

DEPARTMENT OF ECOLOGY

F5107

IN THE MATTER OF THE COMPLIANCE BY)
LEICHER BROTHERS LAND RECLAMATION) NO. DE 86-S131
CORPORATION with Chapter 90.48 RCW)
and the Rules and Regulations of)
the Department of Ecology) AMENDED CONSENT ORDER
) December 14, 1987
) (Original Order April 7,
) 1987)

TO: Leichner Brothers Land Reclamation Corporation
911 Northeast 94th Avenue
Vancouver, Washington 98666

Jurisdiction

RCW 90.48.020 defines underground waters as waters of the state. RCW 90.48.080 provides it shall be unlawful for any person to throw, drain, run, or otherwise discharge into any of the waters of this state, or to cause, permit or suffer to be thrown, run, drained, allowed to seep or otherwise discharged into such waters any organic or inorganic matter that shall cause or tend to cause pollution of such waters according to the determination of the Director. Ecology has jurisdiction pursuant to RCW 90.48.120 to issue this Order to accomplish the purposes herein

Findings of Fact

Leichner Brothers Land Reclamation Corporation owns and operates a sanitary landfill located in Clark County, Washington, approximately four (4) miles northwest of Vancouver and approximately 1.5 miles north of Orchards. The landfill (also known as "the Site") lies in Section 4, Township 2 North, Range 2 East and in Section 33, Township 3 North, Range 2 East of the Willamette Meridian. The site is approximately 100 acres with

approximately 70 acres currently landfilled. It is bordered on the west by 94th Avenue, on the east by a residential area, on the south by the Koski farm and on the north by undeveloped area.

The Leichner Brothers Land Reclamation Corporation landfill is the only major landfill presently available within Clark County. The County has initiated a siting process for a new landfill. The estimated availability of the new landfill will be December 31, 1991.

A hydrogeologic study was conducted by Ecology and Environment, Inc. under contract with the Environmental Protection Agency (EPA) to perform Field Investigations of Uncontrolled Hazardous Waste Sites. In Leichner Brothers Landfill, Vancouver, Washington Final Report TDD 10-8012-02, May, 1981, two aquifers were identified. The upper alluvial perched zone was reported to have a piezometric surface between 190 and 200 feet MSL in the vicinity of the landfill. The Upper Troutdale confined aquifer was reported to have a piezometric surface between 160 and 190 feet MSL in the landfill vicinity, and ground water flows generally to the southwest. The confining layer south of the landfill between the water table (upper alluvial aquifer) and the Upper Troutdale may be partially discontinuous. Such discontinuities could provide a window for water from the upper alluvial aquifer to move directly into the Upper Troutdale.

Ground water monitoring results have indicated a degradation in quality. Secondary drinking water standards have been monitored by the health district. Statistical analysis

(Student's t-test) of the specific conductivity data taken since 1984 indicates statistically significant increase (at $P=0.01$) over background in three downgradient wells (monitoring wells labeled 3, 5 and Southwest). WAC 173-304-490(2)(i) keys corrective action into statistically significant increases. All three of these monitoring wells are off-site and two of them monitor the Upper Troutdale based on information collected at the site thus far. Specific conductivity is a function of dissolved solids concentration and is an indicator parameter for ionic contaminants.

Analyses of organic constituents in 1981 and 1985 indicated measurable concentrations of tetrachloroethylene, trichloroethylene, 1,2 trans dichloroethylene, and other chlorinated hydrocarbons in monitoring well 3, a downgradient off-site well. Concentrations of tetrachloroethylene were measured at 22, 24, and 26 ug/l in 1981, 1985, and 1986, respectively. These concentrations greatly exceed the EPA one in a million cancer risks from drinking water of 0.8 ug/l (Quality Criteria for Water 1986, EP 440/5-86-01).

Both the Upper Troutdale and upper alluvial aquifers provide drinking water for neighboring farms. The City of Vancouver has two well fields within two (2) miles of the landfill, one of which is 9000 feet southwest of the landfill office, in the apparent direction of ground water flow.

