive waste is received. Additionally, the air sampling units are generally on top of the active cell and may not represent the actual airborne exposure for a worker in the cell. Please amend the procedure to more accurately represent the possible inhalation dose for workers.

ALARA (SOP 15.RPP.07)

6. Section 5.0 of the SOP states an ALARA review will be conducted if a fixed or removable contamination survey exceeds ten times the free release values. Please clarify why this was the limit chosen to perform a review of the program.

Radiation Work Permits (SOP 15.RPP.08)

7. It is not clear in this SOP when a radiation work permit would be applicable. For instance, the SOP says a radiation work permit would be applicable in areas with airborne radioactivity. However, most waste disposal operations at CHDT would have the possibility of airborne radioactivity and it would appear most operations would require a radiation work permit. Please clarify the instances and at what action levels a radiation work permit would be appropriate.

Radioactive Materials Acceptance (SOP 15.WAC.01)

8. In section 5.2 of the SOP, the activity levels for the radium-226 and the lead-210 appear to be conflicting. As described in the Proposed Changes to the Radiation Protection Program, the basis for lowering the radium-226 level to 222 pCi/g is because “Ra-226 will always be close to being in equilibrium with its 8 progeny...” Setting the level for lead-210 at 666 pCi/g seems to be directly conflicting with this statement. It would be appropriate to consider having a radium-226 limit at 400 pCi/g (based off of the 5 progeny between radium-226 and lead-210) and a lead-210 limit at 666 pCi/g (based off 3 progeny between lead-210 and lead-206) or to have a radium-226 and lead-210 at 222 pCi/g based off of the 9 progeny between radium-226 and lead-206.

Section 6.3 states “lead-210 analysis in pCi/g will be required in waste where lead-210 is the only parent radionuclide...” If CHDT requests to have the lead-210 limit at 666 pCi/g, samples which test higher than 222 pCi/g should have additional testing to ensure radium-226 levels are not exceeded.

9. The Department disagrees with the removal of performance of gamma spectroscopy for pre-acceptance samples. As described in the Proposed Changes to the Radiation Protection Program, the basis of change indicates the test has been removed because the samples do not emit enough radiation to be distinguished from background levels. However, as stated in Appendix D of this SOP, "Gamma spectrum analysis can also provide insurance against the presence of manmade radionuclides." A non-detect result has value for the confirmatory pre-acceptance sample. Please amend the SOP to include gamma spectroscopy to the pre-acceptance sample.

Waste Tracking (SOP 15.WAC.02)

10. Attachment 1 is the Uniform Waste Manifest. This attachment should be updated to the most recent revision of the manifest.

Radiation Survey of Materials with Radium Scale (SOP 15.WAC.03)

11. The average exposure rates listed in the SOP appear to be contradictory to the maximum exposure rate listed for waste acceptance set forth in SOP Operation of Gate Monitor Detectors (15.OPS.05). Please reconcile the differences between the exposure rates determined for pipe acceptance and the exposure rates for facility waste acceptance.
12. The SOP describes using a Ludlum Model 19 MicroR Meter for determining the exposure rates for waste acceptance. The Ludlum meter is appropriate for determining an exposure rate; however, it would also be appropriate to perform some type of isotopic determination to ensure that a.) activity limits for licensed materials do not exceed the licensed limits and b.) no other isotopic contamination is present on the pipe materials. Please update the procedure to include some type of gamma spectroscopy to ensure compliance with the licensed limits of radioactive materials.

Contamination Control During Waste Treatment Activities (SOP 15.OPS.02)

13. Table 2 in the SOP describes the DOT non-fixed surface contamination limits. The limits listed in the fifth column, the maximum permissible limit for empty packaging, is the limit for allowable internal contamination (49 CFR 173.428(d)). However, the SOP is not clear in this distinction. Please update the SOP to eliminate any possible confusion between the maximum permissible contamination limits for external packaging and internal packages.
14. Having the internal package release limits for an excepted package – empty package in Table 2 would imply packages or materials are shipped in that manner. If any packages are being sent as an excepted package – empty package, please include in the procedure how the other requirements of 49 CFR 173.428 are being met.
15. Section 6.3 of the SOP says the treatment basin and the loading area adjacent to it will be surveyed daily when in use and decontaminated when necessary with the daily wash requirement removed as noted in the Proposed Changes. However, SOP 15.OPS.20 states in section 5.2.1 that the unloading area is washed daily. Please reconcile the procedures so they are not conflicting.

16. The diagram provided in Figure 1 shows more detail than the previous SOP revision; however, there are no radiological areas designated on the map. Please include the radiological areas for the treatment building outlined in Figure 1.

