U.S. ENVIRONMENTAL PROTECTION AGENCY

UNDERGROUND INJECTION CONTROL PERMIT

CLASS I NONHAZARDOUS

PERMIT NUMBER MI-165-1I-0001

LEELANAU FRUIT COMPANY

BUCKLEY, MICHIGAN

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

U.S. ENVIRONMENTAL PROTECTION AGENCY
UNDERGROUND INJECTION CONTROL PERMIT: CLASS I NON-HAZARDOUS

Permit Number: MI-165-1I-0001

Facility Name: Fee No. 1

Pursuant to the provisions of the Safe Drinking Water Act, as amended 42 U.S.C. §§300f et seq., (commonly known as the SDWA) and implementing regulations promulgated by the U.S. Environmental Protection Agency (EPA) at Parts 124, 144, 146, and 147 of Title 40 of the Code of Federal Regulations (40 C.F.R.),

Leelanau Fruit Company of Suttons Bay, Michigan

is hereby authorized to continue operation of an existing Class I non-hazardous injection well located in Michigan, Wexford County, T24 N, R11 W, Section 7, NW Quarter Section, for injection into the Traverse Limestone, Bell Shale, and Dundee Limestone at depths between 2035 and 2921 feet relative to Kelly bushing, upon the express condition that the permittee meet the restrictions set forth herein. The injection of any hazardous fluid as specified in 40 C.F.R. Part 261 is prohibited.

All references to Title 40 of the Code of Federal Regulations (40 C.F.R.) are to all regulations that are in effect on the date that this permit becomes effective. The following attachments are incorporated into this permit: A, B, C, D, E, and F.

This permit shall become effective on _____, and shall remain in full force and effect during the life of the permit, unless this permit is revoked and reissued, terminated or modified pursuant to 40 C.F.R. §§144.39, 144.40, or 144.41.

This permit and authorization to inject shall expire at midnight on_____, unless terminated prior to the expiration date.

Signed and Dated: _____

DRAFT

_____
Tinka G. Hyde
Director, Water Division

PART I
GENERAL PERMIT COMPLIANCE

A. EFFECT OF PERMIT

The permittee is allowed to engage in underground injection in accordance with the conditions of this permit. Notwithstanding any other provisions of this permit, the permittee authorized by this permit shall not construct, operate, maintain, convert, plug, abandon, or conduct any injection activity in a manner that allows the movement of injection, annulus or formation fluids into underground sources of drinking water (USDWs), if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 C.F.R. Part 141 or may otherwise adversely affect the health of persons. Any underground injection activity not specifically authorized in this permit is prohibited. For purposes of enforcement, compliance with this permit during its term constitutes compliance with Part C of the Safe Drinking Water Act (SDWA). Such compliance does not constitute a defense to any action brought under Section 1431 of the SDWA, or any other common or statutory law other than Part C of the SDWA. Issuance of this permit does not convey property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of State or local law or regulations. Nothing in this permit shall be construed to relieve the permittee of any duties under applicable regulations.

B. PERMIT ACTIONS

1. Modification, Revocation and Reissuance, and Termination - The Director of the Water Division of EPA Region 5, hereinafter, the Director, may, for cause or upon request from any interested person, modify, revoke and reissue, or terminate this permit in accordance with 40 C.F.R. §§ 144.12, 144.39, and 144.40. Also, the permit is subject to minor modifications as specified in 40 C.F.R. § 144.41. The filing of a request for a permit modification, revocation and reissuance, or termination, or the notification of planned changes, or anticipated noncompliance on the part of the permittee does not stay the applicability or enforceability of any permit condition.

2. Transfer of Permits - This permit is not transferable to any person except in accordance with 40 C.F.R. § 144.38.

C. SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby.

D. CONFIDENTIALITY

In accordance with 40 C.F.R. Part 2 and Section 144.5, any information submitted to the EPA pursuant to this permit may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, the EPA may make the information available to the public without further notice. If a claim is asserted, the validity of the claim will be assessed in accordance with the procedures in 40 C.F.R. Part 2 (Public Information). Claims of confidentiality for the following information will be denied:

1. The name and address of the permittee; and

2. Information which deals with the existence, absence or level of contaminants in drinking water.

E. DUTIES AND REQUIREMENTS

1. Duty to Comply - The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Safe Drinking Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application; except that the permittee need not comply with the provisions of this permit to the extent and for the duration such noncompliance is authorized by an emergency permit issued in accordance with 40 C.F.R. § 144.34.

2. Penalties for Violations of Permit Conditions - Any person who violates a permit requirement is subject to civil penalties and other enforcement action under the SDWA. Any person who willfully violates permit conditions may be subject to criminal prosecution.

3. Continuation of Expiring Permits

   (a) Duty to Reapply - If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must submit a complete application for a new permit at least 180 calendar days before this permit expires.

   (b) Permit Extensions - The conditions of an expired permit may continue in force in accordance with 5 U.S.C. 558(c) and 40 C.F.R. § 144.37.

   (c) Effect - Permits continued under 5 U.S.C. 558(c) and 40 C.F.R § 144.37 remain fully effective and enforceable.

   (d) Enforcement - When the permittee is not in compliance with the conditions of the expiring or expired permit, the Director may choose to do any or all of the following:

(1) Initiate enforcement action based upon the permit which has been continued;

(2) Issue a notice of intent to deny the new permit. If the permit is denied, the owner or operator would then be required to cease the activities authorized by the continued permit or be subject to enforcement action for operation without a permit;

(3) Issue a new permit under part 124 with appropriate conditions; or

(4) Take other actions authorized by these regulations.

(e) State Continuation - An EPA-issued permit does not continue in force beyond its expiration date under Federal law if at that time a State has primary enforcement responsibility under the SDWA. A State authorized to administer the UIC program may continue either EPA or State-issued permits until the effective date of the new permits, if State law allows. Otherwise, the facility or activity is operating without a permit from the time of expiration of the old permit to the effective date of the State-issued new permit. Furthermore, if the State does not continue the EPA permit upon obtaining primary enforcement responsibility, the permittee must obtain a new State permit or be authorized to inject by State rule. Failure to do so while continuing to operate the well constitutes unauthorized injection and is a violation subject to enforcement action.

4. Need to Halt or Reduce Activity Not a Defense - It shall not be a defense for the permittee in an enforcement action to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

5. Duty to Mitigate - The permittee shall take all timely and reasonable steps necessary to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.

6. Proper Operation and Maintenance - The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control and related appurtenances which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this permit.

7. Duty to Provide Information - The permittee shall furnish to the Director, within a time specified, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

8. Inspection and Entry - The permittee shall allow the Director or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

(a) Enter, at reasonable times, upon the permittee's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this permit;

(b) Have access to and copy, at reasonable times, any records that are kept under the conditions of this permit;

(c) Inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

(d) Sample or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the SDWA, any substances or parameters at any facilities, equipment or operations regulated or required under this permit.

9. Records

(a) The permittee shall retain records and all monitoring information, including all calibration and maintenance records and all original chart recordings for continuous monitoring instrumentation and copies of all reports required by this permit for a period of at least five (5) years from the date of the sample, measurement or report, unless these materials are submitted to the Director as part of reporting requirements under this permit.

(b) The permittee shall maintain records of all data required to complete the permit application form for this permit and any supplemental information submitted under 40 C.F.R. §§ 144.27, 144.28, and 144.31 for a period of at least five (5) years from the date the permit application was signed.

