Colorado Voluntary Cleanup and Redevelopment Program Roadmap

A how-to guide

COLORADO
Hazardous Materials & Waste Management Division
Department of Public Health & Environment

For further information call: (303) 692-3404

November 2019

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Background and purpose

There are many sites across Colorado where soils and groundwater have been contaminated by past uses. These sites range in size from small spills, involving a few square feet of surface contamination, to sites where large amounts of contaminants have impacted many square miles of land. In most cases, these sites fall within a regulatory framework which ensures appropriate cleanup and protection of human health and the environment. For example, a given manufacturing facility may have a Resource Conservation and Recovery Act (RCRA) permit to properly manage hazardous waste, or a facility with known contamination may be under a RCRA Corrective Action Order to ensure appropriate cleanup. Other sites across the state are being cleaned up under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

For some sites, however, an appropriate regulatory framework does not exist. For example, contamination which predates the RCRA statute would not be subject to RCRA authority. For a variety of reasons, the owners of these properties may wish to perform cleanups. From the state's perspective, there are benefits to both the citizens and the environment associated with such property owners voluntarily coming forward to clean up a property. In addition to removing contamination from the environment, such cleanups promote the redevelopment of previously contaminated sites (called Brownfields), as opposed to utilization (and potential contamination) of new sites.

As a result, several states have developed programs that provide alternate mechanisms for reviewing, approving, and overseeing these voluntary cleanup-up efforts. In 1994, the Colorado General Assembly passed the Voluntary Cleanup and Redevelopment Act, which formalized a non-regulatory process for cleaning up certain types of sites. This document provides a resource to landowners and their consultants who would like to propose a voluntary clean-up (VCUP) effort or receive a no-action determination (NAD).

The VCUP program operates under the Colorado Department of Public Health and Environment (CDPHE), Hazardous Materials and Waste Management Division. The VCUP program is very streamlined, such that VCUP staff handle all VCUP applications, regardless of the regulatory program(s), except those which involve regulated petroleum storage tanks, which are handled by the Colorado Department of Labor, Division of Oil and Public Safety (OPS). In evaluating each application, VCUP staff coordinate with the various regulatory programs within CDPHE, as appropriate, to ensure consistency.

Unregulated petroleum storage tank sites can be accepted by the VCUP program or by the OPS Petroleum Cleanup and Redevelopment Fund. This OPS fund was created to support the investigation and cleanup of contamination at abandoned former gas stations and other petroleum storage tank properties that have been unaddressed for decades, mainly because these unregulated former storage tank sites were not eligible for reimbursement from the Petroleum Storage Tank Fund. Information about the OPS fund can be found at https://www.colorado.gov/pacific/ops/BrownfieldsProgram.

The intent of this document is to provide guidance regarding the requirements necessary to participate in the VCUP program. It also includes a description of expected state involvement, realistic timeframes for review of VCUP and NAD applications, the type of information applicants will be required to provide, and the degree of cleanup necessary to receive approval of a VCUP or NAD application

The State's goals are to encourage as many voluntary clean-up proposals as possible and remove any barriers landowners might have in coming forward with a VCUP proposal. Traditionally, such barriers have included fear of prosecution or being forced to do more cleanup than necessary for the intended future use of a property. Such barriers hinder environmental cleanup and property redevelopment or reuse. Therefore, this document is

intended to address those issues and provide certainty to potential applicants as to the State's role and expectations, prior to preparing and submitting an application.

Coming forward with contaminated sites

Legal reporting requirements

Most state reporting or notification requirements under environmental statutes involve two types of situations. First, notification is required prior to undertaking an activity involving the emission of air pollutants; the discharge of water pollutants; management of hazardous waste, solid waste, and/or radioactive materials; or the operation of an underground storage tank. Second, most state environmental statutes have spill reporting or notification requirements A summary of these requirements is contained in the pamphlet "Reporting Chemical Spills in Colorado," issued in October 2003 by the Colorado Department of Public Health and Environment.

Most voluntary clean-up situations involve contamination that occurred in the past and do not trigger reporting requirements. An exception to this is past releases from underground storage tanks, which are subject to reporting requirements.

Customer needs

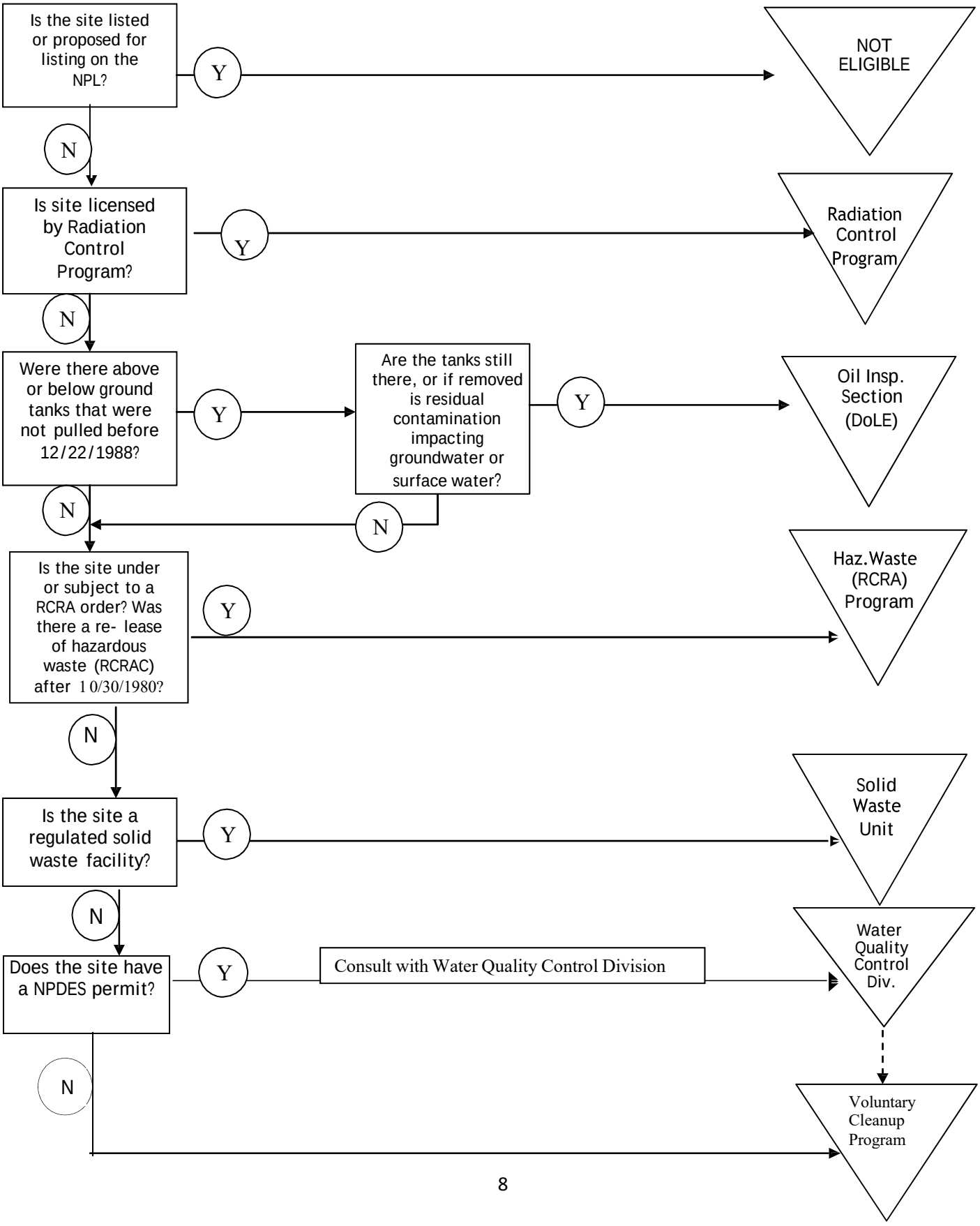
Before applying to the VCUP program, landowners should assess their own needs regarding the property in question. Typically, landowners seek a letter from the state that either approves a cleanup, confirms the property is already clean, or states that the owner will not be held responsible for contamination coming onto the property from another property. These letters are often required in property transactions. If a landowner does not need state concurrence, then application to the VCUP program may not be necessary.

Depending on the site-specific contamination, a landowner may be able to perform the cleanup and simply keep adequate documentation for use as needed. However, the landowner then runs the risk that if a governmental agency has jurisdiction and requires cleanup at a later date, the previous cleanup may be deemed insufficient. By requesting VCUP program approval before performing the cleanup, landowners obtain certainty that the agency considers the cleanup consistent with state requirements. It should be noted that if the contamination is defined by statute as a RCRA hazardous waste, treatment or disposal of the waste may require a permit.

Eligibility requirements and an overview of how the program works

The following flow charts provide eligibility criteria and an overview of the VCUP program. The first flow chart depicts the eligibility decision criteria for the VCUP program. The second flow chart provides an overview of the VCUP program pathway to perform a voluntary cleanup and request a NAD.

VCUP program eligibility flowchart



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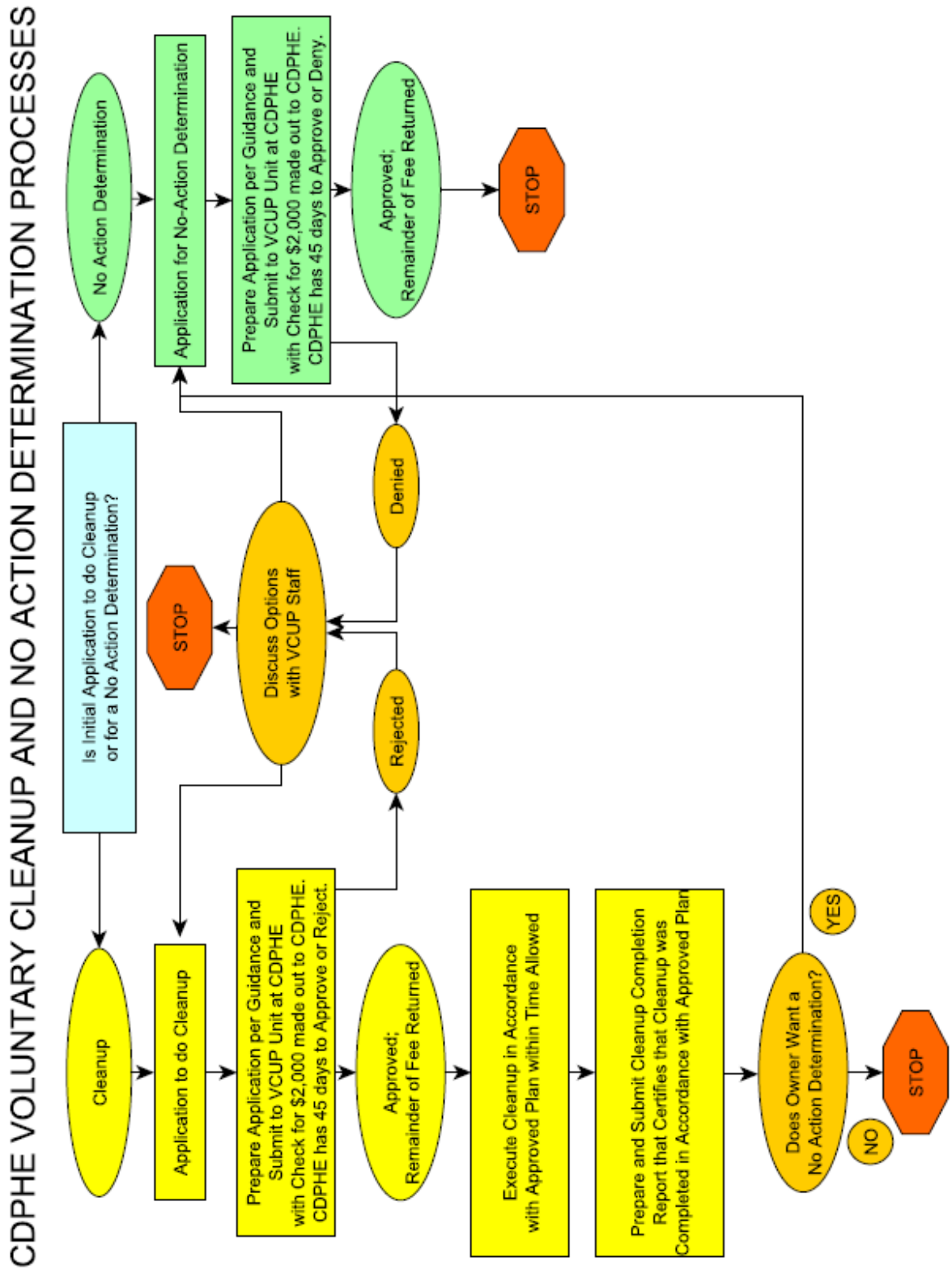
CDPHE VOLUNTARY CLEANUP AND NO ACTION DETERMINATION PROCESSES
Is Initial Application to do Cleanup or for a No Action Determination?
No Action Determination
Application for No-Action Determination
Prepare Application per Guidance and Submit to VCUP Unit at CDPHE with Check for $2,000 made out to CDPHE. CDPHE has 45 days to Approve or Deny.
Approved; Remainder of Fee Returned
STOP
Denied
Discuss Options with VCUP Staff
STOP
Rejected
Cleanup
Application to do Cleanup
Prepare Application per Guidance and Submit to VCUP Unit at CDPHE with Check for $2,000 made out to CDPHE. CDPHE has 45 days to Approve or Reject.
Approved; Remainder of Fee Returned
Execute Cleanup in Accordance with Approved Plan within Time Allowed
Prepare and Submit Cleanup Completion Report that Certifies that Cleanup was Completed in Accordance with Approved Plan
Does Owner Want a No Action Determination?
YES
NO
STOP

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Legislative authority

Authority for the Voluntary Clean-up Program is derived from the Voluntary Cleanup and Redevelopment Act (the Act) (C.R.S.25-16-301) passed in 1994. The purpose of the Act is to "Provide for the protection of human health and the environment and to foster the transfer, redevelopment and reuse of facilities that had been previously contaminated with hazardous substances or petroleum products." The program is designed to operate expeditiously, with minimal administrative processes and costs. Accordingly, no regulations have been promulgated for the Voluntary Cleanup and Redevelopment Act. A copy of the Act is included in Appendix A.

Universe of sites

The Voluntary Cleanup and Redevelopment Act was enacted to address sites not covered by existing regulatory programs and to provide a mechanism for approving clean-up plans. The Act specifically recognizes existing regulatory programs and excludes sites covered by these programs from participation in the VCUP Program. These exclusions are:

1. **Property that is listed or proposed for listing on the Superfund National Priorities List (NPL).** The VCUP Program is allowed to accept sites the U.S. Environmental Protection Agency (EPA) is addressing under Superfund, as long as the site has not been proposed or listed on the NPL. Historically, on these sites, concerns were raised as to whether the EPA could require additional work, despite approval from the State under the VCUP program. In order to address this issue, the State and EPA signed a Memorandum of Agreement (MOA), which provides assurance that the EPA will not take action on sites approved by the VCUP program unless, under exceptional circumstances, there is a substantial threat to human health or the environment. The MOA also addresses EPA involvement in "NPL Caliber" sites, which are sites significant enough to be placed on the NPL which have not yet been proposed as a national priority. For these sites, public notification is required to obtain EPA assurance under the MOA. A copy of the MOA is included as Appendix B.

2. **A facility that has or should have a RCRA permit or hold interim status pursuant to Part 3 of Article 15 (C.R.S. 25-15-301 et. seq.) for the treatment, storage or disposal of hazardous waste.** Facilities with a RCRA permit or interim status are excluded from the VCUP Program and are handled by the CDPHE Hazardous Waste Corrective Action Unit. In addition, any facility having release of a RCRA hazardous waste after 1980 is deemed to have illegally disposed of hazardous waste without a permit and is excluded from the VCUP program under this section.

   In some cases, there may be insufficient information to determine whether the site falls under RCRA authority. The CDPHE Hazardous Waste Corrective Action Unit may defer such questionable sites without further consideration if the following conditions are met:
   - The volume of impacted soil is relatively small and contained on the property.

- Ground water has not been impacted, or contamination does not exceed state standards at the site boundary. Mobility and potential biodegradation of the contaminants will also be evaluated.
- Surface Water has not been impacted
- Aqueous waste is not present
- All releases can be remediated within 24 months with a high probability of success
- Neither long-term monitoring nor and environmental covenant is required.

Even if all of the above criteria are not met, the Hazardous Waste Corrective Action Unit may refer sites to the VCUP Program, if site-specific conditions diminish the severity of the release, and threats to human health and the environment are determined to be minimal. The Hazardous Waste Corrective Action Unit, in consultation with the VCUP Program and the facility representatives, will determine if a specific site should be addressed under the VCUP program or as a RCRA corrective action.

3. **Property that is the subject of corrective action under orders or agreements issued pursuant to the provisions of Part 3 of C.R.S. 25-15-301 et. seq. or the Federal "Resource Conservation and Recovery Act of 1976," as amended.** If the property is under a RCRA order or other agreement to perform cleanup, the cleanup should be conducted under that authority. The site is ineligible for the VCUP program.

4. **Property that is subject to an order issued by or an agreement with the Water Quality Control Division pursuant to C.R.S. 25-8-601 et. seq.** If a property is under such an order or agreements, the cleanup should be conducted under that authority, and the site is ineligible for the VCUP Program. The Colorado Water Quality Control Act and regulations say that any property with ground water contamination, for which the owner/operator is responsible, is subject to an order. These owners should pursue cleanup with the CDPHE Water Quality Control Division. However, the Water Quality Control Division may choose to defer to the VCUP Program, if the contamination does not present an imminent threat to human health (i.e., low concentrations confined to the applicant's property). Contamination that was created by a previous owner is not subject to an order, and therefore is eligible for the VCUP Program. In addition, any site that has a continuous discharge to waters of the state (i.e., draining mine adits) should be permitted under the water quality regulations. There is no variance from these permitting requirements, which remain as long as there is a discharge. However, existence of a discharge permit does not in itself render a property ineligible for the program.

5. **Property that is subject to the provisions of C.R.S. 8-20.5201. seq.** Most underground storage tank sites are handled by the Department of Labor and Employment. Sites that are generally excluded from VCUP participation under this provision include registered underground and above ground storage tanks, which contain petroleum product or "regulated substances." A regulated substance is any substance defined in section 101 of CERCLA, but does not include any substance regulated as a hazardous waste under RCRA. The VCUP Program can handle non-regulated tanks and sites where the tanks were removed prior to December 22, 1988, as long as any residual contamination that exists is not impacting surface water or a source of drinking water.

