

**THE APPLICATION OF WASTE FACILITIES, INC. FOR A PERMIT FOR A TREATED OIL AND GAS WASTE PIT, WFI CHERRY PIT NO. 1, JIM WELLS COUNTY, TEXAS**

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**Heard by:** Margaret Allen, Technical Hearings Examiner  
Scott Petry, Hearings Examiner

**Procedural history**

Application received: February 12, 2002  
Protest received: August 7, 2002  
Hearing requested: May 6, 2002  
Hearing held: September 30 and November 6, 2002  
Closing statements received: January 27 and February 10, 2003  
Proposal for decision issued: March 27, 2003

**Appearances**

Applicant

Stephen Fenoglio  
J. Fletcher Kelly  
Jeff Cannon

Representing

Waste Facilities, Inc.

Protestants

Benny Clegg	Himself
Roel Perez	Himself
Alfonso Suarez	Himself
Rodolfo Garcia	Himself

**EXAMINERS' REPORT AND PROPOSAL FOR DECISION**

**STATEMENT OF THE CASE**

Waste Facilities, Inc., ("WFI") is seeking a permit for its Cherry Pit No. 1 to allow it to dispose of treated oil and gas wastes. The Environmental Services Section of the Commission's Oil & Gas Division ("ES") provided a draft permit should the examiners recommend approval. ES recommends a fourth monitor well not proposed by WFI in its application.

This application is protested by four offset landowners: Benny Clegg, Roel Perez, Alfonso Suarez and Rodolfo Garcia ("protestants"), who are concerned about the protection of fresh water and their property values.

**DISCUSSION OF THE EVIDENCE**

Applicant's evidence

The Cherry Pit No. 1 will be on a 90-acre property leased from the estate of W.M. Laughlin and Laughlin Partners Limited. This property already has several caliche pits, the largest of which is approximately 17' below grade. Only the western half of this largest pit, which covers about 20 acres, will operate as the Cherry Pit No. 1. Use of any other pits on this property would have to be separately permitted by the Railroad Commission.

WFI operates a landfarm facility near Premont, Texas, under Permit LT-0078, where low-chloride oil and gas waste is remediated. WFI plans to move treated waste that has met the closure requirements of that pit to its new Cherry Pit No. 1. This will allow continued use of the landfarm facility near Premont.

The waste originally accepted at the landfarm, under Permit LT-0078, had a chloride concentration less than 5000 mg/l, and consisted of:

non-injectable, water-based drilling fluid and the associated cuttings; non-reclaimable oil-based drilling fluids and the associated cuttings; non-reclaimable, non-hazardous tank bottoms from gas plants, crude oil reclamation plants and crude oil production/separation facilities; non-injectable, non-hazardous waste material from produced water collecting pits; produced formation sand; and non-hazardous soil contaminated with produced water or crude oil.

The waste at the landfarm is deposited in cells and a particular cell cannot be 'closed' until the waste in it has been tested to ensure that it meets the Railroad Commission standards. WFI proposes to move waste from 'closed' cells to the Cherry Pit for permanent disposal. None of the waste removed from the landfarm can be liquid or semi-liquid, and personnel at the Cherry Pit will take a representative sample from each 50 cubic yards of waste (about every second truck load) of all waste moved to the Cherry Pit and subject it to the paint filter test<sup>1</sup>. WFI will generate and retain a waste manifest detailing the date and amount of waste moved to the Cherry Pit and a summary total will be submitted to the Commission semi-annually.

Access to the Cherry Pit No. 1 will be through a gate which will be locked when the facility is unattended. The site will be fenced and there will be a 50' buffer between the pit boundary and any site boundary. One to 20 truckloads per day are expected (20 to 400 cubic yards of waste). In addition to using the paint filter test, on-site personnel will test for chloride concentration and use the retort method to ensure that the hydrocarbon content ("TPH") is less than 1%.

WFI believes the rest of the conditions that the waste must meet before entering the Cherry Pit can be satisfied by sampling the waste at the landfarm under Permit LT-0078 before it leaves that

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<sup>1</sup> In the paint filter test, also known as EPA Method 9095, a paint filter is placed in a two-inch funnel. The filter has holes of a certain micron-size as designated by the EPA. A few grams of the waste material is placed on the filter and allowed to sit there for a short period of time. If nothing drips through the filter in that time, the material passes the test. It is intended to demonstrate that there are no free liquids in the solid waste.

facility. Each cell in the landfarm under Permit LT-0078 contains about 2000 cubic yards and a composite sample of an individual cell is taken before this cell can be ‘closed’. An outside laboratory will test samples from closed cells in the landfarm for TPH using the method required by the Commission, and will also test the waste for SAR<sup>2</sup> and various metals (arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, molybdenum, nickel, selenium, vanadium and zinc).