(c) The permittee shall retain records concerning the nature and composition of all injected fluids until three (3) years after the completion of plugging and abandonment of this injection well.

(d) The retention period specified in Part I(E)(9)(a) through (c) of this permit may be extended by request of the Director at any time. The permittee shall continue to retain records after the retention period specified in Part I(E)(9)(a) through (c) of this permit or any requested extension thereof expires unless the permittee delivers the records to the Director or obtains written approval from the Director to discard the records.

(e) Records of monitoring information shall include:

(1) The date, exact place, and time of sampling or measurements;

(2) The name(s) of individual(s) who performed the sampling or measurements;

(3) A precise description of both sampling methodology and the handling of samples;

(4) The date(s) analyses were performed;

(5) The name(s) of individual(s) who performed the analyses;

(6) The analytical techniques or methods used; and

(7) The results of such analyses.

10. Monitoring - Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. Sampling and analysis shall comply with the specifications of the Waste Analysis Plan required by Part II (C)(3) of this permit. Monitoring results shall be reported at the intervals contained in Part II (D)(1) through (3) and Part III (A) of this permit.

(a) Sampling methods – The permittee shall use the methods described in EPA's "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods" (SW-846, available on EPA's website) or equivalent methods approved by the Director to sample the injected fluids.

(b) Analytical methods – The permittee shall use applicable analytical methods described in Table I of 40 CFR 136.3 or in certain circumstances by other methods that have been approved by the Director to monitor the nature of the injected fluids.

11. Signatory Requirements - All reports or other information required to be submitted by this permit or requested by the Director shall be signed and certified in accordance with 40 C.F.R. § 144.32.

12. Reporting Requirements

(a) Planned Changes - The permittee shall give written notice to the Director, as soon as possible, of any planned physical alterations or additions to the permitted facility.

(b) Anticipated Noncompliance - The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

(c) Compliance Schedules - Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance

schedule of this permit shall be submitted by the permittee no later than thirty (30) calendar days following each schedule date.

(d) Twenty-four Hour Reporting

(1) The permittee shall report to the Director any permit noncompliance which may endanger human health or the environment. See, e.g., Part I(G)(5) of this permit. Any information shall be provided orally within twenty-four (24) hours from the time the permittee becomes aware of the circumstances. Such reports shall include, but not be limited to the following information:

(i) Any monitoring or other information which indicates that any contaminant may cause an endangerment to a USDW;

(ii) Any noncompliance with a permit condition, or malfunction of the injection system, which may cause fluid migration into or between USDWs;

(iii) Any failure to maintain mechanical integrity.

(2) A written submission shall also be provided within five (5) working days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and, if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate and prevent recurrence of the noncompliance.

(e) Other Noncompliance - The permittee shall report all other instances of noncompliance not otherwise reported at the time monitoring reports are submitted. The reports shall contain the information listed in Part I(E)(12)(d)(2) of this permit.

(f) Other Information - When the permittee becomes aware of failure to submit any relevant facts in the permit application or that incorrect information was submitted in a permit application or in any report to the Director, the permittee shall submit such facts or corrected information within ten (10) calendar days.

(g) Report on Permit Review - Within thirty (30) calendar days of receipt of this permit, the permittee shall certify to the Director that he or she has read and is personally familiar with all terms and conditions of this permit.

F. PLUGGING AND ABANDONMENT

1. Notice of Plugging and Abandonment - The permittee shall notify the Director at least sixty (60) calendar days before conversion or abandonment of the well. At the discretion of the Director, a shorter notice period may be allowed.

2. Plugging and Abandonment - The permittee must receive the approval of the Director before plugging the well and shall plug and abandon the well consistent with 40 C.F.R. §§ 144.52(a)(6) and 146.10, as provided for in the Plugging and Abandonment Plan contained in Part III(B) of this permit. Within sixty (60) calendar days after plugging a well, the permittee shall submit a Plugging and Abandonment report to the Director. The report shall be certified as accurate by the permittee and by the person who performed the plugging operation (if other than the permittee), and shall consist of either:

   (a) A statement that the well was plugged in accordance with the Plugging and Abandonment Plan previously approved by the Director; or

   (b) If the actual plugging differed from the approved plan, a statement defining the actual plugging and explaining why the Director should approve such deviation. If the Director determines that a deviation from a previously approved plan may endanger underground sources of drinking water, the permittee shall replug the well as required by the Director.

3. Temporary Abandonment - If the permittee ceases injection into the well for more than 24 consecutive months, the well is considered to be in temporary abandoned status. Within 30 days after the end of the 24th consecutive month of temporary abandonment, the permittee shall plug and abandon the well unless the permittee:

   (a) Provides notice to the Director within 30 days of the end of the 24th consecutive month of temporary abandonment, and

   (b) Describes actions or procedures, satisfactory to the Director, that the owner or operator will take to ensure that the well will not endanger USDWs during the period of temporary abandonment. These actions and procedures shall include compliance with the technical requirements applicable to active injection wells unless waived by the Director.

During any periods of temporary abandonment or disuse, the well shall be tested to ensure that it maintains mechanical integrity. Internal mechanical integrity (Part G(2)(a)) shall be tested annually. External mechanical integrity (Part G(2)(b)) shall be tested every two years. If the well loses mechanical integrity prior to the next test due date, the well must either be plugged or repaired and retested within 30 days of losing mechanical integrity. The permittee shall continue to comply with the conditions of this permit, including all monitoring and reporting requirements according to the frequencies outlined in the permit.

4. Revision of Plugging and Abandonment Plan - If the permittee finds it necessary to change a Plugging and Abandonment Plan, a revised plan shall be submitted to the Director for approval at the time of the next monthly report.

5. Standards for Well Closure - Prior to plugging and abandoning the well:

   (a) The permittee shall observe and record the pressure decay for a time specified by the Director and shall report this information to the Director.

   (b) The permittee shall conduct appropriate mechanical integrity testing to ensure the integrity of that portion of the long string casing and cement that will be left in the ground after closure. Testing methods may include:

      (1) Pressure tests with liquid;

      (2) Noise, temperature, pipe evaluation, or cement bond logs; or

      (3) Any other test required by the Director.

   (c) Prior to well closure, the well shall be flushed with a buffer fluid.

G. MECHANICAL INTEGRITY

1. Standards - The injection well must have and maintain mechanical integrity consistent with 40 C.F.R. § 146.8(a)(1) and (2). Mechanical integrity demonstrations must be witnessed by an authorized representative of the Director, unless the Director or authorized representative informs the permittee that he or she is not able to witness a given test.

2. Periodic Mechanical Integrity Testing [§146.8] - The permittee shall conduct the mechanical integrity testing as follows:

   (a) Long string casing, injection tubing and annular seal shall be tested by means of an approved pressure test in accordance with 40 C.F.R. § 146.8(b)(2). This test shall be performed upon completion of this well, and at least once every twelfth month beginning with the date of the last approved demonstration and whenever there has been a well workover in which tubing is removed from the well, the packer is reset, or when loss of mechanical integrity becomes suspected during operation;

   (b) An approved temperature, noise, oxygen activation, or other approved log shall be run at least once every sixty (60) months from the date of the last approved demonstration to test for movement of fluid along the bore hole. The Director may require such tests whenever the well is worked over. The permittee must submit logging procedures to the Director for approval before running logs for the purpose of meeting this requirement.

(c) The permittee may request the Director to use any other test approved by the Director in accordance with the procedures in 146.8(d).