How to apply/information requirements

The VCUP Program is designed to be a one-time interaction with the CDPHE. However there often is contact between CDPHE and the applicant prior to the application process, to ensure that each application contains all of the necessary information. This approach is designed to avoid an iterative process, requiring multiple reviews and submittals.

As requested by local governments, CDPHE coordinates with the relevant county government and/or health department on all VCUP applications. If the application is for a property within the City and County of Denver, a copy of the application will be sent to the Denver Environmental Quality Division, 200 W 14th Ave #310, Denver CO 80204. If the application is for a site in another county, CDPHE may ask that the applicant send a copy to that county.

Each application should include a detailed site history, outlining past and present uses of the property and identifying conditions that might have contributed to potential or actual environmental contamination. In additional to a history of site uses, the application should also include a thorough discussion of site characterization activities. Site characterization efforts should be based on site history and demonstrate that environmental sampling included appropriate constituents, media, and locations on the property. Sampling and analytical methodologies should be clearly identified. The site characterization data should be compared to established state standards, if they exist. In addition to summary tables of the data, raw data and borehole logs should be included. Lastly, a plan of action should be prepared to either remediate the site or justify a no action determination. Justification for the plan should be based on meeting relevant state standards. If relevant state standards will not be achieved, the application must include an analysis of risk, based on proposed use of the property, and demonstrate that the cleanup is protective of human health and the environment. If site characterization efforts demonstrate a property is not impacted by environmental contamination, or is impacted by contamination from an off-site source, a NAD may be requested.

The Department has prepared guidance detailing the information requirements for the VCUP Program application. This guidance also compares the VCUP program information requirements with the information normally provided in standard Phase I and Phase II Environmental Site Assessments, in order to assist owners with completed Phase I or II reports. This guidance is included as Appendix C to this document.

Review time frame and costs

The VCUP statute requires that the state approve or deny each application within 45 days of submittal. In order to meet this requirement, the applicant needs to submit a complete application and pay the review fee described below. If the program determines that additional information is needed, the Act allows the CDPHE and the applicant to negotiate an extension to the 45-day review period. If the CDPHE receives more than eight applications in one month, the statute allows these applications to move to the next month's schedule, providing an additional 30 days of review time.

Each applicant must submit a check for $2,000, payable to the Colorado Department of Public Health and Environment, as part of the application. The state then bills against the fee for reviewing the application.

If the State's review does not require the entire $2,000 fee, the applicant receives a refund of the unused balance within 60 days. If it takes more than $2,000 to review the application, the state is allowed to bill the applicant up to an additional $1,000 without notification. If the state anticipates that a large or complex application will require more than $3,000 in total review time, the applicant is notified, and may either withdraw

the application or negotiate a revenue agreement, based on the expected review time. This revenue agreement is in letter form and identifies an estimated cost ceiling for the state's review. It should be noted that the state does not provide any funding for cleanups. It is the owner's responsibility to bear these costs. However, the state does offer incentives through two programs that may facilitate cleanups: (1) The Colorado Brownfields Revolving Loan Fund offers low-interest, flexible-term loans that can assist owners in funding cleanups, and (2) the state offers a "Tax Credit for Remediation of Environmentally Contaminated Land". Additional detail on these programs can be found at https://www.colorado.gov/pacific/cdphe/brownfields, or by contacting the Superfund/Brownfield Unit Leader at 303-692-3404.

Clean up standards and risk

The VCUP program requires applicants to meet existing state surface water and ground water standards. The compliance point is the property boundary. For sites where a groundwater plume originates on the property and migrates off the property in excess of state standards, the applicant is encouraged to perform remedial actions to reduce contaminant levels to below state standards at the property line. The applicant may treat the entire plume, or may perform remedial actions only within the property boundary, and rely on monitored natural attenuation for the remainder of the plume. Active remediation should be based on source characterization, contaminant concentrations, and contaminant fate and transport, and groundwater depth and flow characteristics. Remedial actions may include source removal, mass reduction, or other treatment alternatives.

If the entire plume is not treated, an evaluation of monitored natural attenuation must be made. This evaluation should include the geochemical reactions that influence contaminant concentrations, the time expected to meet state standards, and the expected land uses and exposure pathways that may exist during the attenuation period. The applicant must show that the attenuation timeframe is reasonable, given the expected land use scenarios. The use of institutional controls may be considered in this evaluation. An additional important consideration will be whether a ground water plume may adversely impact the quality of hydrologically connected surface water.

If the proposed clean-up is determined to be adequate, taking the above considerations into account, the CDPHE may approve the voluntary clean-up proposal, even though ground water standards may be exceeded at the property boundary at the conclusion of active clean-up.

If the applicant proposes "No Action" in situations where a groundwater plume migrates off the property in excess of state standards, the applicant must first obtain a site-specific standard, site-specific point of compliance, or site-specific variance from the CDPHE Water Quality Control Commission, as provided in the Commission's Basic Standards for Groundwater, Regulation #41.

In general, the State will consider EPA's Regional Screening Levels as appropriate soil cleanup goals, although other promulgated standards and criteria may be considered. If appropriate, clean-up standards or guidance may be modified, based on an assessment of risk at the site.

The Voluntary Cleanup Program encourages applicants to develop a conceptual site model and streamlined risk assessment methodologies to characterize risks associated with VCUP sites. Only for the most complex sites are applicants expected follow EPA Risk Assessment Guidelines (https://www.epa.gov/risk/risk-assessment-guidelines)

For most sites, a narrative description of the exposure pathways (or lack of completed pathways) is sufficient. For example, an acceptable level of risk could be demonstrated, if the land use (e.g., a paved parking lot) will prevent human health or environmental exposure to contaminated soil, as long as that soil is not a source of ground water contamination. In determining appropriate health-based standards for workers, Occupational

Exposure Limits for protecting the health of workers who are knowingly exposed to hazardous chemicals in their line of work should be used, rather than exposure through the general environmental pollution pathway.

State oversight in construction and certification

Under the Voluntary Cleanup Program, the state provides no construction oversight or certification. The applicant is responsible for providing a self-certification that the remediation has been completed in accordance with the approved plan. This self-certification must be submitted to the State by a qualified environmental professional (as described in 40 C.F.R. § 312.10(b)) within 45 days after completion of the clean-up plan. This certification is required in order to receive assurances that EPA will not take Superfund action (as specified in the aforementioned Memorandum of Agreement).

Brownfield tax credit

In 2014, the General Assembly passed Senate Bill 14-073 into law, which created a state income tax credit for cleaning up contaminated properties under the Voluntary Cleanup Program. A state tax credit of up to $525,000 on the first $1,500,000 of cleanup costs may be earned. The credit can be transferred to another entity or entities, subject to certain limitations, as specified in the Act. In order to receive this credit, the applicant must submit sufficient documentation to fully describe all environmental remediation costs. Copies of cancelled warrants demonstrating payment to contractors and purveyors must be submitted as part of this documentation Upon verifying cost documentation, CDPHE will issue a certification letter verifying both the project completion and the costs, which will entitle the applicant to claim the tax credit. The enabling statute for this tax credit is presented in Appendix F, and information regarding tax credit notification requirements is included in Appendix G.

State enforcement

There is no formal agreement that binds the parties under the Voluntary Cleanup Program, and the state has no enforcement authority under the Act. Assuming the site is eligible for the program, the statute does not require proposed cleanups to be completed. The applicant can “walk away” at any time, with the only consequence being that any approval received from the state would be void. However, if a cleanup had been started, the state can require the owner to properly manage any waste that had been generated from the incomplete cleanup. This authority would not be used to force completion of the cleanup. The owner/applicant would be responsible for closing up the site to protect public safety and ensuring that environmental problems were not exacerbated (i.e., leaving a dangerous hole that would collect surface runoff and contribute to ground water contamination).

Public participation

The Act has no formal requirements for public participation or review of applications. However, all files are public documents, available for public review. Also, the Department routinely contacts the local county, to determine if there is any knowledge or interest in the site, and will make a copy of the application available for local review, if requested.

In addition, CDPHE will appear at community meetings, if requested, to provide information to interested citizens. Information on applications is available to the public on the CDPHE web site at https://www.colorado.gov/pacific/cdphe/voluntary-cleanup.

In order to receive assurances that EPA will not take action under CERCLA (as per the Memorandum of Agreement), the applicant must provide public notice, within 30 days of the approval, that the clean-up plan or no action determination has been approved by the state. In some cases, where public interest in the property is high, CDPHE may require that the applicant provide additional public information. For large sites or sites where

public interest is likely due to publicity or proximity to Superfund sites, CDPHE may request that the applicant hold a public meeting to explain its cleanup plan.

STATE APPROVAL

The state provides an approval letter upon completion of the application review. The letter generally states that, based on the information provided in the application about the contamination and the proposed land use, if the plan is completed as proposed (either cleanup or no action), no further action will be necessary on the site. This letter provides the state's assurance that as long as the land use stays the same (as stated in the application), the state will not require any additional cleanup. There is no covenant not to sue in the letter. If the property is subsequently sold, the approval runs with the land, provided the land use stays the same. A sample letter is included in Appendix E.

In instances where a petition or clean-up plan is denied, the denial letter will include specific reasons for the denial.

If the applicant should choose to withdraw an eligible site, there is no authority that can compel any further action at the site. A withdrawn application does remain part of the public record.

For further information, please contact the CDPHE Superfund & Brownfields Unit Leader at (303) 692-3404.

Colorado Department of Public Health and Environment
Hazardous Material and Waste Management Division

Appendix **A**

Enabling Legislation CRS 25-16-301

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Part 3
Voluntary Clean-up and redevelopment act

25-16-301. Short title.
This part 3 shall be known and may be cited as the "Voluntary Clean-up and Redevelopment Act".

Source: L. 94: Entire part added, p. 1948, § 1, effective July 1.

Annotation

Law reviews. For article; "Brownfield Developments and Environmental Risk Assessments," see 25 Colo. Law. 53 (April 1996). For article; "Remediation of Brownfields Under the Colorado Voluntary Cleanup and Redevelopment Act" ; see 78 Den. U. L. Rev. I (2000).

25-16-302. Legislative declaration. (1) The general assembly hereby declares that the purpose of this part 3 is to provide for the protection of human health and the environment and to foster the transfer, redevelopment, and reuse of facilities and sites that have been previously contaminated with hazardous substances or petroleum products. The general assembly further declares that this program is intended to permit and encourage voluntary clean-ups of contaminated property by providing persons interested in redeveloping existing industrial sites with a method of determining what the clean-up responsibilities will be when they plan the reuse of existing sites. It is the further intent of the general assembly that this voluntary program operate in such a way as to:

(a) Eliminate impediments to the sale or redevelopment of previously contaminated property;
(b) Encourage and facilitate prompt clean-up activities; and
(c) Minimize administrative processes and costs.

Source: L. 94: Entire part added, p. 1948, § 1, effective July 1.

25-16-303. Voluntary clean-up and redevelopment program - general provisions fees - access to property during reviews. (1) The program established in this part 3 shall be voluntary and may be initiated by:

(a) The submission to the department of an application for approval of a voluntary clean-up plan pursuant to section 25-16-304 for properties where remediation may be necessary to protect human health and the environment in light of the current or proposed use of the property; or
(b) The submission to the department of a no action petition pursuant to section 25-16-307 for properties where remediation is complete or not necessary to protect human health and the environment in light of the current or proposed use of the property.

(2) No person, financial institution, or other entity financing a commercial real estate transaction shall require a purchaser to participate in the voluntary program contained in this part 3, and no entity of Colorado state government regulating any person, financial institution, or other entity financing a commercial real estate transaction shall require evidence of participation in this program to be a component of standard real estate loan documentation.

(3) (a) The program contained in this part 3 is voluntary and may only be initiated by the owner of the subject real property.

(b) The provisions of this part 3 shall not apply to the following:

(I)Property that is listed or proposed for listing on the national priorities list of superfund sites established under the federal act;

(II) Property that is the subject of corrective action under orders or agreements issued pursuant to the provisions of part 3 of article 15 of this title or the federal "Resource Conservation and Recovery Act of 1976", as amended;

(III) Property that is subject to an order issued by or an agreement with the water quality control division pursuant to part 6 of article 8 of this title;

(IV) A facility which has or should have a permit or interim status pursuant to part 3 of article 15 of this title for the treatment, storage, or disposal of hazardous waste; or

(V) Property that is subject to the provisions of part 2 of article 20.5 of title 8, C.R.S.

(4) (a) Each application for approval of a voluntary clean-up plan and each petition for a no action determination shall be accompanied by a filing fee determined by the department at a level sufficient to cover the direct and indirect costs of the department in processing applications for approval of voluntary clean-up plans and petitions for no action under this part 3, but such filing fee shall not exceed two thousand dollars.

(b) (I). The department shall establish and publish hourly rates for review charges performed by the department in connection with applications for approval of voluntary clean-up plans and petitions for no action under this part 3. Within thirty days after the department's approval or denial of a voluntary clean-up plan or no action petition, the department shall bill an applicant or petitioner for all direct and indirect charges of review of applications and petitions under this part 3 in accordance with the hourly rate structure established pursuant to this subparagraph (I). The department's charges shall be billed against the application fee paid pursuant to this subsection (4) in accordance with subparagraph (II) of this paragraph (b).

(II) (A) If the department bills charges in an amount less than the application fee, the department shall return any unused balance to the applicant or petitioner after the department's final determination in the matter has been made.

(B) If the department bills charges that exceed the application fee, the department may bill the applicant or petitioner for direct and indirect charges that the department incurs in excess of the application fee up to a maximum of an additional one thousand dollars.

(C) If the department determines that review of the application cannot be completed for three thousand dollars or less due to the size or complexity of the site, the department shall contact the applicant or petitioner prior to incurring additional charges. The applicant or petitioner shall then be given the opportunity to either negotiate an agreement containing an upper limit on the department's charges and complete the review, or withdraw the application and receive a refund of the unbilled balance of fees already paid to the department. Agreements negotiated pursuant to this sub-subparagraph (C) shall be in writing and shall be signed by authorized representatives of the parties.

(D) The department shall make its best efforts to determine whether the application review will exceed three thousand dollars within the first ten hours of review or, if the applicant or petitioner requests a pre-application conference, within ten business days after such conference.

(c) All moneys collected pursuant to this subsection (4) shall be transmitted to the state treasurer, who shall credit the same to the hazardous substance response fund, created in section 25-16-104.6(1). Moneys collected pursuant to this subsection (4) shall be subject to annual appropriation by the general assembly only to defray the direct and indirect costs of the department in processing voluntary clean- up plans and petitions for no action determination as specified in this part 3.

(5) During the time allocated for review of applications for voluntary clean-up plans and petitions for no, action determination under this part 3, the department shall, upon reasonable notice to the property owner, have access at all reasonable times to the subject real property.

Source: L. 94: Entire part added, p. 1949, § 1, effective July 1. L. 95: (3)(b)(V) amended, p. 420, § 9, effective July 1. L. 2003: (4)(b) amended, p. 823, § 1, effective August 6.

25-16-304. Voluntary clean-up plan.

(1) Any person who owns real property which has been contaminated with hazardous substances or petroleum products may submit an application for the approval of a voluntary clean-up plan to the department under the provisions of this section.

(2) A voluntary clean-up plan shall include:

(a) An environmental assessment of the real property which describes the contamination, if any on the property and the risk the contamination currently poses to public health and the environment;

(b) A proposal, if needed, to remediate any contamination or condition which has or could lead to a release which poses an unacceptable risk to human health or the environment, considering the present and any differing proposed future use of the property and a timetable for implementing the proposal and for monitoring the site after the proposed measures are completed;

(c) A description of applicable promulgated state standards establishing acceptable concentrations of constituents in soils, surface water, or groundwater and, for constituents present at the site for which such state standards do not exist, a description of proposed clean-up levels and any current risk to human health or the environment based upon the current or proposed use of the site.

Source: L. 94: Entire part added, p. 1950, § 1, effective July 1.

25-16-305. Remediation alternatives.

(1) Remediation alternatives shall be based on the actual risk to human health and the environment currently posed by contaminants on the real property, considering the following factors:

(a) The present or proposed uses of the site;

(b) The ability of the contaminants to move in a form and manner which would result in exposure to humans and the surrounding environment at levels which exceed applicable promulgated state standards or, in the absence of such standards, which represent an unacceptable risk to human health or the environment;

(c) The potential risks associated with proposed clean-up alternatives and the economic and technical feasibility and reliability of such alternatives.

Source: L. 94: Entire part added, p. 1951, § 1, effective July 1.

25-16-306. Approval of voluntary clean-up plan - time limits - contents of notice conditions under which approval is void - expiration of approval.

(1) (a) The department shall provide formal written notification that a voluntary clean-up plan has been approved or disapproved within no more than forty-five days after a request by a property owner, unless the property owner and the department agree to an extension of the review to a date certain. Such review shall be limited to a review of the materials submitted by the applicant and documents or information readily available to the department. If the department fails to act on an application within the time limits specified in this subsection (1), the voluntary clean-up plan shall be deemed approved. If the department has received eight applications for review of voluntary clean-up plans or no action petitions in a calendar month, the department may notify any additional applicants in that month that their plan or petition will be considered the following month, and the forty-five day period for department review shall begin on the first day of the month following receipt of the plan or petition.

(b) The department shall approve a voluntary clean-up plan if, based on the information submitted by the property owner, the department concludes that the plan will:

(I) Attain a degree of clean-up and control of hazardous substances or petroleum products, or both, that complies with all promulgated applicable state requirements, regulations, criteria, or standards;

(II) For constituents not governed by subparagraph (I) of this paragraph (a), reduce concentrations such that the property does not present an unacceptable risk to human health or the environment based upon the property's current use and any future uses proposed by the property owner.

(c) In the event that a voluntary clean-up plan is not approved by the department, the department shall promptly provide the property owner with a written statement of the reasons for such denial. If the department disapproves a voluntary clean-up plan based upon the applicant's failure to submit the information required by section 25-16-304, the department shall notify the applicant of the specific information omitted by the applicant.

(d) The approval of a voluntary clean-up plan by the department applies only to conditions on the property and state standards that exist as of the time of submission of the application.