WFI would like to amend the acceptable limits for four metals from those required in the draft permit for the Cherry Pit. The draft order for waste to be accepted at the Cherry Pit proposes more stringent requirements than those for waste leaving the source pit under Permit LT-0078. The following table shows the proposed and requested limits for arsenic, chromium, lead and mercury:

<b>Metal</b>	<b>Permit LT-0078 limit and requested limit</b>	<b>Draft permit limit for Cherry Pit</b>
Arsenic	41 mg/kg	10 mg/kg
Chromium	1000 mg/kg	100 mg/kg
Lead	300 mg/kg	100 mg/kg
Mercury	20 mg/l	10 mg/l

WFI has already analyzed a sample of waste from a closed cell under permit LT-0078 for contaminants, and the sample met the required standards for closure. It also met all standards proposed by the Commission in the draft permit, including those for arsenic, chromium, lead and mercury.

The surface geology in the area consists of windblown silts resting on Tertiary sediments. The near-surface soil is well-drained loam that formed over caliche beds. The underlying material is strongly-cemented caliche that contains solution channels. The surface soils have moderate to high permeability. Low permeability clay underlies the surface at about five feet. The existing caliche pit is 17' deep and has already been excavated into the low permeability clay. According to WFI, most water wells in this area are completed in the Goliad Formation which is 150' to 200' below the surface. There are small accumulations of near-surface groundwater in the Lissie Formation but these have a relatively high chloride content, and groundwater in the deeper Goliad Formation is fresher.

This property has heavy brush around the caliche pits. The surrounding area is used for farming, grazing and residences. WFI plans to use three wells it has already drilled to monitor for any waste leaving the Cherry Pit underground. Monitoring Well No. 1 is northwest of the pit, Monitoring Well No. 2 is on the southeast side, and Well No. 3 is on the very southern perimeter of the proposed pit. The closest water well is at a house 300' south of the Cherry Pit, and Monitoring Well No. 3 is between this water well and the pit.

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<sup>2</sup> Sodium Absorption Ratio is a measure of salt buildup in the soil and future agricultural usefulness of the soil.

The first samples will be taken from the monitoring wells before any waste is disposed of. The draft permit then requires testing the monitoring wells quarterly. Each sample will note the water level, pH, conductivity, turbidity, well condition and site condition. Water samples will be analyzed for benzene, TPH, TDS (total dissolved solids) and chlorides. WFI would like any permit granted to be amended to require quarterly testing for the first year and annual testing thereafter.

WFI measured the top of the water table in its three monitoring wells two weeks apart and mapped the piezometric (equal potential) surface under the Cherry Pit. The groundwater is about 60' below ground level and its gradient slopes gently from the northwest to the southeast. Monitoring Well No. 1 is located updip from the pit, and therefor will monitor groundwater that is unaffected by pit operations. Monitoring Well Nos. 2 and 3 are down gradient from the facility, and should show any release from the facility.

The draft permit requires that WFI drill a fourth monitoring well along the northeast side of the pit, about 100' east of Cell No. 5. WFI does not believe this fourth monitoring well is necessary because of the low groundwater gradient. Proposed Monitoring Well No. 4, as shown in the draft permit, is outside WFI's lease, and WFI testified that its location would have to be moved westward to the boundary of Cell No. 5 to stay within its lease. WFI also argues that monitoring wells in general need be no closer than 800' to 1000' apart. Even when Cell No. 6, the northernmost cell is being used, Monitoring Well No. 2 will be less than 800' away.

Soil borings from the monitoring wells and from within the pit were tested for permeability. The bore holes ranged from to 48' to 88' deep and all found dry rock. The minimum amount of clay penetrated underneath the pit was 28'. The highest permeability noted in the clay layer was 1.7 E-07 cm/second (equivalent to 0.00017 millidarcies), about the permeability of most liners. According to WFI, the standard to contain industrial or municipal waste requires a liner two to three feet thick with a permeability of 10 E-7 (0.0001 md). Even the waste to be disposed of in the Cherry Pit appears less permeable than the average liner. When WFI tested the permeability of a sample of treated waste from one of the cells in the landfarm it was only 5.7 E-8 cm/second (.000057 md).