In order to request continuance of operations beyond November 27, 1989 Leichner Brothers Land Reclamation Corporation submitted a request for a variance from two of the Minimum

Functional Standards of chapter 173-304 WAC: 173-304-130(2)(j)(iii), the setback requirement; and WAC 173-304-460(3)(c), the liner requirement, to the jurisdictional health department, the Southwest Washington Health District. Ecology has informed the Southwest Washington Health District that it will not concur in the approval of the variance application and therefore the variance has not been granted per WAC 173-304-700(6).

In view of the foregoing and in accordance with RCW 90.48.120(2):

IT IS ORDERED THAT Leichner Brothers Land Reclamation Corporation shall, upon receipt of this Order, take appropriate action in accordance with the following instructions:

The objects of this Order are to:

1. assess the extent of ground water contamination, the rate of contaminant movement, and the concentrations of contaminants in the ground water due to the landfill and associated activity through literature review and field work;
 2. assess the effectiveness of the existing covers/caps through field work;
 3. assess the effectiveness of existing land application of contaminated surface water run-off as a treatment through literature review and field work;
 4. assess the present and future risks of landfill activities to human health and the environment;
 5. propose alternatives to mitigate contamination;
- and

6. assess the potential for continued operation of the landfill after the November 27, 1989, deadline for compliance with the Minimum Functional Standards (but in any event not later than December 31, 1991), conditioned upon the factors set forth in Section VI, below.

To implement these objectives, tasks I through VI below shall be completed.

Scope of Work

Within 15 business days of execution and receipt of this Order, contract with a qualified hydrogeological consultant to perform the investigation set forth below. The consultant shall be familiar with federal and state water quality, solid waste and hazardous waste laws and regulations. Leichner Brothers Land Reclamation Corporation shall provide written documentation to Ecology of the consultant's capability to conduct an investigation as identified in items I through IV. Leichner Brothers Land Reclamation shall undertake and complete the following requirements:

I. Minimum Scope of Work Requirements

Within 45 days of execution and receipt of the April 7, 1987 Order, submit for approval a scope of work which addresses, at a minimum:

A. Existing Data Review

1. Review waste disposal records documenting type, date, and location of waste disposal.
2. Diligently attempt to interview reasonably available past and present employees on waste disposal methods.

waste types, and quantities.

3. Present a review of and critique the quality of existing ground water monitoring data.

4. Assess data needs to achieve the goals of this Order.

Potential sources of information include the following reports (a comprehensive data and literature survey is required):

Ecology and Environment, Inc., May 1981 Report

Ecology and Environment, Inc., June 1982 Report

Southwest Washington Health District file data

Sweet Edwards, Inc., 1983 data

Donna Lacombe, University of Washington, 1982, M.S.
Thesis

B. Geologic and Hydrologic Factors

1. General geology, identification of perched and confined aquifers, including presence or absence of aquitards

- a. surface topographic maps
- b. geologic cross-sections and fence diagrams
- c. site map with well locations and assigned numbers

2. Hydrology of ground water flow system

- a. accurate piezometric surface maps
- b. field hydraulic conductivity measurements
- c. laboratory hydraulic conductivity measurements, as samples are available

3. Definition of extent of plume(s)

- a. isopleth maps
- b. rate of contaminant movement

4. Public and private well inventory update

C. Ground Water Analysis

1. Monitoring wells

a. locations and rationale for new monitoring wells

- (1) siting constraints
- (2) number of wells
- (3) aquifer cross contamination avoidance
- (4) analytical requirements

b. well construction and development

- (1) drilling methodology
- (2) number of dual completions/well depths
- (3) length and area of screening and size of screen openings
- (4) screen and casing materials
- (5) well development

c. data collection

- (1) field hydraulic conductivity testing and laboratory hydraulic conductivity testing, as samples are available
- (2) establish vertical control points for water level elevations
- (3) geophysical logging, as necessary
- (4) water and soil sampling and storage for future analysis
- (5) production well installation and pump testing to verify any interconnection

between the upper alluvial and Upper
Troutdale aquifers

2. Data needs

- a. identification of wells to be sampled
- b. parameters
 - (1) organic priority pollutants
 - (2) metals
 - (3) conventional parameters
 - (4) piezometric surface
- c. frequency of sampling