(2) Written notification by the department that a voluntary clean-up plan is approved shall contain the basis for the determination and the following statement:

> "Based upon the information provided by [insert name(s) of property owner(s)] concerning property located at [insert address], it is the opinion of the Colorado Department of Public Health and Environment that upon completion of the voluntary clean-up plan no further action is required to assure that this property, when used for the purposes identified in the voluntary clean-up plan, is protective of existing and proposed uses and does not pose an unacceptable risk to human health or the environment at the site."

(3) (a) Failure of a property owner to materially comply with the voluntary clean-up plan approved by the department pursuant to this section shall render the approval void.

(b) Submission of materially misleading information by the applicant in the context of the voluntary clean-up plan shall render the department approval void.

(4) (a) If a voluntary clean-up plan is not initiated within twelve months and completed within twenty-four months after approval by the department, such approval shall lapse; except that the department may grant an extension of the time limit for completion of the voluntary clean-up plan.

(b) A property owner desiring to implement a voluntary clean-up plan after the time limits permitted in paragraph (a) of this subsection (4) shall submit a written petition for reapplication accompanied by written certification of a qualified environmental professional that the conditions on the subject real property are substantially similar to those that existed at ·the time of the original approval.

(c) Reapplications pursuant to paragraph (b) of this subsection (4) shall be subject to limited review by the department, which shall complete such review within thirty days of receipt of a petition for reapplication; except that any reapplication that involves real property, the condition of which has substantially changed since approval of the original voluntary clean-up plan, shall be treated as a new application and shall be subject to all the requirements of this part 3.

(5) (a) Within forty-five days after the completion of the voluntary, clean-up described in the voluntary clean-up plan approved by the department, the property owner shall provide to the department a certification from a qualified environmental professional that the plan has been fully implemented.

(b) If the owner is applying for the tax credit provided in section 39-22-526, C.R.S., the owner shall submit to the department the certification along with an application pursuant to section 25-16-303. The certification shall, in addition to certifying that the plan has been fully implemented, disclose the costs of implementation and include supporting documentation of those costs. The department shall then certify the accuracy of the costs and

issue the property owner a certificate stating that the clean-up has occurred and the costs of such clean-up. The property owner may submit this certificate to the department of revenue to claim a tax credit under section 39-22-526 (2), C.R.S.

Source: L. 94: Entire part added, p. 1951, § 1, effective July 1. L. 2000: (5) amended, 891, § 1, effective January 1, 2001.

25-16-307. No action determinations.

(1) A property owner may file with the department a written petition to request a no action determination pursuant to this section. The department shall provide formal written notification that a no action petition has been approved or disapproved within no more than forty-five days after a request by a property owner, unless the property owner and the department agree to an extension of the review to a date certain. Such review shall be limited to a review of the materials submitted by the applicant and documents or information readily available to the department. If the department fails to act on a petition within the time limits specified in this subsection (1), the no action petition shall be deemed approved. If the department has received eight applications for review of voluntary clean-up plans or no action petitions in a calendar month, the department may notify any additional applicants in that month that their plan or petition will be considered the following month, and the forty-five day period for department review shall begin on the first day of the month following receipt of the plan or petition.

(2) (a) The department shall issue a written determination approving a no action petition when:

(I) The environmental assessment described in section 25-16-308 performed by a qualified environmental professional indicates the existence of contamination which does not exceed applicable promulgated state standards or contamination which does not pose an unacceptable risk to human health and the environment; or

(II) The department finds that contamination or a release or threatened release of a hazardous substance or petroleum product originates from a source on adjacent or nearby real property if a person or entity responsible for such a source of contamination is or will be taking necessary action, if any, to address the contamination.

(III) The department shall provide formal written notification of a no action determination, which shall contain the basis for the determination and the following statement:

> "Based upon the information provided by [insert name(s) of property owner(s)] concerning property located at [insert address], it is the opinion of the Colorado department of public health and environment that no further action is required to assure that this property, when used for the purposes identified in the no action petition, is protective of existing and proposed uses and does not pose an unacceptable risk to human health or the environment at the site."

(c) The approval of a no action petition by the department applies only to conditions on the property and state standards that exist as of the time of submission of the petition.

(3) Submission of materially misleading information by the applicant in the context of a no action petition shall render the department approval void.

(4) In the event that a no action petition is not approved by the department, the department shall promptly provide the property owner with a written statement of the reasons for such denial. If the department disapproves a no action petition based upon the applicant's failure to submit required information, the department shall notify the applicant of the specific information omitted.

Source: L. 94: Entire part added, p. 1953 § 1, effective July 1.

25-16-308. Environmental assessment - requirements.

(1) The department may only accept environmental assessments under this part 3 that are prepared by a qualified environmental professional. A qualified environmental professional is a person with education, training, and experience in preparing environmental studies and assessments.

(2) The environmental assessment described in section 25-16-304 (2) (a) shall include the following information:

(a) The legal description of the site and a map identifying the location and size of the property;

(b) The physical characteristics of the site and areas contiguous to the site, including the location of any surface water bodies and ground water aquifers;

(c) The location of any wells located on the site or on areas within a one-half mile radius of the site and a description of the use of those wells;

(d) The current and proposed use of on-site groundwater;

(e) The operational history of the site and the current use of areas contiguous to the site;

(f) The present and proposed uses of the site;

(g) Information concerning the nature and extent of any contamination and releases of hazardous substances or petroleum products which have occurred at the site including any impacts on areas contiguous to the site;

(h) Any sampling results or other data which characterizes the soil, groundwater, or surface water on the site; and

(i) A description of the human and environmental exposure to contamination at the site based upon the property's current use and any future use proposed by the property owner.

Source: L. 94: Entire part added, p. 1954 § 1, effective July 1.

25-16-309. Coordination with other laws.

(1) Nothing in this part 3 shall absolve any person from obligations under any other law or regulation, including any requirement to obtain permits or approvals for work performed under a voluntary clean-up plan.

(2) If the United States environmental protection agency indicates that it is investigating a site which is the subject of an approved voluntary clean-up plan or no action petition, the department shall actively pursue a determination by the United States environmental protection agency that the property not be addressed under the federal act or, in the case of property being addressed through a voluntary clean-up plan, that no further federal action be taken with respect to the property at least until the voluntary clean-up plan is completely implemented.

Source: L. 94: Entire part added, p. 1955 § 1, effective July 1.

25-16-310. Enforceability of voluntary clean-up plans and no action determinations.

(1) Voluntary clean-up plans are not enforceable against a property owner; except that, if the department can demonstrate that a property owner who initiated a voluntary clean-up under an approved plan has failed to fully and properly implement that plan, the department may require further action if the action is authorized by other laws or regulations of this state.

(2)Information provided by a property owner to support a voluntary clean-up plan or no action petition shall not provide the department with an independent basis to seek penalties from the property owner pursuant to state environmental statutes or regulations. If, pursuant to other state statutes or regulations, the department initiates an enforcement action against the property owner subsequent to the submission of a voluntary clean-up plan or no action petition regarding the contamination addressed in the plan or petition, the voluntary disclosure of the information in the plan or petition shall be considered by the enforcing authority to reduce or eliminate any penalties assessed to the property owner.

Source: L. 94: Entire part added, p. 1955 § 1, effective July 1.

25-16-311. Repeal of part. (Repealed)

Source: L. 94: Entire part added, p. 1956; § 1, effective July 1. L. 99: Entire section repealed, p: 265, § 1, effective April 9.

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Appendix B

Memorandum of Agreement
Between US Environmental Protection Agency and the Colorado Department of Public Health and Environment

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VOLUNTARY CLEANUP AND REDEVELOPMENT PROGRAM

Memorandum of agreement between the Colorado Department of Public Health and Environment the US Environmental Protection Agency, Region VIII

I. Purpose

The purpose of this Memorandum of Agreement(MOA)is to define the roles and responsibilities of the Colorado Department of Public Health and Environment(CDPHE) and the United States Environmental Protection Agency Region VIII (EPA) (collectively, the Parties) with respect to activities conducted under the authority of the Voluntary Cleanup and Redevelopment Act.

II. Background

EPA and CDPHE believe that the proper reutilization of contaminated or potentially contaminated industrial and commercial (often referred to as "Brownfields" will provide a significant benefit to both the environment and the economy of the local communities. Proper reutilization of "brownfields" is also a key element of Colorado's Smart Growth concept. To the extent possible, EPA and CDPHE seek to facilitate the productive re-use of these properties by working with the private sector to eliminate impediments to financing, transfer, and redevelopment. Due to limited resources, the need to prioritize sites, and the need to expedite cleanup action, EPA and CDPHE seek to encourage participation in the Voluntary Cleanup and Redevelopment Program to protect human health and the environment while fostering the transfer, redevelopment, and reuse of facilities that have been previously contaminated with hazardous substances or petroleum products.

III. Responsibilities

1. CDPHE will implement Title 25-16-301, et seq. (known as the Voluntary Cleanup and Redevelopment Act and referred to herein as "the Act") to allow owners of contaminated properties to voluntarily propose cleanup actions or petition for no further action determinations for eligible sites. CDPHE and EPA agree that this Voluntary Cleanup Program (VCUP) will include the specific elements as described in Attachment A.

2. Once an application to clean up a site in accordance with the VCUP has been submitted to CDPHE, EPA will not plan and does not anticipate undertaking any federal action under the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. SS 9601, et seq. (CERCLA or Superfund), at such a site, unless: (1) the site is an "NPL Caliber" site or the site poses an imminent and substantial endangerment to public health, welfare or the environment and exceptional circumstances warrant EPA action; (2) CDPHE's approval of the cleanup plan becomes void; or (3) the applicant fails to complete or materially comply with the cleanup plan as approved by CDPHE.

3. In accordance with the VCUP Description contained in Attachment A, if requested by the applicant, CDPHE may provide written notice to the applicant of its determination that performance of the cleanup is complete and in compliance with the cleanup plan as approved or modified. Written notification of CDPHE'S certification of completion shall also be forwarded to EPA. EPA will then remove the site from its CERCLIS database if the site was previously identified in the CERCLIS database.

4. Failure to complete or materially comply with the cleanup plan, submission of materially misleading information, or the discovery of significant new information different than that submitted to CDPHE with the VCUP application, renders CDPHE'S approval of the cleanup plan and EPA's assurances void. Further, EPA reserves the right to take all appropriate response and enforcement actions under Superfund in the event a cleanup plan or no action determination is deemed "approved" as a result of a failure of CDPHE to review and approve or deny an application prior to the expiration of the 45 day time limit, as provided in Sections 25-16-306(l)(a) and 25-16-307(1) of the Act.

5. Nothing in this MOA shall be construed to abrogate EPA'S responsibility under Section 105 of CERCLA, 42 U.S. C. SS 9605(d), to perform a preliminary assessment when requested by a citizen petition.

6. EPA will assist and may provide technical support to CDPHE in further developing and expanding the use of VCUP. Similarly, CDPHE will assist and support efforts to promote and implement EPA'S Economic Redevelopment initiatives.

This MOA has been developed by mutual cooperation and consent of the Parties, and becomes effective upon execution of the signatures below. EPA and CDPHE will conduct an annual review of the VCUP and the terms of this MOA and determine if this MOA should remain in effect as is, be amended or be terminated. This MOA may be terminated unilaterally by either party with 30 days notice. Any amendment to this MOA must be made in writing and by mutual consent of the parties.

Patti Shwayder, Executive Director
Colorado Department of Public Health and Environment

Jack W. McGraw, Acting Regional Administrator
Environmental Protection Agency

VOLUNTARY CLEANUP AND REDEVELOPMENT PROGRAM

ATTACHMENT A

VOLUNTARY CLEANUP AND REDEVELOPMENT PROGRAM DESCRIPTION

Purpose

The State of Colorado's authority for the Voluntary Cleanup Program (VCUP) is derived from the Voluntary Cleanup and Redevelopment Act (C.R.S. 25-16-301, et seq.) passed in 1994. The purpose of the Act is to "[p]rovide for the protection of human health and the environment and to foster the transfer, redevelopment, and reuse of facilities that have been previously contaminated with hazardous substances or petroleum products." The Act is intended to permit and encourage voluntary cleanups by providing a method to determine cleanup responsibilities in planning reuse of a property. The VCUP is tasked to operate quickly and with a minimum of administrative processes and costs. Accordingly, no regulations have been promulgated to implement this Act.

Site Screening and Communication

After receiving an application under the VCUP, the State will conduct a site screening. Site screening in the VCUP is two-fold. First, sites are screened for eligibility. Section 25-16-303(3)(b) excludes: (I) sites listed or proposed for listing on the NPL; (II) sites under a RCRA corrective action order; (III) sites subject to an order or agreement issued by the Water Quality Control Division; (IV) sites that have or should have a RCRA permit or interim status for treatment, storage, or disposal of hazardous waste; and (V) sites regulated by the UST program. After an initial review of the site history, the lead reviewer discusses the site with each of the above State programs to determine whether the site is excluded under one of the listed criteria.

If the site qualifies for the VCUP, a second screening occurs to determine existing actions proposed by EPA and EPA's level of potential interest in the site. The purpose of this communication is to avoid duplication of effort between the two agencies. First, the State reviewer will determine whether the site is listed on CERCLIS. If the site is listed in EPA'S CERCLIS database, the State reviewer will contact appropriate EPA staff to discuss the site status and proposed EPA actions. Second, the State reviewer will determine whether the site is subject to an EPA CERCLA Administrative Order. If the site is subject to an EPA CERCLA Administrative Order, the State reviewer will review the application as required by C.R.S. 25-16-306, but EPA'S agreement to forbear from planning or undertaking any action under CERCLA as contained Section III, Paragraph 2 of the MOA is void.

1. CERCLIS Sites

If all or a portion of the site is on CERCLIS, the State will comply with the requirements of C.R.S. 25-16-309(2) and request that EPA suspend activities to allow the cleanup to proceed under the VCUP. Should EPA decide to proceed with its planned actions, the State may choose to deny the application, or may process the application and coordinate approval of the application with EPA.

For a CERCLIS site for which EPA has planned but will agree to suspend investigatory or response action activities in lieu of the owner's compliance with the Act and VCUP, CDPHE will keep EPA informed of the owner's progress toward completion of the remedial action. CDPHE will also notify EPA of the owner's completion or failure to complete the remedial action. In the event the owner implements the cleanup plan completely and to the satisfaction of CDPHE, EPA shall remove the site from its CERCLIS database.

2. Non-CERCLIS Sites

If the site is not on CERCLIS, the State will evaluate the information submitted by the applicant to determine whether the site might be considered "NPL Caliber."

EPA has generally defined "NPL Caliber" to mean sites where significant human exposure to hazardous substances has been documented or where sensitive environments have become contaminated. Examples of what EPA considers "NPL Caliber" site characteristics are sources of contamination that may have contributed to the following:

- Public drinking water supplies or private wells are contaminated with a hazardous substance above the concentration listed in the Risk-Based Concentration Table for tap water, January 1995;

- Soils on school, day care center, or residential properties are contaminated by a hazardous substance significantly above background levels and are above concentrations for soil ingestion (residential) listed in the Risk-Based Concentration Table, January 1995*;

- Soils on school, day care center, or residential properties are contaminated by lead concentrations significantly above background levels and the lead soil concentration is above 400 ppm;

- A hazardous substance is detected in an off-site-air release in a populated area and the release is above the concentration listed in the Risk-Based Concentration Table for ambient air;

- A highly toxic hazardous substance known to persist and bioaccumulate in the environment (e.g., PCBS, mercury, dioxin, PAHs), is discharged into surface waters;

- A highly toxic hazardous substance known to be mobile in the subsurface (e.g., vinyl chloride, trichloroethylene, acetone, phenol, cadmium, mercury), is discharged to significant useable aquifers.

- Sensitive environments are contaminated with a hazardous substance significantly above background levels and water quality standards where appropriate and;

* If this document is modified, use the most recent version.

Even though the application for VCUP may not address off-site problems, if releases from the applicant's property has contributed to off-site exposure to hazardous substances, EPA considers the sources of hazardous substance contamination as well as the areas where contamination has migrated to be an "NPL Caliber" site.

If CDPHE determines a site to be of "NPL Caliber," CDPHE will notify the applicant of its determination as early in the 45-day review period as possible. CDPHE and the applicant will then jointly decide whether to inform EPA of CDPHE'S determination and to request EPA'S review of and concurrence on the cleanup plan and application. If CDPHE and the applicant jointly decide to seek EPA'S review and approval, EPA will provide its comments on the application as quickly as possible. If CDPHE and the applicant jointly decide not to solicit EPA'S review and approval of the application, CDPHE may either approve or deny the application. In the event CDPHE approves the application for the "NPL Caliber" site without EPA'S review and concurrence, the applicant may still implement the cleanup plan, but EPA'S forbearance not to plan or undertake any action under CERCLA as contained in Section III, Paragraph 2 of the MOA is void.

Resources and Capabilities

CDPHE utilizes trained environmental professionals to review voluntary cleanup applications. The specialty of these individuals may vary, but includes: geology, hydrology, engineering, risk analysis, and chemistry. These environmental professionals have applied this expertise to UST remediation, RCRA corrective action, solid waste facility permitting, and Superfund remedial action. On an as-needed basis, the appropriate expertise can be utilized to assist the State's lead reviewer. The maximum number of applications which can be reviewed per month is set by statute, in order to insure that authorized staff have sufficient time to review applications in sufficient detail.

Standards and Risk Analysis

CDPHE will implement a risk-based cleanup approach based on the proposed land use and will utilize applicable standards and remediation objectives in cleanup decisions. CDPHE will take under consideration site-specific cleanup standards if they are based on risk and utilize appropriate land use assumptions. Although a site-specific risk assessment prepared using EPA'S RAGS document can be submitted by the applicant at his/her option, the 45 day time period available for review of an application containing such a risk assessment may be insufficient and need to be extended.

Therefore, CDPHE will use relevant standards derived from applicable statutes, regulations, guidance, and the application of the risk-derived numbers developed by EPA, CDPHE or other governmental entities. In all cases, an analysis of the risk entails an evaluation of targets and receptors and the potential for pathways of exposure to be realized. In all application evaluations, the CDPHE reviewers will examine the proposed cleanup standards, the proposed remedial method and the proposed land use in concert to ensure that protection of health and the environment is achieved by the implementation of the cleanup plan.