3. Prior Notice and Reporting - The permittee shall notify the Director of his or her intent to demonstrate mechanical integrity at least thirty (30) calendar days prior to such demonstration. At the discretion of the Director a shorter time period may be allowed. Reports of mechanical integrity demonstrations which include logs must include an interpretation of results by a knowledgeable log analyst. The permittee shall report the results of a mechanical integrity demonstration within forty-five (45) calendar days after completion thereof.

4. Gauges - The permittee shall calibrate all gauges used in mechanical integrity demonstrations to an accuracy of not less than one-half (0.5) percent of full scale, prior to each required test of mechanical integrity. A copy of the calibration certificate shall be submitted to the Director or his or her representative at the time of demonstration and every time the gauge is calibrated. The gauge shall be marked in no greater than five (5) psi increments.

5. Loss of Mechanical Integrity - If the permittee or the Director finds that the well fails to demonstrate mechanical integrity during a test, or fails to maintain mechanical integrity during operation, or that a loss of mechanical integrity as defined by 40 C.F.R. § 146.8(a)(1) and (2) is suspected during operation, the permittee shall halt the operation immediately and follow the reporting requirements as directed in Part I(E)(12) of this permit. The permittee shall not resume operation until mechanical integrity is demonstrated and the Director gives approval to recommence injection.

6. Mechanical Integrity Testing on Request From Director - The permittee shall demonstrate mechanical integrity at any time upon written notice from the Director.

H. FINANCIAL RESPONSIBILITY

1. Financial Responsibility - The permittee shall maintain financial responsibility and resources to close, plug, and abandon the underground injection operation in a manner consistent with 40 C.F.R. § 144.52(a)(7). The approved financial assurance mechanism is found in Part III(C) of this permit.

(a) The permittee must maintain a written cost estimate, in current dollars, for the Plugging and Abandonment Plan as specified in 40 C.F.R. § 146.10. The plugging and abandonment cost estimate at any point in the life of the facility operation must equal the maximum cost of plugging and abandonment at that time.

(b) The permittee must adjust the cost estimate of plugging and abandonment for inflation within thirty (30) calendar days after each anniversary of the first estimate. The inflation factor is the result of dividing the latest published annual Oil and Gas Field Equipment Cost Index by the index for the previous year.

(c) The permittee must revise the plugging and abandonment cost estimate whenever a change in the Plugging and Abandonment Plan increases the cost of plugging and abandonment.

(d) If the revised plugging and abandonment estimate exceeds the current amount of the financial assurance mechanism, the permittee shall submit a revised mechanism to cover the increased cost within thirty (30) calendar days after the revision specified in Part I (H)(1)(b) and (c) of this permit.

(e) The permittee must keep on file at the facility a copy of the latest plugging and abandonment cost estimate prepared in accordance with 40 C.F.R. §144.52(a)(7), during the operating life of the facility.

2. Insolvency - The permittee must notify the Director within ten (10) business days of any of the following events:

(a) The bankruptcy of the trustee or issuing institution of the financial mechanism; or

(b) Suspension or revocation of the authority of the trustee institution to act as trustee; or

(c) The institution issuing the financial mechanism losing its authority to issue such an instrument.

3. Notification - The permittee must notify the Director by certified mail of the commencement of voluntary or involuntary proceedings under Title 11 (Bankruptcy), U.S. Code naming the owner or operator as debtor, within ten (10) business days after the commencement of the proceeding. A guarantor of a corporate guarantee must make such a notification if he or she is named as debtor, as required under the terms of the guarantee.

4. Establishing Other Coverage - The owner or operator must establish other financial assurance or liability coverage acceptable to the Director, within sixty (60) calendar days of the occurrence of the events in Part I(H)(2) or (H)(3) of this permit.

I. CORRECTIVE ACTION

1. Compliance - The permittee shall comply with 40 C.F.R. §§ 144.55 and 146.7.

2. Corrective Action Plan - The permittee shall file a Corrective Action Plan for approval by the Director within thirty (30) days of a written determination by the Director that improperly plugged, completed, or abandoned wells, or wells for which plugging or completion information is unavailable, are present in the area of review and penetrate the confining zone of the permitted well, as defined in the administrative record for this permit.

3. Prohibition of Movement of Fluids into USDWs [§144.12] Should upward migration of fluids through the confining zone of this permitted well be discovered within the two mile area of review due to injection activities at this facility, and should this migration of fluids cause the introduction of any contaminant into a USDW pursuant to 40 C.F.R. § 144.12, the permittee shall immediately cease injection into this well until the situation has been corrected and reauthorization to inject has been given by the Director.

PART II
WELL SPECIFIC CONDITIONS FOR UIC PERMITS

J. CONSTRUCTION

1. Siting [40 C.F.R. §146.12(a)] – All Class I wells shall be sited in such a fashion that they inject into a formation which is beneath the lowermost formation containing, within one quarter mile of the well bore, an underground source of drinking water.

2. Casing and Cementing [§146.12(b)] - Notwithstanding any other provisions of this permit, the permittee shall case and cement the well in such a manner so as to prevent the movement of fluids into or between USDWs for the expected life of the well. The casing and cement used in the construction of this well are shown in Part III(E) of this permit and in the administrative record for this permit. Any change shall be submitted for approval by the Director before installation.

3. Tubing and Packer Specifications [§146.12(c)] - The permittee shall inject only through tubing with a packer set within the long string casing at a point within or below the confining zone. The tubing and packer used in the well are represented in engineering drawings contained in Part III(E) of this permit. Any changes shall be submitted by the permittee for the approval of the Director before installation.

4. Wellhead Specification [§144.51(i)(4)] - The permittee shall install and maintain a female coupling and valve on the wellhead, to be used for independent injection pressure readings. Further, the permittee shall install a sampling port for waste sampling consistent with the permittee's waste sampling procedures, if applicable.

K. OPERATIONS [§146.13]

1. Injection Pressure Limitation - Except during stimulation, the permittee shall not cause or permit the injection pressure at the wellhead to exceed the maximum limitation which is specified in Part III(A) of this permit. In no case shall injection pressure initiate fractures or propagate existing fractures in the confining zone or cause the movement of injection or formation fluids into a USDW.

2. Additional Injection Limitation - No waste streams other than those identified in Part III(F) of this permit shall be injected. Every twelfth month the permittee shall submit a certified statement attesting to compliance with this requirement.

3. Annulus Fluid and Pressure - The permittee shall fill the annulus between the tubing and the long string casing with a fluid approved by the Director and identified in the administrative record of this permit. Any change in the annulus fluid, except during workovers or times of annulus maintenance, shall be submitted by the permittee for the approval of the Director before replacement. Except during workovers, the permittee shall maintain a positive pressure on the annulus as specified in Part III(A) of this permit.

4. Annulus/Tubing Pressure Differential - Except during workovers or times of annulus maintenance, the permittee shall maintain, over the entire length of the tubing, a pressure differential between the tubing and annulus as specified in Part III(A) of this permit.

5. Automatic Warning and Automatic Shut-off System - The permittee shall continuously operate and maintain an automatic warning and automatic shut-off system to stop injection in any of the following situations:

   (a) Pressure changes in the annulus or annulus/tubing differential signifying or identifying possible deficiencies in mechanical integrity; or

   (b) Injection pressure, annulus pressure, or annulus/tubing differential pressure reaches the pressure limits as specified in Part III(A) of this permit.