3. Sampling procedures

- a. Quality Assurance/Quality Control (QA/QC)
- b. sampling materials/instruments
- c. evacuation of borehole volumes
- d. equipment decontamination procedures
- e. chain of custody

4. Laboratory

- a. analytical methodology
- b. detection limits
- c. QA/QC
- d. completion times
- e. chain of custody

5. Safety

D. Existing landfill cover analysis

- 1. Random core samples to determine actual thickness
of bentonite layers
- 2. An agreed upon testing procedure to determine

field permeability of existing covers

3. Comparison of actual with theoretical effectiveness of covers (using HELP or agreed upon equivalent model)

E. Analysis of land applied contaminated surface water run-off

1. Characterization of land applied contaminated surface water run-off

a. organic priority pollutants

b. metals

c. conventional parameters, including but not limited to parameters listed in WAC 173-304-490

2. Actual treatment efficiency achieved, if contaminated surface water run-off application system is in use

3. Actual monitored hydraulic and contaminant loading rates

4. System design (as built drawings)

5. Literature review of treatment achievable at various loading rates for all detected leachate constituents

6. Potential impacts to ground water (as indicated by data gathered from soil core analyses or other approved methods)

F. Range of remedial action alternatives to be considered

G. Schedule

1. Propose schedules for the execution of activities outlined in Sections IA - F of this Order to commence no later than two months after execution and receipt of this Order and continue through April 15, 1988.

2. Propose schedules for completion of activities II and III of this Order to be completed no later than February 1, 1988 and April 15, 1988, respectively.

H. Ecology shall review the proposed scope of work identified in IA - F above within fifteen (15) business days of submission. If the Respondents wish to discuss development of the scope of work, Ecology will, if requested, meet with the Respondents to discuss the proposals for the scope of work prior to submission of the final scope of work.

II. Remedial Investigation

Within the schedule identified in the approved scope of work, complete required sampling and analysis and prepare a remedial investigation report for approval by Ecology. The report shall provide, in detail, required literature reviews, results of the sampling, an interpretation of the results with conclusions as to the level of risk the contamination poses to human health and the environment.

The risk assessment portion of the report shall contain an assessment of cancer risks to the public from inhalation, dermal contact, and oral routes and acute and chronic toxicity via the same routes. The risk assessment shall be completed in accordance with state and federal published risk analyses and health standards (e.g., Superfund Public Health Evaluation Manual, either Draft or Final version).

Ecology will provide access to information disclosable under the laws of the State of Washington which is pertinent to the remedial investigation, subject to public disclosure, and in the

custody and control of Ecology.

III Feasibility Study

Within the schedule identified in the approved scope of work, complete and submit to Ecology a feasibility study which thoroughly evaluates a comprehensive range of alternatives for remedial action. The range of alternatives shall be developed and selected based on discussions between Leichner Brothers and Ecology. The alternatives shall be selected based upon technological feasibility and reliability, effectiveness of minimization and mitigation of damage to, and protection of public health, welfare, and the environment. The report shall recommend to Ecology one of the alternatives identified in the feasibility study as appropriate for remedial action considering the cost-effectiveness of the remedy (i.e., the lowest cost alternative that is technologically feasible and reliable and which effectively mitigates and minimizes damage to and provides adequate protection of public health, welfare and the environment).

IV. Future Remedial Action

*MTCA action 89-5119 - part of
this section*

After the completion of items I-III above, and contingent upon Ecology's acceptance of the Remedial Investigation/ Feasibility Study, Ecology, Leichner Brothers Land Reclamation Corporation, the Southwest Washington Health District, City of Vancouver and Clark County shall meet to discuss remedial actions in addition to those set forth in Section V herein, which are deemed necessary to the protection of the public health or the environment. Ecology may involve any potentially liable party in

such discussions in accordance with applicable law. Should the parties agree to a final remedial action or clean-up remedy, the remedial action decision, with an implementation schedule, shall be included in a consent decree to be executed pursuant to the State Toxics Control Act, chapter 2, Laws of 1987, 3d Ex. Session. Should the parties not agree as to the extent of necessary remedial action, or should further site investigation be necessary, Ecology reserves all rights to take any action necessary to ensure an appropriate remedy is implemented at the site.