Public Participation

The Act has no requirements for public participation or review of applications. However, all files are public documents and available for public review upon request. Also, CDPHE routinely contacts the local health department to see if there is any knowledge of or interest in the site, and will make a copy of the application available for local review if requested. Local governments may have additional public participation requirements related to the redevelopment of property (i.e., zoning hearings) which are applicable to these sites.

Notwithstanding any local government public participation procedures or requirements for redevelopment of these sites, in order to obtain EPA'S forbearance not to plan or undertake any action under CERCLA as contained Section III, Paragraph 2 of the MOA, within 30 days of approval of its VCUP application, the applicant will provide adequate public notice of its cleanup plan. "Adequate public notice" will be determined on a site-specific basis and should include publication of the availability of the cleanup plan in a local newspaper or posting of any public notice plan required by building permit or zoning ordinance procedures. For large sites or sites where public interest is likely due to publicity or proximity to Superfund sites, CDPHE may request that the applicant hold a public meeting to explain its cleanup plan.

Appendix C

Voluntary Clean-up Program application guidance document and checklist

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Introduction

The Voluntary Cleanup and Redevelopment Act (HB 94-1299) became effective July 1, 1994. The program administered under this Act is intended to encourage voluntary cleanups of previously contaminated properties by providing a framework for determining site-specific clean-up responsibilities and a streamlined review and approval process that can meet the short time frames often required by property transactions.

The purpose of this guidance document is to assist owners of eligible sites in preparing the necessary information so that the Colorado Department of Public Health and Environment can meet the short time frames this Act requires. To date, over one-half of all applications have required time extensions due to the need for additional information. This document contains a summary of the necessary information that should be gathered to produce a complete application under the Voluntary Cleanup Pro- gram. The guidance contains a narrative description of the information requirements and an application checklist (Appendix D) that should be submitted with the application.

This guidance document is consistent with HB 94-1299 and does not supersede any part of the statute. The preparation of this updated guidance was the result of coordination with the Hazardous Materials and Waste Management Division (HMWMD) personnel and program stakeholders. The guidance document may also be useful for submitting information regarding cleanups under the HMWMD Solid Waste and Hazardous Waste Compliance Programs, although all specifics may not be the same in these programs.

Questions regarding this document may be answered by calling the Superfund & Brownfields Unit Leader at 303-692-3404.

Program inclusion

The following section is designed to determine whether the applicant meets the criteria for eligibility under the Act. An answer “no” to question 1 or “yes” to any of questions 2-6 will result in a determination that the application is not eligible for the Voluntary Clean-up Program. Any applicant that is ineligible may still wish to perform cleanup under the regulatory program that has authority over that site. The submission of misleading information will render any approval given by the Department void.

1. Is the applicant the owner, or the owner’s designated representative, of the property?
2. Is the property listed or proposed for listing on the National Priorities List of Superfund sites established under the federal act (CERCLA)?
3. Is the property the subject of corrective action under orders or agreements issued pursuant to the provisions of Part 3 of Article 15 of this Title or the federal “Resource Conservation and Recovery Act of 1976,” as amended?
4. Is the property subject to an order issued by or an agreement (including permits) with the Water Quality Control Division pursuant to Part 6 of Article 8 of this Title? If yes, please list order or permit number.
5. Is the property a facility that has or should have a permit or interim status pursuant to part 3 of Article 15 of this Title (RCRA Subtitle C) for treatment, storage or disposal of hazardous waste?

NOTE: Properties that do not have a permit or interim status, but at which hazardous waste (as defined in the Colorado Hazardous Waste Act and implementing regulations) was treated, stored or disposed of any time after 1980, are considered by the Department to have required a permit or interim status.

6. Is the property subject to the provisions of Colorado Revised Statutes, Part 5, Article 20 of Title 8 (Underground Storage Tank – State Oil Inspector)?

Site history

The first major component of the application is a thorough investigation of the site history. The Department strongly considers the correlation between historical uses and characterization efforts in re- viewing the application. We believe that this historical knowledge is needed in order to identify all potential contaminant sources. An evaluation of past land uses and waste-handling practices should be conducted at least 50 years into the historical record. It may be appropriate to review facility records going further back in cases where wastes of a more persistent nature (e.g., metals, polyaromatic hydro- carbons) were handled on site. If records do not go back that far, it should be stated as such.

Submissions of any prior environmental assessments conducted by qualified environmental professionals performed on the site are critical inclusions. These assessments should include the following: operational history of the property, description of all businesses/activities on property, history of re- leases of petroleum products or hazardous substances on the property, history of management activities of hazardous substances at the property, notifications to county emergency response personnel pursuant to Emergency Planning and Community Right-to-Know statutes, notifications made to state and/or federal agencies as reporting of spills/accidental releases, list of all permits obtained from state and federal agencies related to activities at the property and brief descriptions of current land uses, zoning and zoning restrictions of all areas contiguous to the property.

Site characterization

The second major component of the application is a description of the site characterization efforts and a presentation and discussion of the data collected. It is important to tie your site characterization to the historical information you have gathered to insure you were looking for the right contaminants in the right places. The intent of a site assessment is to define the full area extent of contamination in all environmental media. In a case where the contamination is derived exclusively from an upgradient, off-site source, determination of the full extent of that contamination is not warranted. Impact from an upgradient source does not negate the need for investigating potential sources on the applicant's site or documenting that the applicant's site could not serve as a source of contamination. (Note: it is possible to get a letter absolving you of liability for cleaning up an upgradient source with- out characterizing your site; you just can't get a clean bill of health for your site without it.) In any case where soil contamination has the potential to contaminate ground or surface water, these media should be assessed. A qualified environmental professional should prepare site assessments. A qualified environmental professional is a person possessing a formal education in a suitable technical field and a minimum of five years of experience in the preparation of environmental studies and assessments.

A. General sampling & analytical methods

All sources of hazardous substances or petroleum products that have the potential to impact health or the environment must be addressed. The sample plan should utilize the knowledge gained from the site historical search in order to identify potential sources. A narrative should explain the reasoning behind each sample location, as well as any justification for eliminating assessment of any source areas. If adequate historical documentation is lacking, then random sampling locations may be appropriate, in addition to an evaluation of conditions at the upgradient and downgradient property boundaries. In addition to any summary tables, borehole logs, field screening results and lab sheets should be included as attachments.

In some cases the Department has preferred analytical methods. In order to avoid disagreements during the review of the application, it is suggested that, where appropriate, these preferred methods are used. Guidance for selection of the appropriate analytical methods is provided in Appendix D of this document.

Since approval of the Application applies only to conditions on the property at the time of submission of the application, recent data is required. Ground water data that is older than one year at the time of receipt of the application normally will not be considered as indicative of current conditions. This does not prevent the applicant from making a case as to why this data should be considered as indicative of current conditions. Additionally, data that is older than one year should be submitted if it is coupled with more recent data in order to indicate conditions with the passage of time. Exceptions may be made for soil data or in some cases where the applicant only desires absolution from the responsibility of dealing with contamination from an upgradient source, as in a contaminated aquifer de- termination.

1. Soil sampling locations

When it is appropriate to demonstrate background levels in soil, a minimum of three samples should be collected to account for natural constituent occurrences and inherent variability.
Sample locations for background should be in areas that have not been impacted by the release of concern or any on-site activities. In all cases, an explanation of the sampling method employed is useful for those reviewing the application.

One should sample for contaminants that tend to group heterogeneously in the subsurface in the following manner: in fines and silts, sample the interfaces with larger grains; in clays, sample the sand lenses; in medium sands or larger grains, sample the sidewalls near the excavation floor. Lithologies containing precipitates or excess organic carbon should be sampled. To characterize a site where contaminants have been deposited in a homogeneous manner, such as air deposition, one should use a simple random sampling method to collect a suitable number of samples.

To characterize a site with numerous discrete sources, such as mine waste piles, submission of a one or more composite samples from each pile would be appropriate.

2. Water Sampling

The wells installed should be capable of defining the ground water gradient, particularly the direction of flow to verify that water quality downgradient of any sources is being monitored. The wells should also have a screened interval appropriate for the contaminant. Use of pre- existing wells and/or existing data may be appropriate if it adds to the overall understanding of the site. If ground water is present in an excavation, or it is anticipated to be in close vertical proximity to the bottom of an excavation, it should be sampled and analyzed appropriately

3. Indoor Air

Indoor air levels should be evaluated when there is a potential for impact to structures. An evaluation of the hydrogeology, contaminant volatility and magnitude should factor into the decision for sampling indoor air. The HMWMD web site contains a detailed discussion on sampling analytical methods for the indoor air pathway.

B. Attachments

Multiple maps, drawn to scale, are necessary for the reviewer to adequately place the site within its surroundings and also detail site-specific conditions and environmental concerns. One map should show the site's location within the city or county. A second map would detail the natural and man- made concerns (e.g., drainage ditches, schools, surface waters) as well as potential additional sources in close proximity to the site. A third map would indicate site-specific conditions (e.g., ground water flow direction, sampling locations, utilities, structures, etc.).

The data should be summarized in the narrative of the report, and raw data such as boring logs and well construction diagrams must be provided as an addendum to the report. Boring logs and well construction diagrams should include: blow counts, weather conditions at the time of drilling, field screening readings, lithology, screened interval, drilling date and driller's name, sampling intervals, ground water level (initially and after stabilization) and all other pertinent information. When the ground water has been assessed, a potentiometric map should be prepared that details the direction of ground water flow. Pre-existing offsite wells may be used in calculating ground water flow direction, if necessary.

Materials Safety Data Sheets (MSDS) would be an appropriate inclusion relative to the contaminant of concern. A history of management activities with regard to handling of hazardous substances at the property would document the possible presence of sources at the site.

For complex sites and those sites where timing is critical, the Department recommends using the checklist/application form in Appendix C to insure that the application is complete. Submission of all the information contained on the checklist is not always necessary; the applicant should determine which submittals apply to the site in question. Submission of the checklist is not a requirement of the application. The checklist also compares the information normally contained in Phase I & II Environ- mental Assessments to what the Voluntary Clean-up Program may need. If a Phase I or Phase II assessment has been performed on your property, this comparison should help you determine what additional information (if any) is required for the voluntary cleanup application.

The Voluntary Cleanup Application should evaluate all Recognized Environmental Conditions, as de- fined by the American Society of Testing and Materials. This evaluation would consist of either sampling data or an explanation of the risk posed by the Recognized Environmental Condition.

C. Site Visits

In most instances, the applicant should plan on a site visit by the Colorado Department of Public Health and Environment project manager. Site visits are intended to assist in application review. Every effort should be made on the part of the applicant to preserve the site in its operating state or lo- cate a person knowledgeable about the site operations and arrange for them to attend the site visit.

Preparation of remediation plans or no action determinations

The third major component of the application is a plan for addressing any contamination found, whether it is presentation of a Voluntary Clean-up Plan or a request for a No Action Determination. During the course of implementing remediation plans, be aware that the Act does not absolve applicants of their obligations for meeting all other applicable regulations (e.g., proper handling and disposal of wastes generated, acquisition of permits).

The Voluntary Cleanup Program has determined that any action proposed at a site after our review will categorize the petition as a Voluntary Cleanup Plan. This is extended to categories of petitions such as ground water monitoring plans or contaminated material handling plans.

A. Clean-up levels

Clean-up levels may be based either on promulgated state standards or utilizing a risk-based approach. In general, your justification for either the clean-up plan or the request for no action must show that you either meet the promulgated standard or that the risk is acceptable, given the proposed land use.

If the site has ground water contamination and the proposal is to demonstrate that the current contamination does not pose a risk, or that contaminant source removal is an adequate option, then a monitoring plan that demonstrates one or both of the following should be included.

1. Exceedance of a given level (likely the Colorado Basic Ground Water Standards) at a Point of Compliance (POC) will not occur; and/or

2. The plume is contained within certain bounds and in-situ degradation processes will result in a decrease to a pre-determined level within the time frame of the monitoring program.

A suitable ground water monitoring program might include a description of the upgradient sampling point, the downgradient POC, the frequency and duration of the monitoring plan, the proposed laboratory analyses, as well as conditions under which the program might be terminated. A POC (as defined in 5 CCR 1002-8) is a monitoring well or system of wells beyond the downgradient extent of the contamination or at the property boundary (depending on site specifics), which is capable of monitoring the migration or potential migration of contaminants from the site. A POC should be selected with care as any exceedance of state ground water standards here may negate the applicant’s assessment of risk as presented in the application and potentially result in a negation of the state’s certification.

B. Standards

State standards exist for ground water and surface water quality, but not for soils. For soils, the Division uses the direct exposure levels for residential and industrial exposure scenarios listed in the EPA Regional Screening Levels (RSL) table. The RSL's are based on human health risk from the combined exposure of direct soil ingestion, dermal contact with soil and inhalation of vapors or particulates associated with soil. The Division also uses the groundwater protection level and leachate reference concentration columns in the Groundwater Protection Values (GPV) soil cleanup table. Decisions on whether further evaluation or remediation is needed may be based on the mobility of constituents and their potential to reach and degrade groundwater quality. The soil remediation objective applied to a site should be the lower concentration from either the direct exposure level or the groundwater protection level for each constituent, unless the analytical method detection limit is higher, in which case the method detection limit may be used as the soil remediation objective. The implementing party also has the option of conducting a detailed risk assessment that considers site information and exposure assumptions to calculate safe, protective soil cleanup goals unique to that site. Links to the RSL table and the Division's groundwater protection levels may be found here: https://www.colorado.gov/pacific/cdphe/approach-soil-screening-values

C. Risk-Based Assessment

A site-specific risk assessment prepared using standard Environmental Protection Agency policy or a calculation of appropriate clean-up levels, using the Department Hazardous Materials and Waste Management Division's "Interim Final Policy and Guidance on Risk Assessment for Corrective Action at RCRA Facilities" (November 16, 1993) is an option for any applicant. Site-specific risk assessments entail substantial resources on the part of the applicant and the Department. This approach may be necessary if the applicant's proposed clean-up levels deviate from the established standards, if the site is complex or if there are receptors (completed pathways), and the applicant is proposing less than complete removal of the contamination.

However, in many cases, a less rigorous approach to risk assessment is adequate. Such an approach would include a narrative description presenting a summary of all the site-specific information and contaminant levels, along with a determination regarding the likelihood of impacting targets or completing exposure pathways. Factors to consider are detailed below in this section.

1. Ground Water & Surface Water Usage – A water well search listing the locations of any wells located on the site or in areas within a one-half mile radius of the site and a description of the use of those wells should always be provided. An explanation is needed for the current and proposed use of on-site ground water. A similar summary of local usage of surface water should be prepared. In many cases, a listing of wells from the State Engineer's Records may not fully document ground water usage locally. If the contamination exists in an older section of an urban area, there may exist unregistered wells warranting a door-to-door survey to assess exposure.

2. Vapor Migration - If the contaminant is of a volatile and/or flammable nature, the application should indicate how the proposed land use would not present a hazardous situation or promote the migration of already existing contamination. Examples of exposure might be construction of a building basement where a volatile contaminant exists in close vertical proximity and may infiltrate the foundation.

3. Geology & Hydrogeology – An evaluation of the ability of the site's geology and hydrogeology to immobilize contaminants or minimize migration may be warranted to determine the ex- tent of the overall clean-up effort. Factors to consider might be: grain size, fractures, carbon content, depth to ground water, transmissivity, areal extent of the aquifer and any other items that may limit development of the aquifer as a drinking water source. If actions of the applicant might promote migration of existing

contamination along preferred pathways (such as newly-installed utilities) measures to prevent this occurrence should be mentioned in the overall evaluation of risk.

4. Ground Water Monitoring – A proposal to monitor the ground water might be utilized as a means to ensure that the proposed actions do not present an unacceptable risk. The intent of any ground water monitoring program, where the site is the source of the contamination, should be to verify that the plume has stabilized and will diminish with time or that the current state does not pose a risk to human health and the environment. Additional discussion of this point is provided in another section of this document under "Site Characterization."

5. Other Exposure Pathways – Assessment of other exposure pathways may be appropriate on a site-specific basis. Evaluation of the pathway should take into account the proposed land use and the ability for the contaminant to impact targets in excess of levels considered protective of health and the environment.

6. Proposed Land Use – Declaration of a proposed land use is necessary in all applications, as the applicant's evaluation of the risk is contingent upon this parameter, as is the Department's approval. In most cases a site's zoning designation will suffice, but additional specificity may be needed. For example, a situation where the site is proposed as industrial may not suffice if the working conditions are such that worker populations may be exposed to unacceptable levels. In this case the applicant might provide specifics as to any controls that have been in- stalled for worker protection. In some cases, (e.g., residential construction) the Department may need additional assurances that future owners of the site will be protected from any contamination remaining on the site, especially if there is a potential that future residents may disturb this contamination.

   Submission of the architect's conceptual plans may be appropriate to state the proposed land use. These plans will be evaluated to get a general idea of the protectiveness of the final site design. Approval can be contingent on the applicant building out the site "substantially similar" to the plan.

   It may be appropriate to leave the contamination in place, if the proposed land use is such that the extant contamination will not present a potential threat to human health or the environment. It is necessary for the applicant to evaluate the risk of leaving any contamination in place as this action relates to the proposed land use. Breaking completed pathways (i.e., capping the contamination) is one action that may warrant leaving contamination in place. The reviewer will use information presented on (potential or completed) pathways to determine if the pro- posed action or clean-up levels are adequate to ensure that the site will not pose a threat to human health or the environment.

D. Remediation Plans

The remediation plan should demonstrate how state standards or appropriate risk reduction would be achieved. It should include clean-up techniques, clean-up levels, verification sampling, material handling plans and any other information that would lead the state to accept that the remedy is protective of human health and the environment. The remediation plan should be described in sufficient detail to evaluate whether or not the applicant will be capable of remediating all contamination identified at the property within 24 months. In cases where technical constraints prevent complete remediation of ground water contamination in less than 24 months, the Colorado Department of Public Health and Environment will consider that statutory obligations have been met if the remediation system is constructed and operating within two years of plan approval. Attainment of proposed standards throughout the site in ground water need not be accomplished within the specified two years, though no further degradation of this medium should occur within the clean-up timeframe. On a site-

specific basis, timeframes for completion of the remediation can be extended.

Provision of a map indicating areas to be remediated, the location of confirmatory samples, locations of monitoring wells and areas where contamination may not be remediated is necessary. At sites where capping is the remediation choice, the map should show areas of capped and exposed soil.