Operation of Alpha-Beta Counter (SOP 15.OPS.04)

17. Table 2 in the SOP describes the DOT non-fixed surface contamination limits. The limits listed in the fifth column, the maximum permissible limit for empty packaging, is the limit for allowable internal contamination (49 CFR 173.428(d)). However, the SOP is not clear in this distinction. Please update the SOP to eliminate any possible confusion between the maximum permissible contamination limits for external packaging and internal packages.

Operation of Gate Monitor Detectors (SOP 15.OPS.05)

18. The limits set forth in section 6.2 for rejected wastes (10 uR/hr) do not agree with the limits set forth in section 3.0 (16 uR/hr). Please reconcile the differences between the activity limits set forth for wastes not classified as radioactive.
19. Section 6.2 of the SOP describes four steps to take for non-radioactive shipments which scan above the set level for incoming waste. However, additional steps, such as contacting the Department to obtain a special DOT permit, should be added to the procedure.

Operation of Exposure Rate / Dose Rate Meters (SOP 15.OPS.07)

20. Sections 2.0, 5.1.5, and 5.2.5 of the SOP make reference that the instruments described in this SOP may be used to determine worker exposure. It is worth noting that while these instruments are useful for determining an exposure rate, they should not substitute any dosimetry requirements for radiation workers.

Personnel Contamination Surveys (SOP 15.OPS.12)

21. In section 5.2 of this SOP, one of the bulleted items references the procedure in Section 5.4. However, section 5.4 of this SOP describes Measurements for Removable Contamination. Looking at the current set of procedures and comparing them with the proposed SOPs with the renewal, section 5.4 was expanded into a separate SOP. Please update the SOP to reference the appropriate section or different procedure.
22. Section 6.1 of the SOP states "The majority of personnel contamination surveys will be performed with the criterion of no contamination present, or no radioactivity above background." Please specify which surveys will be limited to indistinguishable from background and, if a personnel contamination survey will have a limit above background, which surveys those are and the limits used for release.

Equipment and Vehicle Release Surveys (SOP 15.OPS.13)

23. Table 2 in the SOP describes the DOT non-fixed surface contamination limits. The limits listed in the fifth column, the maximum permissible limit for empty packaging, is the limit for allowable internal contamination (49 CFR 173.428(d)). However, the SOP is not clear in this distinction. Please update the SOP to eliminate any possible confusion between the maximum permissible contamination limits for external packaging and internal packages.

Air Monitoring for Radioactive Materials (SOP 15.OPS.15)

24. The SOP is very specific as to the sampling locations surrounding Cell 3. Please keep in mind when Cell 3 is sealed and Cell 4 becomes the active cell, this SOP will have to be revised as part of the license amendment.
25. Section 5.3.2 of the SOP describes how the radon monitors are to be deployed around the cell. However, by having the background locations at the stationary air sampler stations, it would appear that the background would be higher than in area farther away from the active waste cell, thereby lowering the other monitor readings. Please reconsider the placement of the background locations.

Decontamination of Surfaces and Equipment (SOP 15.OPS.18)

26. Section 5.2 of the SOP should specify the steps taken if contamination limits are exceeded during the decontamination of heavy equipment.
27. Section 5.3 of the SOP needs to be changed. Testing the rinse water to verify decontamination is not an effective way to determine if an item has been successfully decontaminated. Each item which is being decontaminated for future use should be checked for removable contamination. Please update the SOP to include steps which verify each item being decontaminated is clean.

Package Receipt Surveys (SOP 15.OPS.21)

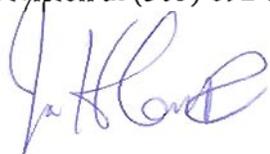
28. Table 1 in the SOP describes the DOT non-fixed surface contamination limits. The limits listed in the fifth column, the maximum permissible limit for empty packaging, is the limit for allowable internal contamination (49 CFR 173.428(d)). However, the SOP is not clear in this distinction. Please update the SOP to eliminate any possible confusion between the maximum permissible contamination limits for external packaging and internal packages

As discussed during the inspection on August 10, 2010, the licensee should ensure that the procedures submitted to the Department are the most current and accurate procedures which the licensee is planning on using. Future compliance inspections will be based upon adherence to the procedures tied to the license during this renewal process.

In the response to this letter, please include all procedures which are revised from the procedures submitted with the license renewal documentation. If possible, please include a digital version of the procedures which indicates the changes made (such as using the track changes feature in Microsoft Word) to help expedite the review process.

Pursuant to Section 12.2 of the Regulations, the Department will consider an application abandoned if it does not receive a reply within forty-five (45) days to its most recent request for additional information. In your response to this request, please reference docket number 9395.

If you have any questions regarding your license or this letter, please contact Phillip Peterson of this Division at (303) 692-3402 or by email at phillip.peterson@state.co.us.



James H. Grice III, Licensing Lead
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