The Cherry Pit No. 1 will be divided into six cells which will be filled sequentially from south to north. Cell No. 1 will be at the southern end of the pit and additional cells will continue northward in two-acre increments. Initially, the interior berms between the cells will be 24' wide and 4' high, for a slope ratio of 3:1. Eventually, the berms will be raised to 12' high, while still maintaining the same slope ratio. At all times there will be two feet of freeboard between the waste and the ground surface. An additional two-foot berm will be constructed around the pit boundary at natural grade to contain storm water. It is expected to take 3 to 6 years to fill the pit with 1,816,697 barrels of waste.

Most rainwater should evaporate. The average rainfall is 25" per year and the average evaporation rate is 57" per year. The most rainfall reported for a 24-hour period during the last 25 years was 8-1/2 inches, according to WFI. Even if a cell were full of waste during such an event, 15" freeboard would remain between the top of the rainwater and the top of the berms. If a large amount of rain falls that cannot readily evaporate, water will be pumped via a vacuum truck and disposed of at an authorized facility. None of the landfarm area is within the 100-year flood plain.

When operations cease, WFI testified that the berms around each cell will be leveled and the pit covered with two feet of topsoil and seeded. Rule 78(r)(1)(A)(i) and Rule 78(r)(4)(A) require the applicant for a new commercial facility to provide financial security equal to or greater than the maximum amount necessary to close the facility. The closure costs are estimated at \$22,487. After closure, the site will be monitored quarterly for the first year to ensure no damage or subsidence has occurred. The site will then be monitored annually for four more years.

Notice of this application was published in the Alice Echo, a newspaper of general circulation in Jim Wells County, on June 16 and 23, 2002, as described in Rule 8(d)(6)(C). The Commission notified WFI, on August 1, 2002, that the pit application was complete. The Commission has already issued WFI a similar permit for its Rancho Nuevo Facility to allow the disposal of non-hazardous oil and gas waste that was treated under landfarm permit No. LT-0078.

Protestant's evidence

The protestants showed a number of errors in WFI's application. Several of the maps submitted do not indicate the correct location of the proposed pit within WFI's lease. Also several of the maps show the lease located along County Road 435 while the correct County Road is 425. The protestants also pointed out that the oilfield waste manifests, used for every load of waste at the landfarm, have an address and phone number that have been incorrect for several years.

The protestants complained that WFI did not know the names of all offset landowners and therefor did not provide adequate notice. They do not believe that WFI made a diligent search for the locations of all water wells in the area. One of the protestants, Rodolfo Garcia, asserts that he has a water well completed at 120', that is used by livestock.

Inspection reports were introduced into evidence that show WFI has had several violations at its landfarm, operating under Permit LT-0078, where WFI placed unauthorized waste in the facility. This landfarm is the source of the waste to be deposited in the current application and if unauthorized waste is placed in the landfarm, it could be moved to the Cherry Pit. The protestants also believe that WFI's personnel are not adequately trained in the handling of oil and gas waste. The protestants are also worried about potential odor from the Cherry Pit, and are concerned that this waste facility will reduce their property value.

**EXAMINERS' OPINION**

The examiners believe that this is a suitable location for the disposal of treated oil and gas waste. Under the standards of Permit LT-0078, the material that will be deposited here has little potential to contaminate surface or subsurface water. The unauthorized material in the landfarm noted by the Commission's inspection reports consisted of 5 gallon plastic buckets and black poly liners. Such items are readily spotted, non-toxic and do not pose the same hazard as chemical components that cannot easily be removed.

The clay layer underlying the facility does have low permeability which should prevent the movement of any leachate outside the facility. WFI argued that the low groundwater gradient should

make a fourth monitoring well unnecessary. Actually, the low gradient means that a considerable amount of leachate could pool underneath the pit before it would be noticed in a monitoring well 800' away.