A contingency plan for dealing with unexpected types of contamination may be warranted when intrusive activities are planned. Included within this contingency plan would be a provision for notification of the Department should unexpected contamination be encountered. If in the course of remediation the applicant encounters conditions different from those presented in the remediation plan (e.g., additional sources or substantially greater quantities of contamination), the applicant should contact the Department, and all efforts will be made to address any needed modifications in a timely manner. If conditions are found to be substantially different and the applicant is unwilling to perform remediation, the approval of the remediation plan would need to be amended, or it would become void.

If Operation and Maintenance is needed, a plan should be included that describes how the system will be operated to ensure that it functions as designed without interruptions. The plan should also include all sampling and analytical methods to be utilized, as well as a description of the monitoring plan implemented to verify attainment of appropriate standards or risk levels.

E. No Action Determinations When the Site is the Source

The site assessment should include a full site characterization and a determination of the potential to impact targets. For example, if volatile soil contamination is present, consider what measures should be instituted such that the contamination will not present a hazard to future users of the property. If the contamination has migrated off site, then consider what potential there might be for impact to offsite wells, utility corridors, or other targets. Assessment activities should determine if future activities might promote movement of a contaminant plume or pose threats to future users of the site, others downgradient, and surface and ground water quality in the future. Ultimately, the plan must show that no action is necessary to protect public health and the environment, given the proposed land use. An applicant cannot receive a No Action Determination if ground water contamination originating on their property exceeds state ground water standards at the property boundary. In this case, in accordance with state water quality rules and regulations, the applicant may petition the state Water Quality Control Commission for a variance from the standard, a change in the point of compliance, or a change in ground water classification.

F. No Action Determination When the Site is Not the Contaminant Source

The applicants must demonstrate that they are being impacted by an off-site source and must fully characterize their property to insure that there are no additional contaminant sources. This is necessary because the statutory language included in the state's approval letter says that the site in question does not pose a risk. Without a site characterization, the state cannot make that conclusion. In the case of ground water contamination, the assessment should determine ground water flow direction and document a contaminant concentration gradient. If possible, document usage of the contaminant found on the site in a near upgradient location. Include ground water samples as well as soil samples taken from the same or multiple borings, which verifies that the contaminant has been transported via the ground water and that the on-site soil is not a source.

A chronology of the historical activities that have occurred on the site is useful. Sampling may not be necessary if the site history shows no potential for impact. Expansion of the search to surrounding areas to locate potential past or present sources is also useful. An assessment of the likelihood of a change in ground water flow direction

should be made. In addition, assessment activities should con- sider how the proposed use of the site may promote movement of the plume or cause a threat to future users of the site or others in downgradient locations.

Specifically, the applicant should demonstrate that the proposed land use is protective considering potential indoor air issues. An evaluation of the geology, building construction, depth to ground water, and contaminant levels should factor into the risk evaluation. Installation of foundation venting systems coupled with monitoring (in some cases) of the indoor air is often necessary when volatile contaminants are entering the site from upgradient.

An assessment geared toward demonstrating only that the applicant's site has been impacted by an off- site source is not enough to warrant a No Action Determination for the site. However, under this circumstance, we can write a letter that absolves the applicant from clean-up liability related to the up- gradient source. The assessment would be more limited, requiring only a demonstration that the applicant's site is within the current hydrologic bounds of the other's contamination.

Preparation of completion reports

A. General

The emphasis in preparing completion reports is highly dependent on the type of contamination present at the site and the various media that have been remediated. The guidance provided below is grouped according to the type of remediation that has occurred at the site. In all cases, the framework of the completion report (e.g., location and number of confirmatory samples, proposed monitoring program, etc.) should be presented in the application and submitted for approval by the Department. Any deviations from the original plan should be mentioned as well as any conditions encountered that were different from the original understanding of the site.

B. Soil Contamination: Remediation by Excavation Only

One confirmation sample per 500 ft2 as measured at the base of the excavation OR two confirmatory samples, whichever method results in the collection of the most samples. In addition, one composite sample from each wall of the excavation is necessary. In excavations of an irregular shape, one composite sample for every 100 linear feet of wall would suffice. For larger excavations (greater than 5000 ft2) preparation of a grid for randomization of sampling may be appropriate. If contamination is to be left in place, an additional sample should be collected from the area of the highest contamination, as verified visually or with a field-screening instrument.

Compositing of samples is not recommended for volatile compounds; discrete samples should be collected instead. Explanation of the sampling method should be provided in the narrative as well as any modifications to the preceding used to better characterize the remedial efforts. Depth of samples collected should always be noted. Waste disposal manifests are appropriate inclusions.

C. In-Situ Soil Remediation

In order to determine if the soil remediation has met the proposed remedial goals, it is recommended the applicant install a minimum of two completion borings. For sites with larger source areas, one boring per 10,000 ft2 of former plume area should suffice to determine the effectiveness of the remedial efforts. In all cases, one boring should have been drilled in the area previously identified as possessing the highest levels of

contamination. Completion of the borings should employ a field-screening device (when appropriate), and the boring should be logged. The soil sample submitted for laboratory analysis (from each boring) would be that sample with the highest field screening reading or if the field screening is non-detect, then submission of the soil sample located at the ground water interface is appropriate.

D. Ground Water Remediation

Monitoring should continue after active remediation has ceased such that two questions can be ad- dressed: 1) has the ground water that was most severely impacted by the source had a chance to flow past the POC during the monitoring period? 2) If there is contamination remaining, is it mobile at levels that may present a risk in the future?

In order to determine the length of the monitoring period, calculate the velocity of the ground water. For example, if the POC is located 100 feet from the source area and ground water flows at 50 feet/yr, then monitoring should continue for a minimum of two years. Other factors to take into consideration when deciding on a frequency and length of monitoring are as follows: aquifer and contaminant characteristics such as gradient, partition coefficients, original contaminant levels and all other pertinent information. At each regular monitoring event, a map showing ground water flow direction, depth to ground water and sampling locations should be prepared. Tabular presentation of data, grouped by individual monitoring wells, is encouraged. The completion report should verify that the specific goals proposed in the approved voluntary cleanup application have been met.

Voluntary cleanup and redevelopment act checklist and information comparison table

This table provides a checklist of information that may be included in a Voluntary Cleanup Pro- gram application. Although not all information requirements apply to all sites, the applicant should review this list carefully and include in the application any information that is relevant to the property in question. The table should be submitted in the application, with the page numbers in the application where this information can be found inserted into the last column. This is not an application requirement, but it does greatly assist the reviewer.

This table may also be used to compare the information normally contained in Phase I and Phase II Environmental Assessments, with the requirements of the Voluntary Cleanup Program application. Since these assessments are commonly performed, the table will assist owners in determining any additional information that may be needed, if you have already performed a Phase I or Phase II assessment.

DIRECTIONS FOR COMPARISON TABLE INTERPRETATION

The table that follows is organized like the one below.

P I	P II	VC	I. General Information	Page

The first three columns provide the comparison between the information requirements of Phase I (PI) and Phase II (P II) Environmental Audits and the Voluntary Cleanup Program application (VC). In each column you will either see a blank space, a zero (0), a plus sign (+) or a minus sign (-). These can be interpreted as follows:

\+ means requirements are more detailed than other documents

\- means requirements are less detailed than other documents

0 means requirements are similar to other documents

a blank means that the requirement does not exist for that document

For example, if you saw a (+) in the VC column, it means that there are additional information requirements for the Voluntary Cleanup Program application in comparison to the audit re- ports for that item. If there was a (0) in the VC column, then the information contained in the Phase I or Phase II audit is adequate for the Voluntary Cleanup Program application.

The fourth column provides the checklist of information items required in the Voluntary Cleanup Program application.

The fifth column provides a place for you to insert the page number from the Voluntary Cleanup Program application that pertains to this informational item. If the applicant fills this portion out and returns the table with the application, it greatly assists the reviewer in finding information within the application.

Phase I, ASTM phase II comparison

P I	P II	VC	I. GENERAL INFORMATION	Page
0	0	0	Name and address of owner	
0	0	0	Contact person and phone number	
0	0	0	Location of property	
		+	Parcel I.D. or Legal Description	
		+	Geographic Coordinates of property (in decimal degrees)	
-	+	+	Type and source of contamination	
		+	Voluntary Clean-up (VC) or No Action Determination (NAD)	
0		0	Current Land Use	
		+	Proposed Land Use. Proposed future land use is not covered in a Phase I or II assessment. A voluntary cleanup approval is contingent upon this item.	

P I	P II	VC	II. PROGRAM INCLUSION	Page
-		+	Is the applicant the owner of the property for the submitted VC or NAD? In a Phase I assessment, the owner is not always the party preparing the assessment. The Voluntary Cleanup Program requires owner/designated representative to complete the submittal.	
-		+	Is the property submitted for the VC or NAD the subject of corrective action under orders or agreements issued pursuant to provisions of Part 3 of Article 15 of this Title or the federal RCRA 1976 as amended? Although Phase I assessments review state records for RCRA corrective actions, the Voluntary Cleanup Program requires details of a corrective action for an eligibility de- termination.	
-		+	Is the property submitted for the VC or NAD subject to an order issued by or an agreement with the Water Quality Control Division pursuant to Part 6 of Article 8 of this Title? Although Phase I assessments review state records, detail is not discussed. If Water Quality has issued a permit, the applicant is ineligible.	
-		+	Is the property submitted for the VC or NAD a facility that has or should have a permit or interim status pursuant to Part 3 of Article 15 of this Title for treatment, storage or disposal of hazardous waste? Although Phase I assessments review state records, detail is not discussed. For the Voluntary Cleanup Program, details of permits or interim status are necessary for an eligibility determination. Based on the site specifics of the permitted facility, the applicant may qualify for the program.	
-		+	Is the property submitted for the VC or NAD subject to the provisions of Part 5 of Article 20 of Title 8 (Underground Storage Tanks) CRS or of Article 18 of this Title (RCRA)? Although Phase I assessments review state records, detail is not discussed. For the Voluntary Cleanup Program details of Under- ground Storage Tank or RCRA requirements are necessary to make an evaluation. In some cases (e.g., tanks were removed prior to 12/22/88), the applicant may be eligible for the program.	

-		+	Is the property submitted for the VC or NAD listed or proposed for listing on the National Priorities List of Superfund sites established under the federal act (CERCLA)? Although Phase I assessments review state records, detail is not discussed. For the Voluntary Cleanup Program, details of CERCLA action are necessary to make an evaluation. In some cases, the applicant may not be eligible for the program.	

P I	P II	VC	III. ENVIRONMENTAL ASSESSMENT	Page
0	0	0	Qualified environmental professionals must submit environmental assessments. The applicant must submit documentation, in the form of a statement of qualifications or resume.	
0	0	0	The applicant should provide the address and legal description of the site and a map of appropriate scale identifying the location and size of the property.	
0		0	The applicant should describe the operational history of the property in detail, including the most current use of the property.	
0		0	A description of all business/activities that occupy or occupied the site as far back as record/knowledge allows.	
-		+	A brief description of all operations that may have resulted in the release of hazardous substances or petroleum products at the site, both past and present, including the dates activities occurred at the property and dates during which the contaminants were released into the environment. Although Phase I & II assessments may reveal the release of hazardous substances or petroleum products, the exact dates and quantities may not be discussed. For the Voluntary Cleanup Program, the dates of activities, releases, etc., are necessary for an evaluation of eligibility.	
-		+	A list of all site-specific notifications made as a result of any management activities of hazardous substances conducted at the site, including any and all Environmental Protection Agency ID numbers obtained for management of hazardous substances at the site from either the state or the Environmental Protection Agency. The Phase I assessment will reveal whether a facility has an Environmental Protection Agency ID number, but will not list the notifications made as a result of management activities of hazardous substances. This information is necessary for a Voluntary Cleanup Program evaluation.	
0		0	A list of all notifications to county emergency response personnel for the storage of reportable quantities of hazardous substances required under Emergency Planning and Community Right-to-Know statutes.	
0		0	A list of all notifications made to state and/or federal agencies, such as reporting of spills and/or accidental releases, including notifications to the State Oil Inspection Section (OIS) required under 8-20-506 and 507 and 25-18-104 CRS 1989 as amended and 6 CCR 1007-5 subpart 280.50 Part 3 of the OIS regulations, etc.	
-	-	+	A list of all known hazardous substances used at the site with volume estimates and discussion of relative toxicities. A Phase I & II assessment does not require such detail, however, the hazardous substances used, volumes and toxicities are important for a VC in the overall evaluation of risk and sampling efforts.	
-		+	A list of all wastes generated by current activities conducted at the site and manifests for shipment of hazardous wastes off site. A Phase I & II assessment does not require such detail, however, the manifest information is important for a VC evaluation, as in the above item.	

		+	A list of all permits obtained from state or federal agencies required as a result of activities conducted at the site. A listing of all permits is beyond a Phase I or II assessment. These are important for the Voluntary Cleanup Program so the Department can evaluate what potential sources may be at the site.	
0		0	A brief description of the current land uses, zoning and zoning restrictions of all areas contiguous to the site.	

P I	P II	VC	III. ENVIRONMENTAL ASSESSMENT	Page
			The applicant shall describe the physical characteristics of the site, including a map to scale, and an accompanying narrative showing and describing the following, utilizing historic knowledge as well as current data:	
0	0	0	Topography	
0	-	0	All surface water bodies and waste water discharge points	
0	-	0	Ground water monitoring and supply wells	
0	-	0	Facility process units and loading docks	
0		0	Chemical and/or fuel transfer and pumping stations	
0		0	Railroad tracks and rail car loading areas	
0		0	Spill collection sumps and/or drainage collection areas	
0		0	Wastewater treatment units	
0		0	Surface and storm water runoff retention ponds and discharge points	
0		0	Building drainage or wastewater discharge points	
0		0	All above or below ground storage tanks	
0		0	Underground or above ground piping	
0		0	Air emission control scrubber units	
0		0	Water cooling systems or refrigeration units	
0		0	Sewer lines	
0		0	French drain system	
0		0	Water recovery sumps and building foundations	
0		0	Surface impoundments	
0		0	Waste storage and/or disposal areas/pits, landfills	
0		0	Chemical or product storage areas	
0		0	Leach fields	
0		0	Dry wells or waste disposal sumps	
			If ground water contamination exists or the release has the potential to impact ground water, the applicant should provide the following information for areas within a one-half mile radius of the site:	
	0	0	The state engineers office listing of all wells within one-half mile radius of the site, together with a map to scale showing the locations of these wells.	
	0	0	Documentation of due diligence in verifying the presence or absence of unregistered wells supplying ground water for domestic use, when the potential for such wells is deemed likely as in older residential neighborhoods, or in rural areas.	
	0	0	A statement about each well within the half-mile radius of the site, stating whether the well is used as a water supply well or ground water monitoring well.	

	0	0	Lithologic logs for all on-site wells; copies of field log notes may be appropriate.	
	0	0	Well construction diagrams for all on-site wells showing screened interval, casing type and construction details including gravel pack, interval, bentonite seal thickness and cemented interval.	

P I	P II	VC	III. ENVIRONMENTAL ASSESSMENT	Page
	0	0	Description of the current and proposed use of on-site ground water in sufficient detail to evaluate human health and environmental risk pathways. In addition, the applicant will provide a discussion of any state and/or local laws that restrict the use of onsite ground water.	
			The applicant should provide information concerning the nature and extent of any contamination and releases of hazardous substances or petroleum products that have occurred at the site, including but not limited to:	
	-	+	Identification of the chemical nature and extent, both onsite and offsite, of contamination that has been released into soil, ground water or surface water at the property, and/or releases of substances from each of the source areas identified, including estimated volumes and concentrations of substances discharged at each area, discharge point, or leakage point as per Section 25.16.308(2)(b). Although Phase II assessments identify the nature of contamination, the extent is not always fully defined. For Voluntary Cleanup Pro- gram purposes, the source, nature, extent and estimated volumes of the release are important in the overall evaluation of risk and eligibility.	
	0	0	A map to scale showing the depth to ground water across the site, direction and rate of ground water movement across the site using a minimum of three measuring points.	
	0	0	A discussion of all hydraulic tests performed at the site to characterize the hydrogeologic properties of any aquifers onsite and in the area.	
	0	0	All reports and/or correspondence, which detail site soil, ground water and/or surface water conditions at the site, including analytical laboratory reports for all samples and analyses.	
	0	0	A discussion of how all environmental samples were collected, including rationale involved in sampling locations, parameters and methodology, a description of sampling locations, sampling methodology and analytical methodology and information on well construction details and lithologic logs. All sample analyses performed and presented as part of the environmental assessment should be appropriate and sufficient to fully characterize all constituents of all contamination that may have impacted soil, air, surface water and/or ground water on the property. The applicant should use Environmental Protection Agency approved analytical methods when characterizing the soil, air, surface water and/or ground water.	

P I	P II	VC	IV. APPLICABLE STANDARDS/RISK DETERMINATION	Page

	-	+	The applicant should provide a description of any applicable standards/guidance (federal, state, or other) establishing acceptable concentrations of constituents in soils, surface water, or ground water, for the proposed land use. Although a Phase II assessment evaluates applicable regulations for the current land use, it does not cover the proposed land use that may be different (e.g., the current land use is industrial and the proposed land use is residential, which likely has more conservative levels for contaminant concentrations).	

P I	P II	VC	IV. APPLICABLE STANDARDS/RISK DETERMINATION	Page
	-	+	The applicant should provide a description of the human and environmental exposure to contamination at the site based on the property's current use and any future use proposed by the property owner, including:	
	0	0	A table or list for site contaminants indicating which media are contaminated and the estimated vertical and areal extent of contamination in each medium.	
	-	+	A table or list of site contaminants, indicating the maximum concentrations of each contaminant detected onsite in the area where contaminant was discharged to the environment, and/or where the worst effects of the discharge are believed to exist. A Phase II assessment will evaluate the extent of site contaminants, not the maximum point or worst effects. The Voluntary Cleanup Program re- quests this item so that an understanding of the source and nature of the contaminants can be made as it relates to risk.	
	-	+	A table or list for site contaminants indicating whether the contaminant has a promulgated state standard, the promulgated standard and the medium the standard applies to. A Phase II assessment will not necessarily compare the site contaminants with state standards. This is important to evaluate whether the remedy will meet risk-based cleanup objectives.	
	-	+	A description and list of potential human and/or environmental exposure pathways pertinent to the present use of the property. A risk determination is not usually completed as part of a Phase II assessment; the VC will use risk as part of the overall evaluation.	
		+	A description and list of potential human and/or environmental exposure pathways pertinent to the future use of the property. (A risk determination is not usually completed as part of a Phase II assessment; the Voluntary Cleanup Program will use risk as noted above. Phase II assessments also do not evaluate future use of the proper- ty.)	
	-	+	A list and map defining all source areas, areas of contamination or contaminant discharge areas. Phase II assessments do not always show source areas. The Voluntary Cleanup Program requires that these areas be defined to indicate the proximity of contaminant with respect to receptors and sampling efforts.	