   A trained operator must be on site and within perceptible distance of the alarm at all times when the well is operating. The permittee must test the automatic warning and automatic shut-off system at least every twelfth month. This test must involve subjecting the system to simulated failure conditions and must be witnessed by the Director or his or her representative unless the Director waives this requirement.

6. Precautions to Prevent Well Blowouts [§144.51(e) and §144.52(a)(9) and (b)(1)]

   (a) The permittee shall maintain on the well at all times a pressure which will prevent the return of the injection fluid to the surface. The well bore must be filled with a high specific gravity fluid during workovers to maintain a positive (downward) gradient and/or a plug shall be installed which can resist the pressure differential. A blowout preventer must be kept in proper operational status during workovers.

   (b) In cases where the injected wastes have the potential to react with the injection formation to generate gases, the permittee shall follow the procedures below to assure that a backflow or blowout does not occur:

      (1) Limit the temperature, pH or acidity of the injected waste; and

      (2) Develop procedures necessary to assure that pressure imbalances do not occur.

L. MONITORING

1. Sampling Point - The injection fluid samples shall be taken at the sampling location as specified in Part III(A) of this permit.

2. Continuous Monitoring Devices - The permittee shall maintain continuous monitoring devices and use them to monitor injection pressure, flow rate, and the pressure on the annulus between the tubing and the long string of casing. If the well is equipped with a fluid level indicator, the permittee shall monitor the fluid level daily. The monitoring results shall be submitted to the Director as specified in Part II(D) of this permit. The permittee shall maintain for EPA's inspection at the facility an appropriately scaled, continuous analog record of these monitoring results as well as original copies of any digitally recorded information pertaining to these operations.

3. Waste Analysis Plan [§144.52(a)(5)] - The permittee shall comply with the written Waste Analysis Plan which describes the procedures used to monitor the nature of injected fluids and the procedures which will be carried out to comply with Part (I)(E)(10) of permit. A copy of the approved plan shall also be kept at the facility.

4. Ambient Monitoring [§146.13(d)(1)] - The permittee shall monitor the pressure buildup in the injection zone, and at least once every twelfth month thereafter, including at a minimum, a shut down of the well for a time sufficient to conduct a valid observation of the pressure fall-off curve. From this observation, the permittee shall submit a report including at least a calculation of pressure build-up in the injection zone, injection zone transmissivity, and wellbore skin factor.

5. Temperature Monitoring – The permittee shall monitor injectate temperature at least once daily on each day during which injection occurs. If injection occurs during more than one eight-hour period in a day, temperature must be recorded at least once every six hours. The monitoring results shall be submitted to the Director as specified in Part II(D)(1)(f) of this permit.

M. REPORTING REQUIREMENTS [§146.13(c)]

The permittee shall submit all required reports to the Director at:

U.S Environmental Protection Agency
Region 5
77 West Jackson Boulevard
Chicago, Illinois 60604-3590
ATTN: UIC Branch (WU-16J)

1. Monthly Reports - The permittee shall submit monthly reports of the following information no later than the end of the month following the reporting period:

   (a) A tabulation of maximum injection pressure, a daily measurement of annulus tank fluid level, and minimum differential between simultaneous measurements of injection pressure and annulus pressure for each day of the month;

(b) Appropriately scaled graphs showing injection pressure and flow rate and annulus tank fluid level. One graph must include, at a minimum, daily maximum injection pressure and daily average flow rate, on a single, monthly chart.

(c) A statement of the total volumes of the fluid injected to date, in the current calendar year, and the current month;

(d) A tabulation of the dates, amounts and types of liquid added to or removed from the annulus system during the month, and the cumulative additions and cumulative subtractions for the current month and each of the past 12 months;

(e) Any noncompliance with conditions of this permit, including but not limited to:

(1) Any event that exceeds operating parameters for annulus pressure or injection pressure or annulus/tubing differential as specified in the permit; or

(2) Any event which triggers an alarm or shutdown device required in Part II(B)(5) of this permit.

(f) The monthly average of the measured values of injectate temperature. If temperature measurements are recorded when the well is not injecting, those measurements will not be included in calculating the monthly average. Records of all temperature measurements must be maintained in accordance with Part I(E)(9)(a) of this permit.

2. Quarterly Reports - The permittee shall report at least every quarter the results of the injection fluid analyses specified in the approved waste analysis plan as recorded in the administrative record for this permit. This report must include statements showing that the requirements of Part I(E)(10) and Part II(C)(3) have been met.

2. Annual Reports - The permittee shall report the following at least every twelfth month:
(a) Results of ambient monitoring required by 40 C.F.R. § 146.13(d)(1) and Part II(C)(4) of this permit; and
(b) A certified statement attesting that no waste streams other than those identified in Part II(B)(2) of this permit were injected into the well.

4. Reports on Well Tests and Workovers - Within forty-five (45) calendar days after the activity, the permittee shall report to the Director the results of demonstrations of mechanical integrity, any well workover, or results of other tests required by this permit.

ATTACHMENTS

These attachments include, but are not limited to, permit conditions and plans concerning operating procedures, monitoring and reporting, as required by 40 C.F.R. Parts 144 and 146. The permittee shall comply with these conditions and adhere to these plans as approved by the Director, as follows:

A. SUMMARY OF OPERATING, MONITORING AND REPORTING REQUIREMENTS (ATTACHED)

B. PLUGGING AND ABANDONMENT PLAN (ATTACHED)

C. FINANCIAL ASSURANCE MECHANISM (ATTACHED)

D. CONTINGENT CORRECTIVE ACTION (ATTACHED)

E. CONSTRUCTION DETAILS (ATTACHED)

F. SOURCE AND ANALYSIS OF WASTE (ATTACHED)

ATTACHMENT A
SUMMARY OF OPERATING, MONITORING AND REPORTING REQUIREMENTS

SUMMARY OF OPERATING, MONITORING AND REPORTING REQUIREMENTS

CHARACTERISTIC	LIMITATION FREQUENCY	MINIMUM MONITORING FREQUENCY	MINIMUM REPORTING
Injection Pressure	534 psig maximum*	continuous	monthly
Annulus Pressure	100 psig minimum	continuous	monthly
Annulus/Tubing Differential	100 psig minimum above operating injection pressure	continuous	monthly
Flow Rate		continuous	monthly
Temperature**		daily**	monthly
Annulus Fluid Level		daily	monthly
Cumulative Volume		continuous	monthly
Annulus Fluid Loss		monthly	monthly
Chemical Composition of Injected Fluids***		monthly	quarterly
Physical Characteristics of Injected Fluids***		monthly	quarterly

Sampling Location: The sample location is at the well head

* The limitation on injection pressure will serve to prevent injection-formation fracturing. This limitation was calculated using the following formula: [{Fracture Gradient – (0.433 psi/ft × specific gravity)} × depth] - 14.7 psi. The fracture gradient of 0.746 psi/ft was determined by site specific testing of the injection zone. The Traverse Limestone at 2035 was used as the depth and a specific gravity of 1.1 was used for the injection fluid.

** Frequency of temperature measurements will be in accordance with Section II(C)(5) of this permit. Reporting of injectate temperature will be in accordance with Section II(D)(1)(f) of this permit.

*** As specified in the Waste Analysis Plan, found in the administrative record for this permit. At a minimum, this analysis shall include, but not be limited to, the following: Specific Conductance, pH and Specific Gravity.