V. Interim Remedial Measures

Leichner Brothers Land Reclamation Corporation has undertaken and shall continue to carry out a series of interim remedial measures at the landfill. Each of those measures is listed below along with a date by which it will be completed.

1. Interim cover. A temporary 20 mil. plastic cover will be installed over those portions of the landfill not already covered by a bentonite cover. This cover will prevent to the extent possible the infiltration of precipitation into the landfill and minimize leachate generation. The plastic cover will be installed by April 15, 1988. The interim cover shall be maintained in good condition and repair pending its removal and installation of final cover.

2. Surface water management. A surface water management plan is being implemented to handle increased runoff from the temporary cover. It includes diking and berms on the north end of the landfill that divert storm water away from the waste in

place. A storm drain will be installed to carry storm water to a nearby drainage. The first phase will be completed by March 31, 1988. The second, storm drain phase, will be completed by July 31, 1988.

3. Gas system. The existing perimeter system has been expanded. By March 31, 1988, the entire north end flare system will be operational. The system will include interior gas extraction wells, a perimeter heater system and a temporary flare. By May 15, 1988 a state-of-the-art combuster will replace the temporary flare.

4. Property acquisition. One parcel of property, known as the Koski farm, was identified as necessary to safe landfill operation. An option to purchase that property has been acquired. The purchase decision will be made on or before August 24, 1989.

5. Water supply. As a long-term plan, Leichner Brothers Land Reclamation Corporation has volunteered to supply water to downgradient landfill neighbors whose wells might be adversely affected by landfill operations. Leichner Brothers Land Reclamation Corporation has agreed to connect any downgradient resident to the City of Vancouver water system. The City is in the process of connecting service for those residents who have executed the City's covenant of annexation and who have requested the alternate water supply.

VI. Closure of Landfill.

By this Order and in consideration of the Scope of Work being performed by Respondent, Respondent is allowed to operate

the landfill past the November 27, 1989 deadline for compliance with the Minimum Functional Standards. In no event, however, shall such operation continue beyond December 31, 1991.

Continued operation of the landfill beyond November 27, 1989 is expressly conditioned upon Respondent's compliance with certain requirements and Ecology's reservation of specific rights, as follows:

1. Respondent shall carry out the remedial measures set forth in this Amended Order.

2. Respondent shall fully close those areas of the landfill known as Modules I and II, as described in the master plan for Leichner Brothers Landfill, dated September 1987, upon reaching final grade, but no later than November 27, 1989, per all applicable regulations and standards. Module III shall be partially closed to facilitate surface water movement to the north sedimentation pond no later than November 27, 1989.

3. Ecology reserves the right, at any time prior to the closure of the landfill, to require implementation of remedial measures identified in the feasibility study or otherwise determined to be necessary to the protection of public health or the environment.

4. If Ecology determines that the remedial measures required under VI.3. above, are insufficient to mitigate the those impacts determined by Ecology to be a threat to the public health or the environment, then Ecology reserves the right to require termination of operations and commencement of closure of the entire landfill prior to December 31, 1991.

A. An extension of the schedules set forth herein shall be granted only when a request for an extension is submitted in a timely fashion and good cause exists for granting an extension. All extensions shall be requested in writing. The request shall specify the reason(s) the extension is needed. An extension shall only be granted for such period of time as Ecology determines is reasonable under the circumstances. A requested extension shall not be effective until approved by Ecology, which shall be confirmed in writing. Ecology shall act upon all written requests for extension in a timely fashion. It shall not be necessary to formally amend this order when a schedule extension is granted.