	-	+	A discussion of contaminant motilities, including estimates of contaminants to be transported by wind, volatilization, or dissolution in water. For those contaminants that are determined to be mobile and have the potential to migrate and contaminate the underlying ground water resources, the applicant should also evaluate the leach ability/mobility of the contaminants. This evaluation should consider, but not be limited to the following: leachability/mobility of the contamination, health-based ground water standards for the contamination; geological characteristics of the vadose zone that would enhance or restrict contaminant migration to ground water, including but not limited to grain size, fractures and carbon content; and depth to ground water. This evaluation, and any supporting documentation, should be included in the plan submitted. A Phase II assessment usually does not include a risk determination. However, the Voluntary Cleanup Program will evaluate the risk involved with the proposed clean- up in order to evaluate the application.	

P I	P II	VC	IV. APPLICABLE STANDARDS/RISK DETERMINATION	Page
		+	The applicant should then provide, using the information contained in the application, a risk-based analysis of all exposure pathways, which details how the proposed remediation will obtain acceptable risk levels. A Phase II assessment usually does not include a risk analysis, however, the Voluntary Cleanup Program requires this analysis to show that the remediation proposed will obtain acceptable risk or break pathways will attain an acceptable risk or break pathways.	
		+	The Voluntary Cleanup Program includes remediation whereas a Phase I or II assessment does not. Usually remediation is considered a Phase III assessment. The following are the requirements for the clean-up proposal.	
		+	A detailed description of the remediation alternative, or alternatives selected, which will be used to remove or stabilize contamination released into the environment or threatened to be released into the environment	
		+	A map identifying areas to be remediated, the area where the re- mediation system will be located if it differs from the contaminated areas, the locations of confirmation samples, the locations of monitoring wells, areas where contaminated media will temporarily be stores/staged and areas where contamination will not be remediated.	
		+	Remediation system design diagrams showing how the system will be constructed in the field.	
		+	A remediation system operation and maintenance plan that de- scribes, at a minimum, how the system will be operated to ensure that it functions as designed without interruptions and a sampling program that will be used to monitor its effectiveness in achieving the desired goal.	
		+	The plan should describe the sampling program that will be used to verify that treatment of the contaminated media has resulted in attainment of the proposed cleanup goals.	
		+	The plan should include a schedule of implementation	
		+	The cleanup completion report is necessary to demonstrate that the remediation was completed according to the application. Again, since remediation is involved, the report is beyond the scope of a Phase I or II assessment. The following items should be included in the completion report.	

		+	A final list of all site contaminants, along with the remaining concentrations, and any deviations from the original plan.	
		+	A final list defining which media are contaminated and the estimated vertical and areal extent of contamination to each medium.	
		+	A final list and map defining all source areas, areas of contamination or contaminant discharge areas.	
			Soil Contamination: Remediation by Excavation Only:	
		+	One confirmation sample per 500 ft2 as measured at the base on the excavation OR two confirmatory samples, whichever method results in the collection of the most samples.	

P I	P II	VC	IV. APPLICABLE STANDARDS/RISK DETERMINATION	Page
		+	One composite sample from each wall of the excavation. In excavations of an irregular shape, one composite sample for every 100 lineal feet of wall. For excavations greater than 5000 ft2, preparation of a grid for randomization of sampling.	
		+	Explanation of the sampling method in the narrative as well as any modifications to 1 and 2 above used to better characterize the re- medial efforts.	
		+	If contamination is to be left in place, an additional sample should be collected from the area of the worst contamination, as verified or with a field-sampling device.	
		+	Depth of samples collected	
		+	Provision of waste disposal manifests	
			In-Situ Soil Remediation	
		+	Completion of a minimum of two soil borings, with at least one completed in the area identified in the site assessment as the area of highest contamination. For larger areas of contamination, one boring per 10,000 ft2 of plume area.	
		+	Completion of the borings should employ a field-screening device and borings should be logged.	
		+	Soil sample submitted for analysis from each boring would be the sample with the highest field screening or one located at the ground water interface for each boring.	
		+	Ground Water Remediation	
		+	Field testing should include aquifer and contaminant characteristics such as gradient, partition coefficients, original contaminant levels, etc.	
		+	At each regular monitoring event, a map showing ground water flow direction, depth to ground water and sampling locations	
		+	Tabular presentation of data collected	
		+	Summary of Voluntary Cleanup Program participation	
		+	Summary of field activities, remedial activities, any deviations from original plans	
		+	Pertinent figures and drawings of remedial system	
		+	Conclusions made after remedial activities are completed	

Appendix D

Analytical Methodologies

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Analytical Methodology

Eligibility in the Voluntary Clean-up Program typically begins with the realization that some material is present in the environment, and the candidate is either the cause, or a contributor to, the problem.
Released materials must be identified and their concentrations in soil and ground water known in order to evaluate the impact of the release and to minimize it. Information about the types of materials managed on the property can provide an excellent starting point in making selections related to analytical methodology. Material Safety Data Sheets (MSDS), product composition data or supplier use instructions can complement any effort. An intimate understanding of the facility's material handling locations and procedures, along with knowledge of the site's drainage patterns and geology, can assist in piecing together the facts associated with a site.

Chemical analysis supports the information gathered as suggested above. Chemical analysis should be interpreted with respect to the individual site with an understanding of the peculiarities of target contaminants, other contaminants, properties of soil/ground water and inherent strengths and/or weak- nesses of analytical measurement systems. General guidance is offered here, but defining a detailed investigation is beyond the scope of this section. If more site-specific or contaminant-specific information is needed, consult with Division staff.

Organics

1. Petroleum contamination

Releases of petroleum products into the environment are complicated by the existence of many individual hydrocarbon constituents in a product. Petroleum fuels are blended to meet performance criteria; therefore, the compositions of individual components may vary widely. These performance criteria vary seasonally (winter-summer); as a consequence, composition of petroleum fuels also vary seasonally. One further complication is the fate of the individual compo- nents once released into the environment, which may include escape into the atmosphere, propulsion into the soil by subsequent rainfall depending upon the component's solubility in water, hydrolysis, adsorption, oxidation, reduction and bacterial decomposition. Generally, the objective of analysis is to determine: (1) the presence of product, (2) the type of product involved, (3) the relative concentration of petroleum product, or (4) concentrations of individual hydrocarbons.

The presence of gross amounts of hydrocarbon product in soil or ground water can be deter- mined readily by sensory information (smell, sight). This is due to the physical properties of the material such as the fact that hydrocarbons are less dense than water and as such will form a separate floating phase. This kind of field observation can best be followed by analytical techniques employed to determine the relative concentration of hydrocarbon in soil/ground water. The analytical methods used in such determinations are "proximate" methods, which measure a physical property irrespective of the chemical composition.

From these proximate data, one may infer that the amount of hydrocarbon is either directly comparable or proportional. Typically, Environmental Protection Agency method 418.1[1] (Total Petroleum Hydrocarbons, Infrared), and 413.2 (Total Recoverable Oil and Grease, Infrared) are useful for making a relative concentration determination. These techniques utilize procedures to extract the petroleum product into a solvent, and measuring the absorbance of infrared light by the resulting extract performs the determination.
These methods, when performed together, provide very good estimates of oil/grease/light fuels, but losses and underestimates of volatile hydrocarbons (gasoline) must be expected. While these methods are subject to interferences, the extent of interference is minimal and is typically confined to naturally occurring organic

[1] Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, 1983

substances such as humic acids. Some applications utilize a silica gel cleanup, which removes the polar humic substances, but caution must be exercised if polar organics such as glycol ethers (brake fluid, hydraulic oils) are targets, because the cleanup will remove the target analyte. Environmental Protection Agency method (Total Recoverable Oil and Grease, Gravimetric) 413.11 can also be used effectively. This technique is performed by extracting a sample with a solvent, and after evaporation of the solvent, the weight of the residue represents the oil/grease fraction. This is a relatively nonspecific technique, but it does exploit the nonvolatile nature of oil/grease/heavy fuels. Volatile hydrocarbons are lost, and interferences certainly include non-organic components in addition to colloidal solids present in the extract. Modifications to this technique include centrifugation to remove these solids.

If minor concentrations of petroleum hydrocarbons are suspected to be present, qualitative analyses need to be accomplished to identify the product type. Unlike gross contamination that can be observed, minor concentrations do not exhibit such readily observable properties as floating phases. This is further complicated by the fact that aromatic constituents can partition and dissolve in ground water. Even if the component cannot dissolve into ground water, it may be present in the ground water as a colloidal suspension. Because of this behavior, no single approach to identify petroleum product, or mixtures of product is entirely satisfactory, and several techniques exist to help resolve distillate fractions of petroleum, both colloidal and dis- solved. For example, purge and trap techniques, such as 80152 (and modified 80152) will resolve petroleum ether (C5 – C6), light naphtha (C6 – C7), gasoline (C5 – C12), but will not entirely resolve all of the components of kerosene, jet and diesel fuels (C12 – C37), which include non-purgable paraffins. To overcome this shortcoming, these methods provide options to the analyst regarding how the sample is presented to the analytical instrument. Direct injection of sample extracts can provide qualitative information out to paraffinic waxes, but most certainly does not demonstrate a lubricating oil (C20 – C55) fraction, and losses of volatile components must be expected using direct injection. These problems require innovative approaches, and some trade-off is necessary between what is absolutely required and what is technically possible.

Gas Chromatographic analyses that utilize the equipment in a simulated distillation mode (e.g., ASTM D2887 or equivalent) can provide product differentiation for the petroleum products except the heavier fractions. This information is most useful when the age, or weathering of the product, must be determined.

Other applications are firmly centered on our present understanding of product composition, and the propensity of components to partition into a dissolved phase in contact with ground water. Aromatics such as benzene, toluene, ethyl benzene and xylenes (BTEX) exhibit enough polarity that they tend to selectively extract into water as a dissolved phase. Most applications utilize purge and trap presentation and photo ionization detection to identify and resolve these aromatic gasoline constituents that are either very similar to Environmental Protection Agency method 80202 or a modified version of 8020[2].

If contamination by petroleum product is suspected, the combined use of methods 418.1/41311 provide reasonable data on both colloidal and dissolved hydrocarbon at modest expense. The numerical sum of each method gives the petroleum concentration in the sample. If the presence of dissolved aromatic components is of interest, then method 8020, or equivalent, ought to be accomplished.

Method 1665, a recently developed approach to eliminate the use of chlorofluorocarbons employed in 418/413 methods, is an approved alternative method. Method 1665 employs hexane rather than a Freon used in 418/413 methods.

[2] Test Methods for Evaluating Solid Waste, SW-846, 3rd Ed., Update I and II, EPA

Finally, inorganic contamination associated with petroleum needs to be evaluated due, in part, to the historic profile use of leaded fuels (see inorganic section).

2. Organic solvent contamination

Organic solvents are liquids that are used to dissolve substances, to act as a carrier and/or vehicle of substances either in a dissolved form or dispersed in solution. Everything that was dis- cussed about petroleum contamination regarding dissolved and colloidal suspensions is also applicable to evaluating solvent releases. Organic solvents have varying degrees of purity de- pending on their use; that is, minor concentrations of other substances is the rule for "rough" solvents. 1,1.1-trichloroethene frequently contains minor concentrations of tetrachloroethane, tetrachloroethene and dichloro-substituted constituents. Analytical, or reagent grade 1,1,1-trichloroethane contains no, or low trace impurities. Aside from these compositional differences, solvents also exhibit solubility similar to BTEX, except that solvents containing chlorine (chlorinated) will dissolve in water to the point of saturation then separate into a sinking phase or heavier-than-water phase. Solvents in the environment, like petroleum, may include escape into the atmosphere, propulsion into the soil by subsequent rainfall depending upon the component's solubility in water, hydrolysis, adsorption, oxidation, reduction and bacterial decom- position. Generally, the objective of analysis is to determine: (1) the presence of product, (2) the type of product involved, (3) the relative concentration of solvent, or (4) concentrations of individual hydrocarbons or (5) presence and concentration of degradation daughters.

There are proximate analyses available for these solvent compounds. The best known and most widely used of these are Total Organic Carbon (TOC) and Total Organic Halides (TOX). As the name implies, TOC is a measure of the organic carbon present in a sample. Measuring the total carbon and the inorganic carbon and simply taking the difference obtain this value. TOC does not differentiate between synthetic, and naturally occurring sources of organic car- bon, which presents a problem if the matrix contains a large organic component (such as raw waste waters). TOC, as an infrared analytical technique, typically employs preparative techniques such as purge and trap, headspace, shake out, sonication and soxlet extraction to prepare the sample. Preparation of soils and water for solvent analysis takes advantage of the physico- chemical properties of solvents to both separate these substances from other organic materials that might be present, and the matrix that may contain them.

When definitive data on individual contaminants is needed, such as evaluating compliance with state ground water standards, Gas Chromatographic (GC) methodologies are cheaper and pro- vide data that can be used to identify and measure the amount of the contaminant in the sample matrix. Cautions are that significant interferences are possible, which may obscure the contaminant, or be measured as the contaminant when the contaminant is not present. Key to selecting a technique for demonstrating solvent contamination is placing the target compound into an analyze class. Some methods are:

Method	Analyte Class
8010	Chlorinated solvents such as freons, dry cleaning and degreasing liquids
8015	Non-chlorinated solvents such as carbon disulfide, ethers, MEK, MIBK
8020	Aromatic solvents such as benzene, toluene

Gas Chromatographic/Mass Spectral methods are more expensive, but are able to operate in the presence of significant interferences and provide elaborate identification information where these data are necessary.

Inorganics

Contamination resulting from deposition of elemental metals, and their salts, can be demonstrated effectively by use of either Atomic Absorption Spectrophotometry (AAS or GFAAS) or Atomic Emission Spectrometry (ICP). Selecting either approach ought to be based entirely upon knowledge of the matrix, the desired detection limit and the presence of potential interferences.

By and large, AAS and GFAA are the most sensitive techniques with the least potential for interferences. Since each metal must be determined individually and must include its own quality control, costs for this approach are also the highest. These higher costs can be offset somewhat by producing usable data with good detection limits, in the presence of matrix effects and interferences. Some quality control mechanisms to illustrate interferences and compensate for their effects are necessary and should not be assumed.

The use of ICP techniques provide simultaneous or sequential determination of as many as 30 elements (limited only by the number of available channels). The advantage of obtaining the elemental composition of a sample from a single analysis ought to be apparent from both a cost and a productivity standpoint. However, this technique does suffer from a higher detection limit and interferences. The practical utility of this approach is when detection limit is not a driver (e.g., waste samples being evaluated for regulated elemental concentrations), when interferences are not a problem (determining ar- senic when low, or that no chromium is present), or when several elements are of interest from a single sample. One cautionary note is that while mercury does have emission spectra, its measurement by ICP is severely limited. As a consequence, mercury determinations typically are conducted via a cold vapor Atomic Absorption technique.

Similar to the organic analyses, there are some surrogate or proximate methods of analysis that can help define inorganic contamination. Specific conductivity, total dissolved solids, pH, eH, alkalinity and anion +analyses are all used in this fashion.

Appendix E

Sample Letters

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STATE OF COLORADO

Bill Owens, Governor
Jane E. Norton, Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado

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Located in Glendale, Colorado

Laboratory and Radiation Services Division
8100 Lowry Blvd.
Denver CO 80220-6928
(303) 692-3090

http://www.cdphe.state.co.us

Colorado Department of Public Health and Environment

May 1, 2000

Theodore O. Meiggs Ph.D. FOREMOST Solutions, Inc. 350 Indiana Street, Sutie 415
Golden, Colorado 80401

RCRA COMPLETION OF CORRECTIVE ACTION REQUIREMENT

Re: Cleanup of Chromium Contamination
EIMCO / Glenwood Industrial, LLC Site
2222 Deveruex Road, Glenwood Springs
COD981544786

Dear Mr. Meiggs:

I have received your April 17, 2000 semiannual groundwater report in which sampling data are presented and the progress of the cleanup effort is described. My review of your report suggests that the combined chemical and biochemical treatment system has converted the highly water soluble hexavalent chromium to insoluble trivalent chromium, thereby stabilizing the contamination and preventing continued leaching to ground water at the Glenwood Springs facility. Test results confirm that ground water quality has improved with the reduction of chromium concentrations to below the State standard for this contaminant in all wells.

Based on the information provided in the April 17th report, the treatment of both the source area and ground water appears to have been successful. Unless new data is generated proving otherwise, the Department does not intent to have the owners or tenants of the 2222 Deveruex Road facility pursue this matter any further. No further corrective action is required with regard to this past release. We also concur with your proposal to close the five ground water monitoring wells in accordance with procedures established by the State Engineers Office (Department of Natural Resources, Division of Water Resources). I thank you and your client, Glenwood Industrial, for having chosen to pursue this matter to its successful conclusion.

Please feel free to call me at (303) 692-3362 if you have any questions regarding this letter. Sincerely,

Walter Avramenko,
Unit Leader Hazardous Waste Corrective Action Unit Compliance Program

cc: Gary Schultz – Glenwood Industrial, LLC
Valois Shea – USEPA Region VIII / UIC Program Kathleen Wahlberg – CDPHE / HMWMD

STATE OF COLORADO

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Jane E. Norton, Executive Director

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Colorado Department of Public Health and Environment

May 5, 1998

Mr. Robert McPeek
10584 Weld County Road 31 Fort
Luption, Colorado 80621

SOLID WASTE
NO FURTHER ACTION LETTER

RE: Former Road 31 Disposal Site, Fort Lupton

Dear Mr. McPeek:
The Solid Waste Unit of the Hazardous Materials and Waste Management Division (the Division) has reviewed the April 15, 1998 letter prepared by Mr. Michael Meschke. On your behalf, Mr. Meschke is requesting approval for closure of the above referenced site. We concur with Mr. Meschke's conclusions, that all conditions contained withing the Corrective Action Plan for this site have been adequately addressed. As part of the closure process, a site visit was conducted by Mr. Trevor Jiricek of Weld County Health Department (WCHD) and myself on May 4, 1998. Based on my observations it appears that the remedial activities have been completed. Therefore, based on the information contained in the April 15 letter, and discussions with you during the site visit, the Division considers this site closed, and no further action is required.