ATTACHMENT B
PLUGGING AND ABANDONMENT PLAN

Q. PLUGGING AND ABANDONMENT PLAN

Submit a plan for plugging and abandonment of the well Including (1) describe the type, number, and placement (including the elevation of the top and bottom) of plugs to be used; (2) describe the type, grade, and quantity of cement to be used; and (3) describe the method to be used to place plugs, including the method used to place the well in a state of static equilibrium prior to placement of the plugs. Also, for a Class III well that underlies or is in an exempted aquifer, demonstrate adequate protection of USDWs. Submit this information on EPA Form 7520-14, Plugging and Abandonment Plan.

Response:

The following completed EPA Form 7520-14, Plugging and Abandonment Plan, is submitted to satisfy this requirement. The modifications made to this form are to provide consistency with all available and current information. The plan is also summarized in graphical form in this response.

Plugging and Abandonment Procedure

1. Move in and rig up well servicing rig, pipe racks and 100 bbl tank.

2. Displace tubing with 15 bbls of 10 lb/gal brine. Dismantle wellhead and install blow-out preventer. Displace annulus with 30 bbls of 10 lb/gal brine. Brine should be tested for compatibility with cement to be used.

3. Remove injection tubing and packer. If packer will not unseat, cut the tubing with a tubing charge immediately above the packer. Remove and dispose of tubing as required. Pull packer.

4. Make-up mechanical plug on workstring and trip in hole. Set cement retainer or plug at top of disposal zone (±1,980'). Test cement retainer or to 500 psig.

5. Move in cement and cementing equipment.

6. Displace hole below retainer with 200 sacks Class "A" cement. Unsting from retainer and spot 50 sacks on top of plug. Cement volume has been calculated based on the following volumes:

5 1/2" casing from 1980' to 2740' at 0.1376 cuft/ft = 102 cuft 12
1/4" open hole from 2740' to 2796' at 0.8185 cuft/ft = 46 cuft 8
5/8" casing stub from 2796' to 3000' at 0.3505 cuft/ft = 72 cuft

Total volume of the plug would be 220 cuft which is equivalent to 186 sx of Class A cement with a yield of 1.18. Note that since wellbore fill is expected to be at a depth of 2,800' to 2,900' BGL, this volume of cement may have to be squeezed into the openhole of the injection interval.

7. Spot successive, continuous balanced cement plugs from top of the bridge plug to surface. Cement to be API Class "A" with the following slurry properties:

water ratio	- 5.20 gallons per sack
slurry weight	- 15.60 pounds per gallon
slurry volume	- 1.18 cubic feet per sack

An estimated 250 sacks or 290 cubic feet of slurry will be required above plug.

8. Rig down and move out all equipment.

Remove wellhead and cut off casing. Weld a steel plate on top of casing. The steel plate should be inscribed with waste disposal well identification information and the date of plugging. Federal and State representatives will have been invited to witness the plugging and sign the plug and abandonment form.

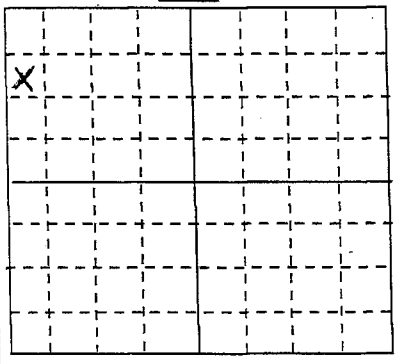
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

PLUGGING AND ABANDONMENT PLAN

Name and Address of Facility
[illegible]nau Fruit Company
[illegible]te Highway M37
Buckley MI 49620

Name and Address of Owner/Operator
Leelanau Fruit Company
2900 S West Bay Shore Drive
Suttons Bay, MI 49682

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
MI	Wexford	MI-165-1I-0001

Surface Location Description
_SW_ 1/4 of _NW_ 1/4 of _NW_ 1/4 of ____ 1/4 of Section _7__ Township 24N_ Range 11W

Locate well in two directions from nearest lines of quarter section and drilling unit
Surface Location 1000 ft. From (N/S) N Line of Quarter Section
And 460 ft. From (E/W) W Line of Quarter Section

TYPE OF AUTHORIZATION
- [x] Individual Permit
- [ ] Area Permit
- [ ] Rule

Number of Wells 1

Lease Name Wildcat

WELL ACTIVITY
- [x] Class I
  - [ ] Hazardous
  - [ ] Nonhazardous
- [ ] Class II
  - [ ] Brine Disposal
  - [ ] Enhanced Recovery
  - [ ] Hydrocarbon Storage
- [ ] Class III

Well Number Fee No. 1

CASING AND TUBING RECORD AFTER PLUGGING

SIZE	WT (LB/FT)	TO BE PUT IN WELL (FT)	TO BE LEFT IN WELL (FT)	HOLE SIZE
20	94	60	60	20"
13 3/8	48	919	919	17 1/2"
5 1/2	15.5 & 20	2740	2740	7 7/8

METHOD OF EMPLACEMENT OF CEMENT PLUGS
- [x] Balance Method
- [ ] Dump Bailer Method
- [ ] Two Plug Method
- [x] Other cement retainer

Note: add 13.81' to GL for KB elevation

CEMENT TO PLUG AND ABANDON DATA:

	Plug #1	Plug #2	Plug #3	Plug#4	Plug #5	Plug #6	Plug #7
Size of Hole or Pipe in Which Plug Will Be Placed (inches)	5 1/2" & 12 1/4" & 8 5/8"	5 1/2"					
Depth to Bottom of Tubing or Drill Pipe (ft)	1980	1980					
Sacks of Cement To Be Used (each plug)	200	250					
Slurry Volume To Be Pumped (cu. Ft.)	238	290					
Calculated Top of Plug (ft.)	1980	Surface					
Measured Top of Plug (if tagged, ft.)	-	-					
Slurry Weight (Lb./Gal.)	15.6	15.6					
Type of Cement or Other Material (Class III)	A	A					

LIST ALL OPEN HOLE AND/OR PERFORATED INTERVALS AND INTERVALS WHERE CASING WILL BE VARIED (if any)