WFI may be correct that ground water less than 250' deep is of poor quality for drinking. However, according to the protestants, groundwater from a depth of 120' is used by livestock and should be considered of usable-quality. Because of the number of residences and water wells near the facility, the examiners agree with ES that a fourth monitoring well along the east side of the pit is necessary. While ES's proposed Monitoring Well No. 4 is outside WFI's lease, it is possible to locate a fourth monitoring well within WFI's lease to the east of Cell 5. The examiners believe that this additional monitoring well is necessary to ensure protection of the ground water.

The other objections that WFI has raised to the draft permit have little merit. The maximum permitted levels of arsenic, chromium, lead and mercury in the draft permit are the same as those agreed to by WFI in its Permit No. P010957. This permit is for WFI's Rancho Nuevo facility which is already receiving treated waste from WFI's landfarm Permit LT-0078.

#### **FINDINGS OF FACT**

1. At least ten (10) days' notice of the application was issued to all persons entitled to notice.
  - a. Notice of this application by Waste Facilities, Inc., ("WFI") for a disposal pit was mailed to all offset surface owners on February 7, 2002.
  - b. Notice of the application was published in the Alice Echo, a newspaper of general circulation in Jim Wells County, on June 16 and 23, 2002.
  - c. Notice of the hearing was issued by the Commission to all persons entitled to notice on September 13, 2002.
2. WFI's lease comprises about 90 acres and the proposed Cherry Pit will occupy the largest existing caliche pit on the property.
3. The proposed Cherry Pit No. 1 will receive treated oil and gas waste from WFI's landfarm facility near Premont, Texas, which meets the closure requirements of landfarm Permit LT-0078.
4. Before being removed from the site permitted under LT-0078, the treated waste will be tested to ensure that pH, TPH (hydrocarbon content), SAR (sodium absorption ratio), electrical conductivity and content of various metals<sup>3</sup> meet the closure requirements of Permit LT-0078.
5. Waste coming into the Cherry Pit will be tested on site by the paint filter method and only dry

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<sup>3</sup> Arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, molybdenum, nickel, selenium, vanadium and zinc.

- waste with a low chloride content will be accepted.
6. The treated waste will not endanger usable-quality surface and subsurface water, as long as the conditions in the attached permit are met.
  7. The interior berms between the six cells of the Cherry Pit will eventually be raised to a height of 12', maintaining a 3:1 slope; and there will be two feet of freeboard between the ground surface and the waste at all times.
  8. Storm water will be contained within a two-foot berm around the pit boundary that will be constructed at natural grade.
  9. Any storm water not expected to evaporate quickly may be hauled to an approved disposal well.
  10. There is at least 28' of clay underlying the proposed facility that has a very low permeability (0.000017 md).
  11. The proposed landfarm is located outside the 100-year flood plain according to a map prepared by the Federal Energy Management Agency.
  12. The proposed landfarm includes no land that could be classified as wetlands under federal standards.
  13. The applicant will provide financial security equivalent to the closure costs of \$22,487, prior to beginning operations at the disposal pit.
  14. Quarterly samples from four monitoring wells located to the north, east, southeast and south of the disposal pit will ensure that no leachate escapes from underneath the pit.

#### **CONCLUSIONS OF LAW**

1. Proper notice was given to all necessary parties as required by Statewide Rule 8(d)(6)(C) [Tex. R.R. Comm'n, 16 TEX. ADMIN. CODE § 3.8(d)(6)(C)] and other applicable statutory and regulatory provisions.
2. All things necessary to give the Commission jurisdiction to decide this matter have been performed or have occurred.
3. A Commission permit is required under Statewide Rule 8 to dispose of oil and gas wastes, other than on the same lease where the wastes were generated.
4. The applicant has established that the method of oil and gas waste disposal will not result in pollution of surface or subsurface useable quality water and will not result in the waste of oil, gas, or geothermal resources.
5. Applicant has provided adequate financial security as required by Statewide Rule 78(r) [Tex. R.R.

Comm'n, 16 TEX. ADMIN. CODE § 3.78(r)] and other applicable statutory and regulatory provisions.

**EXAMINERS' RECOMMENDATION**

Based on the above findings of fact and conclusions of law, the examiners recommend that the application of Waste Facilities, Inc., to use the Cherry Pit No. 1 for disposal of treated oil and gas waste be approved, as per the attached Final Order and Permit.

Respectfully submitted,

Scott Petry  
Hearings Examiner

Margaret Allen  
Technical Hearings Examiner

Date of Commission Action\_\_\_\_\_