Please be aware, the Division's letter of April 21, 1997 to yourself restricted the end use of the biobed soil to the south pond area. Prior to any usage of biobed soils, outside of the south pond, a written request must be submitted to the Division and WCHD for review and approval.

Should you have any questions regarding this letter, contact me at (303) 692- 3437.
Sincerely,
Roger Doak
Solid Waste Unit
Compliance Program

cc: Trevor Jiricek,
Weld County Health Department Michael Meschke
Weld County Commissioners Weld County Planning Department
sw/wld/31 1a

STATE OF COLORADO

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Jane E. Norton, Executive Director

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Colorado Department
of Public Health
and Environment

April 30, 2001

Ms. Victoria Sorenson City
of Fort Morgan 710 E
Railroad Ave
Fort Morgan, CO 80701

VOLUNTARY CLEANUP PLAN APPROVAL LETTER

Re: Voluntary Cleanup Plan Approval, former Fort Morgan Power Plant, 1600 N Main, Ft. Morgan, Colorado

Dear Ms. Sorenson:

The Colorado Department of Public Health and Environment (the "Department") has reviewed the voluntary cleanup plan submitted on behalf of The City of Fort Morgan (the Applicant) concerning the property identified in the application and located at 1600 N Main, Ft. Morgan, Colorado (the site). This review was limited to the materials submitted by the Applicant, and a site visit on April 25, 2001, as well as those materials required by §25-16-304(2).

Based on this review the Department has concluded that, if fully and properly implemented, the plan will attain a degree of cleanup and control of hazardous substances and petroleum products, such that the property does not present an unacceptable risk to human health or the environment based on the property's proposed future use which is as a parks and recreation maintenance facility.

In accordance with the Voluntary Cleanup and Redevelopment Act §§ 25-16-301 to 311, C.R.S., the Department hereby approves the voluntary cleanup plan submitted by the Applicant for the property identified in the application and located at 1600 N Main, Ft Morgan, Colorado. It is the opinion of the Colorado Department of Public Health and Environment that upon completion of the voluntary cleanup plan no further action is required to assure that this property, when used for the purposes identified in the voluntary cleanup plan (parks and recreation maintenance facility), is protective of existing and proposed uses and does not pose an unacceptable risk to human health or the environment at the site.

The approval of the voluntary cleanup plan by the Department, and the Department's conclusions and opinions relating thereto, apply only to conditions on the property and state standards that exist at the time of submission of, and which were addressed in the voluntary cleanup plan application. The submission of any materially is misleading information by the Applicant in the context of a voluntary cleanup plan shall render the Department's approval of the plan void. Also, failure of the Applicant to materially comply with the voluntary cleanup plan shall render the Department's approval of the plan void.

Further, if the voluntary cleanup plan is not initiated within twelve months after approval by the Department, or completed within twenty-four months after approval or within a Department approved extension for completion of the voluntary cleanup plan, the approval shall lapse, and reapplication and Department approval pursuant to § 25-16-306(4), C.R.S. is required prior to implementation of the lapsed voluntary cleanup plan.

Within forty-five days after completion of the voluntary cleanup described in the plan approved by the Department, the Applicant shall provide to the Department a certification from a qualified environmental professional that the voluntary cleanup plan has been fully implemented. Any person who fails after initiation of an approved voluntary cleanup plan, to fully and properly implement the plan, may be required by the Department to take further action, provided such action is authorized or required under applicable state laws and regulations.

The Applicant shall comply with all applicable federal, state, and local laws or regulations and shall obtain all necessary approvals or permits to conduct the activities required by the voluntary cleanup plan. The Department makes no representation with respect to approvals or permits required by federal or local laws or regulations or state laws or regulations other than the Voluntary Cleanup and Redevelopment Act.

Further, the Department shall not be liable for any injuries or damages to persons or property resulting from acts or omissions of the Applicant or those acting for or on behalf of the Applicant, including its officers, employees, agents, successors, representatives, contractors, or consultants in carrying out the activities required by the voluntary cleanup plan. Nothing in the Department's approval of the voluntary cleanup plan, or the Department's conclusions or opinions relating thereto, shall constitute an expression of implied waiver of sovereign immunity otherwise applicable to the Department, its employees, agents, or representatives.

Nothing in this letter shall be construed to limit the Department's authority, and the Department reserves all rights and authorities to bring any action pursuant to applicable state laws or regulations.

If you have any questions, please call me at (303) 692-3449. Sincerely,

Mark E. Walker
Voluntary Cleanup Program

cc: RV010316-1
Roger Hosea; Northeast Colorado Health Dept.

STATE OF COLORADO

Bill Owens, Governor
Jane E. Norton, Executive Director

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Colorado Department of Public Health and Environment

August 10, 1999

Mr. Rick Kahm, President
Englewood Environmental Foundation Inc.
3400 S Elati Street
Englewood, CO 80110

VOLUNTARY CLEANUP
NO ACTION DETERMINATION WITH UPGRADIENT SOURCE

Re: No Action Determination Approval, NE Quadrant of former Cinderella City Mall, Between South Elati & Galapago and West Floyd & Englewood Parkway, Englewood, Colorado

Dear Mr. Kahm:
On June 25, 1999 a No Action Petition (the Petition) was submitted on behalf of Englewood Environmental Foundation (the Applicant) to the Colorado Department of Public Health and Environment (the Department) pursuant to C.R. S 25-16-307(2) of the Colorado Voluntary Cleanup and Redevelopment Act. The Petition was submitted for the applicant's property identified in the legal description contained in the Petition and generally described as the NE Quadrant of the former Cinderella City Mall, Between South Elati & Galapago and West Floyd & Englewood Parkway, in Englewood, Colorado ("the property").

The Department conducted a review of the environmental data collected on the above-referenced property. Based on this review and pursuant to C.R.S. 25-16-307(), the Department approves the applicant's Petition and makes the following determinations:

The environmental assessment submitted by the applicant and performed by qualified environmental professionals indicates that there is no evidence of contamination released into the environment present from the applicant's operations on the property which exceeds applicable promulgated state standards or which poses an unacceptable risk to human health and the environment.

Contamination is present in the groundwater (chlorinated solvents) for which there are applicable and promulgated state standards. The contamination appears to originate from a source upgradient of the site and the applicant is not responsible for this contamination.

Based on the information provided by the applicant concerning property identified in the legal description contained in the Petition and generally described as the NE Quadrant of the former Cinderella City Mall, between South Elati & Galapago and West Floyd & Englewood Parkway, Englewood, Colorado, it is the opinion of the Colorado Department of Public Health and Environment that no further action is required to assure that this property, when used for the purposes identified in the no action petition (commercial facility), is protective of existing and proposed uses and does not pose an unacceptable risk to human health or the environment at the site.

The approval of the applicant's Petition by the Department applies only to conditions on the property and state standards that exist as of the time of submission of the Petition. In addition, this approval applies only for the land use specified in the application, which is as a commercial facility. This approval shall be considered void if it is determined that materially misleading information has been submitted by the applicant. Nothing in this letter shall be construed to limit the Department's authority to take actions under existing statues as necessary, should new information come to the attention of the Department.

If you have any questions, please contact me at (303) 692-3449. Sincerely,

Mark E. Walker
Voluntary Cleanup Program

cc: RV990625-1
Paul Casey, Spectrum Environmental Warren Brown, Tri-County Health Dept.

STATE OF COLORADO

Bill Owens, Governor
Jane E. Norton, Executive Director

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Colorado Department of Public Health and Environment

January 14, 1994

Rich D. Ziegler
Executive Vice President and General Manager
Cotter Corporation
12596 west Bayaud Avenue, Suite 350
Lakewood, CO 80228

RADIATION CONTROL DIVISION CLEANUP APPROVAL LETTER

Dear Mr. Ziegler:

Radiation Control Division staff have reviewed Cotter Corporation's January 11, 1994 report on the Atchison, Topeka, and Santa Fe Railroad Depot Project.

Cotter Corporation's objectives were to (1) meet the U.S. Environmental Protection Agency (USEPA) health-based soil standard and (2) conduct clean up the site as low as is reasonably achievable toward background range.

The final report presents surveys which confirm Cotter's objectives were met and that radioactive material was removed in a manner consistent with RH 3.16.4.1.2 of Colorado's Rules and Regulations Pertaining to Radiation Control. The site-wide average of randomly-chosen final verification samples was less than 3 picoCuries of radium-226 per gram of soil, well below the USEPS standard applicable to this site, which is 6.3 picoCuries of Radium-226 per gram of soil. Independent analyses conducted by the Department's laboratory on the final verification sample set confirm Cotter's results.

Based upon the information presented in the January 11, 1994 report, as well as upon staff technical evaluation of the radium and thorium data and staff monitoring of cleanup progress during site visits, the Division finds that cleanup of the Atchison, Topeka, and Santa Fe Railroad depot site is complete and satisfactory and that the area cleaned up is suitable for unrestricted use.

If you have any questions regarding this letter, please contact Ken Weaver of the Division at 692-3030.
Respectfully,

Robert M. Quillin
Director Radiation Control Division

xc: D. Link, USEPA

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Appendix F

Brownfields Tax Credit Legislation SB 14-073

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NOTE: The governor signed this measure on 5/15/2014.

SENATE BILL 14-073

BY SENATOR(S) Jahn, Grantham, Hodge, Tochtrop, Aguilar, Guzman, Heath, Johnston, Jones, Kerr, King, Newell, Nicholson, Rivera, Roberts, Schwartz, Todd, Ulibarri, Zenzinger, Carroll;
also REPRESENTATIVE(S) Gerou, Fischer, Hamner, Kraft-Tharp, Labuda, Moreno, Pettersen, Rosenthal, Schafer, Young.

Concerning the state income tax credit for the environmental remediation of contaminated land in the state, and, in connection therewith, making and reducing appropriations.

Be it enacted by the General Assembly of the State of Colorado:

SECTION 1. In Colorado Revised Statutes, repeal and reenact, with amendments, 39-22-526 as follows:

39-22-526. Credit for environmental remediation of contaminated land - definition - repeal. (1) (a) FOR INCOME TAX YEARS COMMENCING ON OR AFTER JANUARY 1, 2014, BUT PRIOR TO JANUARY 1, 2023, THERE IS ALLOWED A CREDIT AGAINST THE INCOME TAXES IMPOSED BY THIS ARTICLE FOR ANY APPROVED ENVIRONMENTAL REMEDIATION OF CONTAMINATED PROPERTY TO ANY TAXPAYER WHO MEETS THE FOLLOWING REQUIREMENTS:

Capital letters indicate new material added to existing statutes; dashes through words indicate deletions from existing statutes and such material not part of act.

THE PROPERTY WHERE THE ENVIRONMENTAL REMEDIATION TAKES PLACE MUST BE LOCATED WITHIN THE STATE; AND

THE TAXPAYER SEEKING THE CREDIT MUST POSSESS A CERTIFICATE ISSUED BY THE DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT PURSUANT TO SECTION 25-16-306 (5) (b), C.R.S., AND SUBSECTION (3) OF THIS SECTION.

THE TAX CREDIT ALLOWED IN THIS SECTION MUST NOT EXCEED FORTY PERCENT OF THE FIRST SEVEN HUNDRED FIFTY THOUSAND DOLLARS EXPENDED FOR THE APPROVED REMEDIATION, AND MUST NOT EXCEED THIRTY PERCENT OF THE NEXT SEVEN HUNDRED FIFTY THOUSAND DOLLARS EXPENDED FOR THE APPROVED REMEDIATION. A TAX CREDIT IS NOT ALLOWED FOR EXPENDITURES EXCEEDING ONE MILLION FIVE HUNDRED THOUSAND DOLLARS ON ANY INDIVIDUAL PROJECT.

A CREDIT MUST BE FIRST APPLIED TO TAXES DUE OR TRANSFERRED TO ANOTHER TAXPAYER PURSUANT TO PARAGRAPH (d) OF THIS SUBSECTION (1) NO LATER THAN THE TAX YEAR FOLLOWING THE TAX YEAR IN WHICH THE CERTIFICATION IS PROVIDED TO THE DEPARTMENT PURSUANT TO SECTION 25-16-306 (5) (a), C.R.S. IF THE CREDIT ALLOWED BY THIS SECTION EXCEEDS THE TAX OTHERWISE DUE, THE EXCESS CREDIT MAY BE CARRIED FORWARD AND CLAIMED ON THE EARLIEST POSSIBLE SUBSEQUENT TAX RETURN FOR A PERIOD NOT TO EXCEED FIVE YEARS.

ATAXPAYER MAY TRANSFER ALL OR A PORTION OFA TAX CREDIT GRANTED PURSUANT TO THIS SUBSECTION (1) TO ANOTHER TAXPAYER FOR SUCH OTHER TAXPAYER, AS TRANSFEREE, TO APPLY AS A CREDIT AGAINST THE TAXES IMPOSED BY THIS ARTICLE SUBJECT TO THE FOLLOWING LIMITATIONS:

THE TAXPAYER MAY ONLY TRANSFER A PORTION OF THE TAX CREDIT THAT THE TAXPAYER HAS NEITHER APPLIED AGAINST THE INCOME TAXES IMPOSED BY THIS ARTICLE NOR USED TO OBTAIN A REFUND;

THE TAXPAYER MAY TRANSFER A PRORATED PORTION OF THE TAX CREDIT TO MORE THAN ONE TRANSFEREE;

FOR ANY TAX YEAR IN WHICH A TAX CREDIT IS TRANSFERRED PURSUANT TO THIS PARAGRAPH (d), BOTH THE TAXPAYER AND THE TRANSFEREE SHALL FILE WRITTEN STATEMENTS WITH THEIR INCOME TAX RETURNS SPECIFYING THE AMOUNT OF THE TAX CREDIT TRANSFERRED. A TRANSFEREE MAY ONLY CLAIM A CREDIT TRANSFERRED PURSUANT TO THIS PARAGRAPH (d) IF THE TAXPAYER'S WRITTEN STATEMENT VERIFIES THE AMOUNT OF THE TAX CREDIT CLAIMED BY THE TRANSFEREE.

A TRANSFEROR MAY TRANSFER A CREDIT PURSUANT TO THIS PARAGRAPH (d) REGARDLESS OF WHETHER THE TRANSFEROR RECEIVES VALUE IN EXCHANGE FOR THE TRANSFER. THE TRANSFEREE MAY USE THE CREDIT TO PAY, IN WHOLE OR IN PART, THE INCOME TAX OBLIGATION IMPOSED ON THE TRANSFEREE UNDER THIS ARTICLE. THE TRANSFEREE'S USE OF A TAX CREDIT FROM A TRANSFEROR UNDER THIS SECTION TO PAY TAXES OWED IS NOT DEEMED A REDUCTION IN THE AMOUNT OF INCOME TAXES IMPOSED BY THIS ARTICLE ON THE TRANSFEREE.

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THE TRANSFEREE SHALL SUBMIT TO THE DEPARTMENT OF REVENUE A FORM APPROVED BY THE DEPARTMENT ESTABLISHING THAT THE TAXPAYER HAS SATISFIED THE REQUIREMENTS OF THIS SECTION. THE TRANSFEREE SHALL ALSO FILE A COPY OF THE FORM WITH THE DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT.

THE TRANSFER OF A TAX CREDIT MUST OCCUR PRIOR TO THE DUE DATE IMPOSED BY THIS ARTICLE, NOT INCLUDING ANY EXTENSIONS, FOR FILING THE TRANSFEREE'S INCOME TAX RETURN;

A TAX CREDIT HELD BY AN INDIVIDUAL EITHER DIRECTLY OR AS A RESULT OF A DONATION BY A PASS-THROUGH ENTITY, BUT NOT A TAX CREDIT HELD BY A TRANSFEREE UNLESS USED BY THE TRANSFEREE'S ESTATE FOR TAXES OWED BY THE ESTATE, SURVIVES THE DEATH OF THE INDIVIDUAL AND MAY BE CLAIMED OR TRANSFERRED BY THE DECEDENT'S ESTATE;

THE TRANSFEROR OF A TAX CREDIT TRANSFERRED PURSUANT TO THIS PARAGRAPH (d) IS THE TAX MATTERS REPRESENTATIVE IN ALL MATTERS WITH RESPECT TO THE CREDIT. THE TAX MATTERS REPRESENTATIVE IS RESPONSIBLE FOR REPRESENTING AND BINDING THE TRANSFEREES WITH RESPECT TO ALL ISSUES AFFECTING THE CREDIT, INCLUDING THE AMOUNTS EXPENDED FOR THE APPROVED REMEDIATION, THE CERTIFICATE ISSUED BY THE DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, NOTIFICATIONS AND CORRESPONDENCE FROM AND WITH THE DEPARTMENT OF REVENUE, AUDIT EXAMINATIONS, ASSESSMENTS OR REFUNDS, SETTLEMENT AGREEMENTS, AND THE STATUTE OF LIMITATIONS. THE TRANSFEREE IS SUBJECT TO THE SAME STATUTE OF LIMITATIONS WITH RESPECT TO THE CREDIT AS THE TRANSFEROR OF THE CREDIT.

FINAL RESOLUTION OF DISPUTES REGARDING THE TAX CREDIT BETWEEN THE DEPARTMENT OF REVENUE AND THE TAX MATTERS REPRESENTATIVE, INCLUDING FINAL DETERMINATIONS, COMPROMISES, PAYMENT OF ADDITIONAL TAXES OR REFUNDS DUE, AND ADMINISTRATIVE AND JUDICIAL DECISIONS, IS BINDING ON TRANSFEREES.

ANY PERSON WHO HAS CLAIMED A CREDIT OR WHO MAY BE ELIGIBLE TO CLAIM A TAX CREDIT EITHER AS A TAXPAYER OR A TRANSFEREE MAY PETITION THE DEPARTMENT OF REVENUE TO CHANGE THE TAX MATTERS REPRESENTATIVE'S DESIGNATION. THE EXECUTIVE DIRECTOR SHALLPROMULGATE RULES SPECIFYING THE PROCEDURES FOR A CHANGE TO THE TAX MATTERS REPRESENTATIVE'S DESIGNATION WHEN THE EXECUTIVE DIRECTOR DETERMINES THAT THE TAX MATTERS REPRESENTATIVE IS UNAVAILABLE OR UNWILLING TO ACT AS THE TAX MATTERS REPRESENTATIVE. IFTHE DEPARTMENT GRANTS THE PETITION, THE NEW TAX MATTERS REPRESENTATIVE SHALL SERVE IN THAT CAPACITY ON AND AFTER THE DATE THE DEPARTMENT GRANTS THE PETITION.