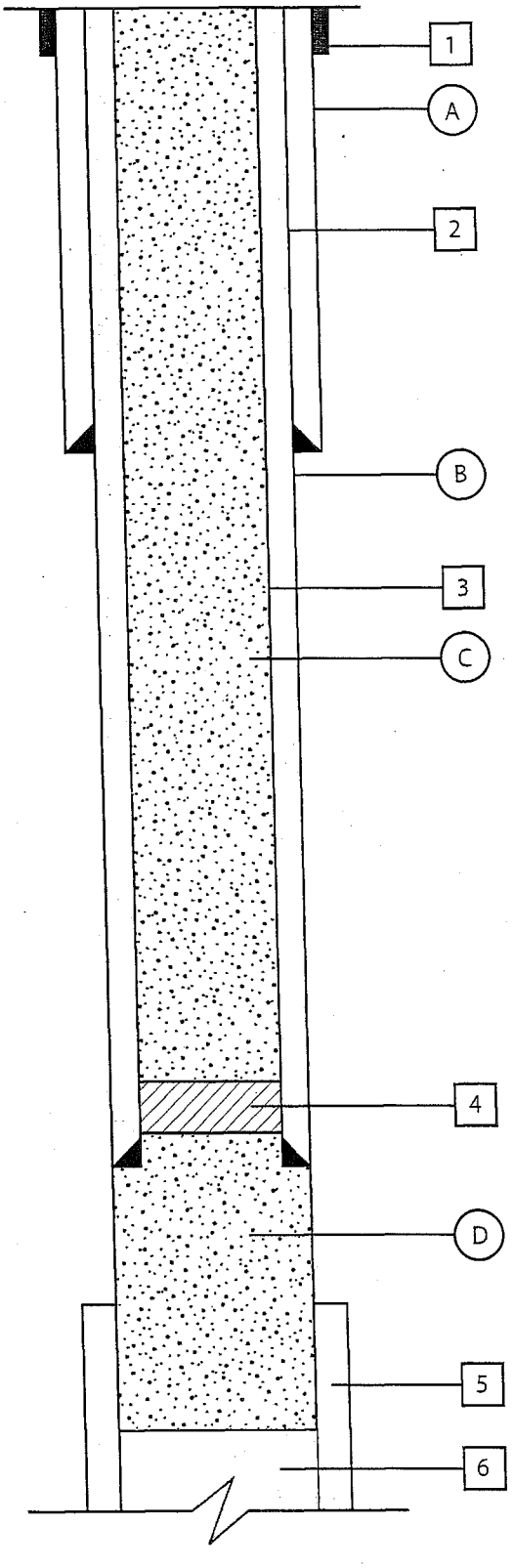
From	To	From	To

Estimated Cost to Plug Wells
See Attached: $24,300.00.

CERTIFICATION

I certify under the penalty of law that I have examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref.40 CFR 144.32)

Name and Official Title (Please type or print)	Signature	Date Signed
Glenn F LaCross, President	Glenn F. LaCross	6/28/2009



Original
PBTD~3,700'

Cement,volumes, fluids and hole size

Tubulars and components

A Cemented to Surface with 425sx

B 11" Hole, Cemented to Surface with 1200sx

C 250 Sacks, Cement from +-1.980' to Surface

D 200 Sacks, Cement from +-1.980' to 2,810'

1 Conductor Casing: 20" driven to +- 74'

2 Surface Casing: 13 3/8" set @ +- 933'

3 Protection Casing: 5 1/2" set @ +- 2,754'

4 Mechanical Plug set @ +- 1,980'

5 Casing Stub: 8 5/8" from 2,810' to 3,679'

6 Wellbore Fill @ 2,918'

Note: All depths referenced to Kelly bushing which is 13.81' above ground level.

Leelanau Fruit Company
2900 S. West Bay Shore Drive
Suttons Bay, Michigan 49682

Figure Q-1
Well Plugging Schematic
Well No.1
2009 Re-permit for MI-165-1I-0001

Scale: NTS	Date: June 2009	
LFC_RP_Fig_Q-1.ai	By: JLM	Checked: KC

Petrotek
10288 West Chatfield Ave., Suite 201
Littleton, Colorado 80127-4239 USA
303-290-9414
www.petrotek.com

ATTACHMENT C
FINANCIAL ASSURANCE MECHANISM

Leelanau Fruit Company has demonstrated adequate financial resources to plug and abandon its Class I non-hazardous waste disposal well. State letter of credit number 512202 in the amount of $33,000 has been established with Northwestern Bank of Traverse City, Michigan.

ATTACHMENT D
CONTINGENT CORRECTIVE ACTION

C. CORRECTIVE ACTION PLAN AND WELL DATA

Submit a tabulation of data reasonably available from public records or otherwise known to the applicant on all wells within the area of review, including those on the map required in Attachment B, which penetrate the proposed injection zone. Such data shall include the following:

Class I

A description of each well's type, construction, date drilled, location, depth, record of plugging and/or completion, and any additional information the Director may require. In the case of new injection wells, include the corrective action proposed to be taken by the applicant under 40 CFR 144.55.

Response:

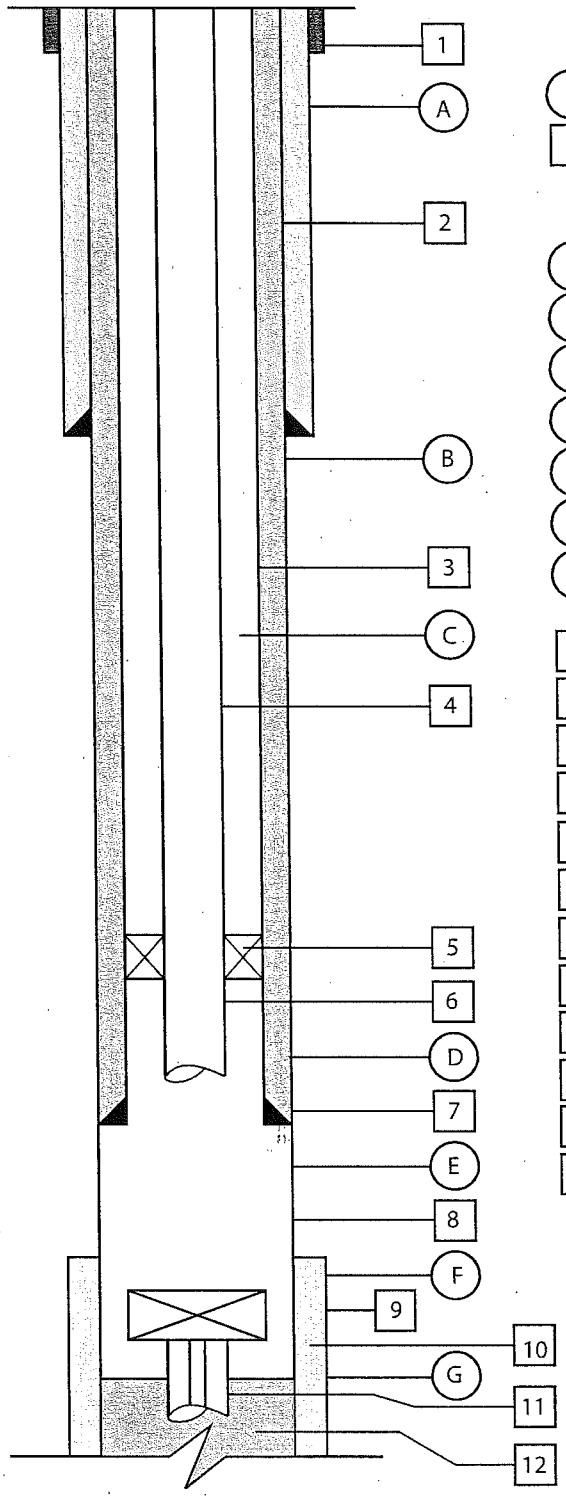
CORRECTIVE ACTION

There are no known artificial penetrations to the injection zone within the area of review and probable cone-of-influence that have the potential for allowing injection activities to have an impact on the lowermost USDW. Therefore, a corrective action plan is not required for any artificial penetrations within the Leelanau Fruit Company area of review. If a corrective action plan for any neighboring well becomes necessary in the future, it will be developed according to appropriate regulatory standards and guidelines.

The corrective action plan which would be proposed by Leelanau Fruit Company should fluid migration to occur through the confining layer develop via any future well will include the following:

1. The Leelanau waste disposal well will be shut-in.
2. The US EPA, Region 5 UIC Section and the Michigan Department of Natural Resources will be notified.
3. Following well shut-in, waste will be shipped to alternative permitted facilities for off-site treatment and disposal as necessary.
4. A contingency plan will be prepared as follows:
    a. Locate well and identify present operator or owner, if any.
    b. Identify mode of failure.
    c. Prepare remedial plan outlining course of action.
    d. The remedial plan will be submitted to MDEQ and US EPA, Region 5 for approval.
    e. Upon authorization, the remediation plan will be implemented.