B. The burden shall be on the Respondent to demonstrate to the satisfaction of Ecology that the request for such extension has been submitted in a timely fashion and that good cause exists for granting the extension. Good cause includes, but is not limited to, the following:

1. Circumstances beyond the reasonable control and despite the due diligence of Leichner Brothers Land Reclamation including but not limited to (i) delays caused by unrelated third parties or Ecology, such as delays by Ecology in reviewing, approving, or modifying documents submitted by Respondent, or (ii) delays by other regulatory agencies of the state or federal government such as regulatory delays in approval of disposal rate increases to fund compliance with this Order.

2. Delays that are directly attributable to any changes in or need to comply with permit terms or conditions or

to appeals on or lack of a permit, concurrence, or approval (permit) needed to implement this Order, if Respondent filed a timely application for such permit;

3. Acts of God, including fire, flood, blizzard, extreme temperatures, volcanoes, storm, water conditions, or other unavoidable casualty; and

C. Neither increased costs of performance of the terms of the Order nor changed economic circumstances shall necessarily be considered circumstances beyond the reasonable control of the Respondent. In the event an extension(s) is granted pursuant to this section, such extension shall not affect the landfill closure date required pursuant to the terms of this Order.

D. Ecology may extend the schedules set forth herein for a period not to exceed sixty (60) days, except where an extension is needed as a result of:

1. Delays in the issuance of a necessary permit which was timely applied for or if necessary to comply with permit conditions; or

2. Judicial review of the issuance, non-issuance, or reissuance of a necessary permit; or

3. Other circumstances deemed exceptional or extraordinary by Ecology; or

4. The need to protect the environment or public health.

Ecology shall give the Respondent written notice in a timely fashion of any extensions granted pursuant to the Order. Ecology shall give respondent upon request a written explanation of any

denial or modification of an extension.

GENERAL TERMS OF CONSENT ORDER

1. In connection with this matter, the Respondents consent to comply in full with the Order issued herein pursuant to Chapter 90.48.120(2) RCW.

2. The provisions of this Order imposing duties upon the Respondents shall apply to and be binding upon Respondents.

3. Pursuant to Chapter 90.48 RCW, Ecology reserves all rights to take appropriate enforcement action including imposition of civil penalties for each day of noncompliance with this Order.

4. Nothing in this part shall be construed as prohibiting or in any way limiting the ability of Ecology under Chapter 90.48 RCW to require the implementation of interim mitigating measures prior to completion of the work anticipated by this Order or to take any action pursuant to existing laws at this site that is beyond the scope of this Order.

5. Notwithstanding compliance with the terms of this Order, the Respondents are not released from liability, if any, for abatement of any imminent and substantial endangerment to the public health, welfare, or the environment posed by this facility.

6. The terms of the Order may be formally amended only by written mutual agreement of the parties.

7. Ecology shall provide review comments, and engineering approval or disapproval letters within twenty (20) business days of the receipt of the document(s) submitted for review and

approval.

8. Based on information available at the outset of this investigation, and notwithstanding further evidence indicating significant adverse environmental or public health impacts, and so long as the respondents maintain compliance with this Order and have made a good faith effort to perform as required by this Order, Ecology will lodge a written objection with the United States Environmental Protection Agency (EPA) should EPA attempt to nominate the Leichner Landfill to the National Priority List.

9. No conveyance of title, easement or other interest in any portion of the site owned by Leichner Brothers Land Reclamation Corporation shall be made without provision for continued operation and maintenance of any containment system, treatment system, and monitoring system installed or implementation of that pursuant to this Order. Until the remedial program described in this Order is completed, Leichner Brothers Land Reclamation Corporation shall notify Ecology by registered mail, at least ninety (90) days prior to any conveyance of any interest in property that in whole or part is located within the site.

10. At all reasonable times provide Ecology personnel and contractors the right of entry to the property for inspection, sampling, and activities associated with the fulfillment of the Order issued herein.

11. By the following signatures, the Respondents hereby

consent to the entry of the Order on the terms and conditions herein stated.

DATED this 13th day of January, 1988.

LEICHER BROTHERS LAND RECLAMATION CORPORATION

By Oliver Lechner
its Pres

STATE OF WASHINGTON DEPARTMENT OF ECOLOGY

By Clark Haberman
Clark Haberman
Regional Manager
Southwest Regional Office