(a) FOR INCOME TAX YEARS COMMENCING ON OR AFTER JANUARY 1, 2014, BUT PRIOR TO JANUARY 1, 2023, THERE IS ALLOWED TO ANY QUALIFIED ENTITY A TRANSFERABLE EXPENSE AMOUNT FOR EXPENSES INCURRED BY THE QUALIFIED ENTITY IN PERFORMING APPROVED ENVIRONMENTAL REMEDIATION. THE TRANSFERABLE EXPENSE AMOUNT MAY ONLY BE TRANSFERRED TO A TAXPAYER TO BE CLAIMED BY THE TAXPAYER AS A CREDIT PURSUANT TO THE PROVISIONS OF THIS SUBSECTION (2). THE TRANSFERRABLE EXPENSE AMOUNT IS ALLOWED TO ANY QUALIFIED ENTITY THAT MEETS THE FOLLOWING REQUIREMENTS:

THE PROPERTY WHERE THE ENVIRONMENTAL REMEDIATION TAKES PLACE MUST BE LOCATED PAGE 3-SENATE BILL 14-073
WITHIN THE STATE; AND THE DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT MUST HAVE ISSUED A CERTIFICATE FOR THE PROPERTY PURSUANT TO SECTION 25-16-306 (5) (b), C.R.S., AND SUBSECTION (3) OF THIS SECTION.

THE TRANSFERABLE EXPENSE AMOUNT ALLOWED IN THIS SECTION MUST NOT EXCEED FORTY

PERCENT OF THE FIRST SEVEN HUNDRED FIFTY THOUSAND DOLLARS EXPENDED BY THE QUALIFIED ENTITY FOR THE APPROVED REMEDIATION, AND MUST NOT EXCEED THIRTY PERCENT OF THE NEXT SEVEN HUNDRED FIFTY THOUSAND DOLLARS EXPENDED BY THE QUALIFIED ENTITY FOR THE APPROVED REMEDIATION. A TRANSFERABLE EXPENSE AMOUNT IS NOT ALLOWED FOR EXPENDITURES EXCEEDING ONE MILLION FIVE HUNDRED THOUSAND DOLLARS ON ANY INDIVIDUAL PROJECT.

A QUALIFIED ENTITY MAY TRANSFER ALL OR A PORTION OF A TRANSFERABLE EXPENSE AMOUNT ALLOWED PURSUANT TO THIS SUBSECTION (2) TO A TAXPAYER FOR SUCH TAXPAYER, AS TRANSFEREE, TO APPLY AS A CREDIT AGAINST THE TAXES IMPOSED BY THIS ARTICLE SUBJECT TO THE FOLLOWING LIMITATIONS:

THE QUALIFIED ENTITY MAY TRANSFER A PRORATED PORTION OF THE TRANSFERABLE EXPENSE AMOUNT TO MORE THAN ONE TRANSFEREE;

FOR ANY TAX YEAR IN WHICH A TRANSFERABLE EXPENSE AMOUNT IS TRANSFERRED PURSUANT TO THIS SUBSECTION (2), THE QUALIFIED ENTITY SHALL FILE A WRITTEN STATEMENT WITH THE DEPARTMENT OF REVENUE ON A FORM APPROVED BY THE DEPARTMENT OF REVENUE AND THE TRANSFEREE SHALL FILE A WRITTEN STATEMENT WITH THE TRANSFEREE'S INCOME TAX RETURN SPECIFYING THE AMOUNT TRANSFERRED TO THE TRANSFEREE TO BE CLAIMED AS A CREDIT. A TRANSFEREE MAY ONLY CLAIM A CREDIT PURSUANT TO THIS SUBSECTION (2) IF THE QUALIFIED ENTITY'S WRITTEN STATEMENT VERIFIES THE AMOUNT OF THE TAX CREDIT CLAIMED BY THE TRANSFEREE.

A QUALIFIED ENTITY MAY TRANSFER A TRANSFERABLE EXPENSE AMOUNT TO BE CLAIMED AS A CREDIT BY A TRANSFEREE PURSUANT TO THIS SUBSECTION (2) REGARDLESS OF WHETHER THE QUALIFIED ENTITY RECEIVES VALUE IN EXCHANGE FOR THE TRANSFER. THE TRANSFEREE MAY USE THE CREDIT TO PAY, IN WHOLE OR IN PART, THE INCOME TAX OBLIGATION IMPOSED ON THE TRANSFEREE UNDER THIS ARTICLE. THE TRANSFEREE'S USE OF A TAX CREDIT FROM A QUALIFIED ENTITY UNDER THIS SECTION TO PAY TAXES OWED IS NOT DEEMED A REDUCTION IN THE AMOUNT OF INCOME TAXES IMPOSED BY THIS ARTICLE ON THE TRANSFEREE.

THE TRANSFEREE SHALL SUBMIT TO THE DEPARTMENT OF REVENUE A FORM APPROVED BY THE DEPARTMENT ESTABLISHING THAT THE TRANSFEREE HAS SATISFIED THE REQUIREMENTS OF THIS SECTION. THE TRANSFEREE SHALL ALSO FILE A COPY OF THE FORM WITH THE DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT.

THE TRANSFER OF A TRANSFERABLE EXPENSE AMOUNT TO A TRANSFEREE MUST OCCUR PRIOR TO THE DUE DATE IMPOSED BY THIS ARTICLE, NOT INCLUDING ANY EXTENSIONS, FOR FILING THE TRANSFEREE'S INCOME TAX RETURN;

A TAX CREDIT HELD BY A TRANSFEREE'S ESTATE FOR TAXES OWED BY THE ESTATE, SURVIVES THE DEATH OF THE TRANSFEREE AND MAY BE CLAIMED OR TRANSFERRED BY THE DECEDENT'S STATE;
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THE QUALIFIED ENTITY THAT TRANSFERS A TRANSFERABLE EXPENSE AMOUNT TO BE CLAIMED AS A CREDIT BY A TRANSFEREE PURSUANT TO THIS SUBSECTION (2) IS THE TAX MATTERS REPRESENTATIVE IN ALL MATTERS WITH RESPECT TO THE CREDIT. THE TAX MATTERS REPRESENTATIVE IS RESPONSIBLE FOR REPRESENTING AND BINDING THE TRANSFEREES WITH RESPECT TO ALL ISSUES AFFECTING THE

CREDIT, INCLUDING THE AMOUNTS EXPENDED FOR THE APPROVED REMEDIATION, THE CERTIFICATE ISSUED BY THE DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, NOTIFICATIONS AND CORRESPONDENCE FROM AND WITH THE DEPARTMENT OF REVENUE, AUDIT EXAMINATIONS, ASSESSMENTS OR REFUNDS, SETTLEMENT AGREEMENTS, AND THE STATUTE OF LIMITATIONS.

FINALRESOLUTION OFDISPUTES REGARDING THE TAX CREDIT BETWEEN THE DEPARTMENT OF REVENUE AND THE TAX MATTERS REPRESENTATIVE, INCLUDING FINAL DETERMINATIONS, COMPROMISES, PAYMENT OF ADDITIONAL TAXES OR REFUNDS DUE, AND ADMINISTRATIVE AND JUDICIAL DECISIONS, IS BINDING ON TRANSFEREES.

FOR PURPOSES OF THIS SUBSECTION (2), "QUALIFIED ENTITY" MEANS A COUNTY, HOME RULE COUNTY, CITY, TOWN, HOME RULE CITY, HOME RULE CITY AND COUNTY, OR A PRIVATE NONPROFIT ENTITY THAT IS EXEMPT FROM THE INCOME TAXES IMPOSED BY THIS ARTICLE.

IN ADDITION TO ANY OTHER REQUIREMENTS OF THIS SECTION, A TAXPAYER SHALL SUBMIT A CLAIM FOR A CREDIT AND A QUALIFIED ENTITY SHALL SUBMIT A CLAIM FOR A TRANSFERRABLE EXPENSE AMOUNT TO THE DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT. THE DEPARTMENT SHALL ISSUE CERTIFICATES FOR THE CLAIMS RECEIVED IN THE ORDER SUBMITTED. AFTER CERTIFICATES HAVE BEEN ISSUED FOR CREDITS AND TRANSFERRABLE EXPENSE AMOUNTS IN THE AGGREGATE AMOUNT OF THREE MILLION DOLLARS FOR ALL TAXPAYERS AND QUALIFIED ENTITIES COMBINED FOR THE 2014 CALENDAR YEARS AND THREE MILLION DOLLARS FOR EACH CALENDAR YEAR THEREAFTER, ANY CLAIMS THAT EXCEED THE AMOUNT ALLOWED FOR THE CALENDAR YEAR SHALL BE PLACED ON A WAIT LIST IN THE ORDER SUBMITTED AND A CERTIFICATE SHALL BE ISSUED FOR USE OF THE CREDIT OR TRANSFERRABLE EXPENSE AMOUNT IN THE NEXT YEAR FOR WHICH THE DEPARTMENT HAS NOT ISSUED CREDIT CERTIFICATES IN EXCESS OF THREE MILLION DOLLARS; EXCEPT THAT NO MORE THAN ONE MILLION DOLLARS IN CLAIMS SHALL BE PLACED ON THE WAIT LIST FOR ANY GIVEN CALENDAR YEAR. THE DEPARTMENT SHALL NOT ISSUE CERTIFICATES FOR ANY CALENDAR YEAR, INCLUDING CERTIFICATES PLACED ON A WAIT LIST FOR THAT YEAR, IN AN AGGREGATE AMOUNT THAT EXCEEDS THREE MILLION DOLLARS. NO CLAIM FOR A CREDIT OR A TRANSFERRABLE EXPENSE AMOUNT IS ALLOWED FOR ANY INCOME TAX YEAR COMMENCING ON OR AFTER JANUARY 1, 2014, UNLESS A CERTIFICATE HAS BEEN ISSUED BY THE DEPARTMENT PURSUANT TO THIS SUBSECTION (3).

THIS SECTION IS REPEALED, EFFECTIVE DECEMBER 31, 2029.

SECTION 2. In Colorado Revised Statutes, 25-16-306, amend (5) as follows:

25-16-306. Approval of voluntary clean-up plan - time limits - contents of notice - conditions under which approval is void - expiration of approval. (5) (b) If the owner is applying for the tax credit provided in section 39-22-526 SECTION 39-22-526 (1), C.R.S., OR TO TRANSFER A
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TRANSFERABLE EXPENSE AMOUNT PURSUANT TO SECTION

39-22-526 (2), C.R.S., the owner shall submit to the department the certification along with an application pursuant to section 25-16-303. The certification shall, in addition to certifying that the plan has been fully implemented, disclose the costs of implementation and include supporting documentation of those costs. The department shall then certify the accuracy of the costs and issue the property owner a certificate stating that the clean-up has occurred and the costs of such clean-

up. The property owner may submit this certificate to the department of revenue to claim a tax credit OR TRANSFER A TRANSFERABLE EXPENSE AMOUNT under section 39-22-526 (2) SECTION 39-22-526, C.R.S.

SECTION 3. In Colorado Revised Statutes, 39-21-113, add (17.7) as follows:

39-21-113. Reports and returns - rule - repeal. (17.7) (a) NOTWITHSTANDING ANY OTHER PROVISION OFTHIS SECTION, THE EXECUTIVE DIRECTOR MAY REQUIRE THAT SUCH DETAILED INFORMATION
REGARDING A CLAIM FOR A CREDIT FOR THE APPROVED ENVIRONMENTAL REMEDIATION OF CONTAMINATED PROPERTY PURSUANT TO SECTION 39-22-526 AND ANY DOCUMENTATION SUBMITTED IN SUPPORT OF THE
CREDIT CLAIMED BE GIVEN TO THE DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT AS THE EXECUTIVE DIRECTOR DETERMINES IS NECESSARY IN THE PERFORMANCE OF THE DEPARTMENT'S FUNCTIONS RELATING TO THE
CREDIT. NOTWITHSTANDING THE PROVISIONS OF PART 2 OF ARTICLE 72 OF
TITLE 24, C.R.S., IN ORDER TO PROTECT THE CONFIDENTIAL FINANCIAL INFORMATION OF A TAXPAYER, THE EXECUTIVE DIRECTOR SHALL DENY THE RIGHT TO INSPECT ANY INFORMATION OR DOCUMENTATION REQUIRED IN ACCORDANCE WITH THE PROVISIONS OF THIS SUBSECTION (17.7).

(b) NOTWITHSTANDING THE PROVISIONS OF THIS SECTION, THE EXECUTIVE DIRECTOR MAY PROVIDE SUCH DETAILED INFORMATION PERTINENT TO A CLAIM FOR A CREDIT FOR THE APPROVED ENVIRONMENTAL REMEDIATION OF CONTAMINATED PROPERTY PURSUANT TO SECTION 39-22-526 TO TAXPAYERS, INCLUDING TRANSFEREES, WITH CASES INVOLVING COMMON OR RELATED ISSUES OF FACT OR LAW. PERSONS WHO RECEIVE TAXPAYER INFORMATION PURSUANT TO THE PROVISION OF THIS SUBSECTION (17.7) SHALL BE SUBJECT TO THE PROVISIONS OF THIS SECTION, INCLUDING THE LIMITATIONS IN SUBSECTION (4) OF THIS SECTION AND THE PENALTIES IN SUBSECTION (6) OF THIS SECTION REGARDING DISCLOSURE OF TAXPAYER INFORMATION.

SECTION 4. Appropriation - adjustments to 2014 long bill.
For the implementation of this act, the general fund appropriation made in the annual general appropriation act to the controlled maintenance trust fund created in section 24-75-302.5 (2) (a), Colorado Revised Statutes, for the fiscal year beginning July 1, 2014, is decreased by $3,433,710.

In addition to any other appropriation, there is hereby appropriated, out of any moneys in the general fund, not otherwise appropriated, to the department of revenue, for the fiscal year beginning July 1, 2014, the sum of $58,710, or so much thereof as may be necessary, for CITA

annual maintenance and support related to the implementation of this act.

In addition to any other appropriation, there is hereby appropriated, out of any moneys in the hazardous substance response fund created in section 25-16-104.6, Colorado Revised Statutes, and pursuant to section 25-16-303 (4) (c), Colorado Revised Statutes, not otherwise appropriated, to the department of public health and environment, for the fiscal year beginning July 1, 2014, the sum of $20,000, or so much thereof as may be necessary, for allocation to the hazardous materials and waste management division for contaminated site cleanups personal services costs related to the implementation of this act.

SECTION 5. Act subject to petition - effective date. This act takes effect at 12:01 a.m. on the day following the expiration of the ninety-day period after final adjournment of the general assembly (August 6, 2014, if adjournment sine die is on May 7, 2014); except that, if a referendum petition is filed pursuant to section 1 (3) of article V of the state constitution against this act or an item, section, or part of this act within such period, then the act, item, section, or part will not take effect unless approved by the people at the general election to be held in November 2014 and, in such case, will take effect on the date of the official declaration of the vote thereon by the governor.

Morgan Carroll Mark Ferrandino
PRESIDENT OF SPEAKER OF THE HOUSE THE SENATE OF REPRESENTATIVES

Cindi L. Markwell Marilyn Eddins
SECRETARY OF CHIEF CLERK OF THE HOUSE THE SENATE OF REPRESENTATIVES

APPROVED

John W. Hickenlooper
GOVERNOR OF THE STATE OF COLORADO

Colorado Department of Public Helth and Environment
Hazardous Materil and Waste Management Division

Appendix G

Brownfields Tax Credit Notification Requirements

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STATE OF COLORADO

John W. Hickenlooper, Governor
Larry Wolk, MD, MSPH
Executive Director and Chief Medical Officer

Dedicated to protecting and improving the health and environment of the people of Colorado

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Denver, Colorado 80246-1530
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Located in Glendale, Colorado

www.colorado.gov/cdphe

Colorado Department
of Public Health
and Environment

July 17, 2014

Colorado Brownfields Tax Credit Notification Requirements

On May 15, 2014, Governor Hickenlooper signed Senate Bill 14-073, reinstating the Colorado Brownfields Tax Credit, for properties which qualify under the Voluntary Cleanup Program. This Tax Credit is available for taxpayers and/or qualifying entities who perform environmental remediation associated with a new capital improvement or redevelopment projects. In order to qualify for the tax credit, applicants must submit a Voluntary Cleanup Plan (VCUP) to the Colorado Department of Public Health and Environment (CDPHE). VCUP applications submitted to CDPHE after January 01, 2014 may be eligible for the credit.

Qualifying environmental remediation costs are eligible for a 40% credit on the first $750,000, and 30% on the amount between $750,000 and $1,500,000. The maximum credit available is $525,000.

Applications must take the following steps to be eligible for state Brownfield Tax Credits:

- Applicants must meet in advance of applying for a Voluntary Cleanup Plan with the CDPHE Voluntary Cleanup Program.
- Applicant must identify declare the owner of the property who will be performing the voluntary cleanup and receiving the tax credit.
- Applicant must provide an environmental cost estimate for the project including the following:
- Project design costs for environmental remediation.
- Materials management cost (disposal fees, trucking, moving contaminated soils etc.).
- Vapor Mitigation costs (if applicable).
- Project certification and closure costs (analytical costs for confirmation of groundwater or soils etc.)
- Year project will be completed and applying for tax credit
- Total Project Redevelopment Cost (Environmental and Capital Improvement Costs)
- Estimate of post redevelopment property value.

Because there is a $3,000,000 fiscal note that limits the total amount of credit available per year, tax credits will be allocated on a first-come, first served basis.

Applicants will be required to receive a “No Action Determination” from the VCUP Program in order to receive a tax credit certification from CDPHE. To enable certification of eligible credits, CDPHE will require applicants to submit documentation of project environmental remediation costs, including invoices, cancelled checks (front and back), and other appropriate documentation. Once project costs are verified, CDPHE will issue a “No Action Determination” for the project, and a Tax Credit Certification Letter to the applicant and the Colorado Department of Revenue.