ATTACHMENT E
CONSTRUCTION DETAILS



Original
PBTD~3,700'

○ Cement,volumes, fluids and hole size

□ Tubulars and components

(A) Cemented to Surface with 425sx

(B) 11" Hole, Cemented to Surface with 1400sx

(C) Annulus Fluid: Fresh Water Corrosion Inhibitor

(D) Completion: Perforated

(E) Completion: Open Hole

(F) Completion: Perforated

(G) Shot-off Casing Stub

[1] Conductor Casing: 20" driven to +- 74'

[2] Surface Casing: 13 3/8" set @ +- 933'

[3] Protection Casing: 5 1/2" set @ +- 2,754'

[4] Injection Tubing: 2 7/8", J-55, 8rdKC, Coated with TK-15

[5] Packer: 316 S.S. Patriot - RH/RH - 5 1/2" x 2 7/8", 3.85' long, @ 1,995'

[6] Tail Pipe: 63' of 2 7/8", J-55, coated with TK-15 to 2,061'

[7] Traverse Perforations: 2,206 - 2,226', 2,274' - 2,284', 2,308' - 2,328'

[8] Open Hole: 2,754' to 2,810'

[9] Dundee Perforations: 2,855' - 2,875', 2,880' - 2,915'

[10] Casing Stub: 8 5/8" from 2,810' - 3,679'

[11] Partial Packer and Tubing Fish (~94') below 2,847'

[12] Wellbore fill below 2,920'

Note: All depths referenced to Kelly Bushing which is 13' above ground.

Leelenau Fruit Company
Buckley, Michigan

Figure 1
Wellbore Schematic
Well No.1
MI-165-1I-0001

Scale: NTS	Date: March 2012	
LFC_WS_Well_No1.ai	By: JLM	Checked: KC

Petrotek
10288 West Chatfield Ave., Suite 201
Littleton, Colorado 80127-4239 USA
303-290-9414
www.petrotek.com

ATTACHMENT F
SOURCE AND ANALYSIS OF WASTE

WASTE ANALYSIS PLAN

UIC Re-Permit Application

Leelanau Fruit Company
Class I Non-Hazardous Deepwell
USEPA Permit # MI-165-1I-0001
MDEQ Permit # M-124

June 2009
Revised December 2013

Buckley, Michigan Facility
Fee No. 1
T24N, R11W Section 7
Wexford County

Petrotek Engineering Corporation
5935 South Zang Street, Suite 200
Littleton, Colorado 80127
Phone: (303) 290-9414
Fax: (303) 290-9580

TABLE OF CONTENTS

1.0 INTRODUCTION

1.A. Background

The Leelanau Fruit Company (Leelanau) well at the Buckley, Michigan facility is currently permitted to operate as a non-hazardous, non-commercial Class I industrial disposal well. The purpose of this Waste Analysis Plan (WAP) is to characterize the non-hazardous industrial waste-water that is injected into the well. Leelanau will be responsible for ensuring this WAP is implemented.

The well is currently permitted for injection of wastewaters generated from any fruit processing or storage operations conducted by Leelanau Fruit Company. Fluids are currently generated at the Buckley well facility location, but in the future may also include fluids generated by Leelanau at their Suttons Bay facility. Other fluids necessary for well testing, stimulation, workover or buffer fluid may also be injected. In addition, after minor modification of the permit by adding waste sources to the applicable permit attachment, this permit approval request will authorize the injection of off-site non-hazardous waste streams (Class I waste) as defined by applicable federal and state regulations on a commercial basis.

Leelanau will operate the well under this waste analysis plan in accordance with Title 40 of the Code of Federal Regulations (40 CFR), Section 146.13 which requires operators of Class I underground injection wells to monitor and analyze the fluids injected into the well "to yield representative data of their characteristics." This waste analysis plan has been prepared to fulfill the specifications of 40 CFR 146.68 such that the plan presents parameters for which the waste will be analyzed, methods that will be used to test for these parameters, and methods that will be used to obtain a representative samples of the waste to be analyzed.

1.B. Sources

Sources for Class I non-hazardous waste to be injected into the well under this waste analysis plan include fruit production processing, brining, storage and transport brines, wash water, storm water, and wastes generated from cleaning and sanitizing of fruit processing equipment at the Buckley, Michigan facility. In addition, similar wastewater derived from operations at the main Suttons Bay, Michigan Leelanau Fruit Company facility are also considered a source of non-commercial injectate. These fluids are derived from the same process and are generated by the Leelanau Fruit Company, but may be generated at the Sutton's Bay facility rather than the Buckley facility.

It is the understanding of Leelanau Fruit that no additional approvals are required for any wastes derived from processing at the Leelanau Sutton's Bay facility since products are interchangeable and are hauled between facilities regularly.

1.C. Summary

Major portions of the Leelanau waste characterization and monitoring program related to the injection of fluids consist of:

Volume Monitoring
Sampling and Analysis
Quality Assurance/Quality Control

The WAP may be reviewed and, if necessary, revised as new sources are added to the approved waste stream. Revisions to the WAP, upon approval, will become part of the administrative record and constitute a minor modification of the permit.

Compatibility problems between the waste and the injection or confining zone lithologies or with the well construction materials that might lead to injection safety issues are not anticipated. The history of Class I injection and commercial non-hazardous injection in the state of Michigan has clearly demonstrated that a wide variety of aqueous industrial and oilfield wastes are suitable for Class I injection. No non-hazardous waste compatibility problems relevant to the safe operation or containment of waste in the subsurface have been identified in previous permit applications or well operations. Data appropriate to evaluate such concerns will be collected only when deemed necessary by Leelanau through waste specific process or characterization data. Economic and well performance issues regarding well flow rate capacity and maintenance are to be addressed by utilizing settling and filtration of the waste prior to injection. It is probable that waste with more than 5% suspended solids that cannot pass a 100 micron filter test will not be handled due to the potential for increasing operating cost by fouling the surface facilities and the injection formation. Any wastewater from the Leelanau Fruit Sutton's Bay facilities will be off-loaded into the same tanks used to accumulate current plant waste, and one set of filters, one set of flow lines and injection apparatus, a single suction tank and one injection pump will be utilized to facilitate injection of all waste into the single Class I well at the facility.

2.0 PROCEDURES

2.A. Waste Volume Monitoring

Offloading of waste from the Leelanau Fruit Sutton's Bay facility will be conducted with a trained operator physically present on site. A file containing waste manifests, as may be required by MDEQ for non-commercial waste hauled by a generator from one facility to another of it's own locations, or an offsite waste related bound log book will be maintained documenting that a trained well operator allowed offsite waste to be unloaded. At a minimum, the manifest file or offsite waste log-book entries are to include operator name, date, time, generator identification, approximate volume, and approved waste source identification number from the effective permit. These records will be considered part of the plant monitoring records regarding the injection well. Waste generated by Leelanau from the Buckley and Sutton's Bay facility will be managed as a single waste source, and records will be kept of the total volume disposed of the commingled fluids.

As discussed in the main text of the permit re-application, a recorder will be utilized to continuously monitor injection pressure, annulus pressure, flow rate and totalized cumulative volumes. A summary of recorded data will be provided to the EPA per applicable permit requirements. Records of daily volume accepted from off-site sources will be recorded and a total monthly volume of Sutton's Bay and on-site waste calculated based on records maintained in the manifest file or the bound "Offsite Log Book" will be noted in the monthly well reports made to EPA.

2.B. Waste Characterization

Currently Approved Wastes

At a minimum, the following composition parameters will be monitored once quarterly for any quarterly period that the disposal of currently permitted Class I injectate from the Buckley facility and/or the Sutton's Bay Leelanau waste is managed via the well. These parameters shall include:

- pH
- total dissolved solids
- total suspended solids
- TOC
- COD
- conductivity
- specific gravity
- sulfate
- sulfide
- sulfite
- total phosphorous
- calcium
- potassium
- sodium
- chloride

Leelanau Fruit Company
State Highway M-37
Buckley, Michigan 48620
Class I Non-Hazardous Deepwell No. 1 (MDEQ Permit M-124)
Permit #MI-165-1I-0001; T24N, R11W, Section 7

Sample Sutton's Bay Class I Waste Manifest
(if needed)

WASTE

Leelanau EPA/MDEQ Source ID #:
Source of Waste:
Type of Waste:

Proper Shipping Name of Waste (if any):
Volume (gallons):_____

Date / Time Picked up at Generator Location: _____/_____
Date / Time Arrived at Disposal Facility: _____/_____

TRANSPORTER

USEPA State and/or DOT Identification Numbers (if any):

Transporter Name:

Transporter Address:

Vehicle and Driver Identification:

Transporter Driver Signature :_____ Date :_____

2.C. Sampling and Analysis

Leelanau, generator, or contracted analytical laboratory personnel will collect necessary waste stream samples. All sampling procedures will be conducted at the direction of the selected, certified analytical laboratory and in accordance with acceptable US EPA procedures. The sampler's name, sampling point, and date sampled will be documented in chain-of-custody paperwork. Samples will be collected with the grab method.

The table included below summarizes the analytical method and sampling frequency for typical parameters that may be included in the waste sampling for a particular waste source.

LEELANAU FRUIT COMPANY
WASTE SAMPLING METHODS

Test Parameter	Test Method	Units
Total Dissolved Solids, TDS	EPA 160.1	mg/L
Total Suspended Solids, TSS	EPA 160.2	mg/L
Specific Gravity	ASTM 2710 F	-
Total Organic Carbon, TOC	415.1,415.2	mg/L
Chemical Oxygen Demand, COD	SM5220D	mg/L
Specific Conductance, Conductivity	120.1, SM2510-B	-
Sodium	EPA 6010B	mg/L
Calcium	EPA 6010B, 200.8	mg/L
Magnesium	EPA 6010B	mg/L
Bicarbonate	EPA 310.1	mg/L
Sulfate	EPA 300.0, 375.4	mg/L
Sulfide	EPA 376.2	mg/L
Sulfite, as S03	EPA 377.1	mg/L
Total Phosphorous	EPA 200.8	mg/L
Chloride	EPA 325.2, 325.3	mg/L

Test Parameter	Test Method	Units
Corrosivity (D002), pH	SW-846 1110, 9045, 150.1	pH units

Notes: Leelanau reserves the right to select use of any cited methods or method with equal or greater detection limit

Samples will be collected from the storage tanks or flow line prior to injection.

3.0 QUALITY ASSURANCE/QUALITY CONTROL

3.A. General Sampling and Analytical Information

The sampling protocol will be followed by properly trained personnel conducting the sample collection and analysis. Leelanau will adhere to guidelines set forth in "Test Methods for Evaluating Solid Waste", SW-846 and 'Methods for Chemical Analysis of Water and Wastes", EPA 600/4-79/020 as appropriate. Approved sample preservation techniques from 40 CFR 136.3 will be followed as appropriate. These will include preservation in plastic or glass sample containers provided by the laboratory and storage in a sample refrigerator or cooler for shipment to the laboratory. Leelanau has used various laboratories in Michigan to provide analysis services for waste characterization in the past. Leelanau reserves the option to choose alternate laboratories for testing provided equivalent QA/QC standards are met.

Standard chain of custody protocols will be followed for waste collection, transport and analysis. Below are summaries of the minimum sampling and analysis protocols that will be followed for each characterization parameter:

Labeling

1. Leelanau Waste Source Sample ID # including code or name, date and time
2. Name of sample collector; (include sampling company name if not Leelanau);
3. Sample collection method;
4. Sample collection point;

Reporting

1. Sample preservation technique, as appropriate;
2. Analytical method for parameter detection/quantification;
3. Analytical method accuracy and quantification limits; and
4. Field documentation of sampling.

The following are QA/QC parameters which will be followed to ensure the adequacy of the sampling and analytical techniques for wellhead sampling and analysis described in this plan.

3.B. Sampling Controls

1. Equipment Blanks

If possible, samples will be obtained directly from the sample tap or valve being used to

access the tank or containment vessel and not be transferred to any secondary container or device before being stored in the sample container to be shipped to the laboratory. In this case, no equipment cleaning blanks will be required. If not, equipment blanks will be taken as deemed appropriate by Leelanau for the purpose of detecting potential cross contamination due to improper decontamination of sampling equipment. After sampling, any secondary container or sampling device used will be decontaminated according to the sampling plan protocol. The sampling device will then be rinsed with deionized, water and the rinsate collected in a sample container for transport to the laboratory for analysis of, at a minimum, the same parameters chosen in the sampling plan above.

2. Trip Blanks

In the case of suspect analysis from any laboratory, trip blanks will be used and will be sample containers filled with Type II reagent grade water at the laboratory, sealed at the laboratory, which accompany the sample containers used throughout the sampling event. The sample containers shall be handled in the same manner as the samples. Trip blank(s) will be sent to the laboratory for analysis of, at a minimum, the same parameters chosen in the sampling plan above. A minimum of one (1) trip blank per sampling event will be utilized, if necessary.

3. Sample Duplicates

On advance written demand of EPA, duplicate samples will be taken to assess the QA/QC of the laboratory conducting the analysis. Such samples will be drawn from the same site from which primary samples are taken. Any duplicate samples will be split from the original sample in a manner to emphasize sample representativeness. The duplicate will be labeled with a sample number that will not conflict with the other samples, but will not be discernable to the laboratory as a duplicate sample. One duplicate sample per sampling event will be taken and analyzed for the same parameters listed in the sampling plan.

4. Sample Chain-of-Custody Protocol

Sample chain-of-custody will be followed at all times during the sampling and subsequent analysis. Chain-of-custody will be used to document the handling and control necessary to identify and trace a sample from collection to final analytical results.

3.C. Analytical Controls

1. Equipment Calibration

Leelanau will require that selected laboratories maintain QA/QC data regarding the

frequency and type of instrument calibration performed at the laboratory and in the field. Any calibration of thermometers, gauges, chromatographs, spectrometers and other meters will be conducted according to appropriate instrument manufacturer specifications and manufacturer recommended frequencies or as dictated by applicable laboratory Q/A plans.

2. Data Reduction

The process of transcription of the raw data into the reportable units will be conducted by the laboratory in accordance with that laboratories Q/A plan. Data reduction utilized in the analysis and reporting process will be presented in the reports to the US EPA for each sampling event and parameter tested by the specific laboratory used at the time. Data will be recorded on hand written work sheets which will include identification data, sample data and all data required for calculations or on computer print-outs accompanied by operator notes and summaries.

3. Data Verification

Data verification will be conducted after each sampling event by assigned laboratory personnel review of chain-of-custody forms, equipment calibration records and data completeness. Spot checks of raw data versus reported data will be performed to review math accuracy, significant numbers and reporting units. In addition, certified laboratory standard quality assurance/quality control checklists will be utilized for individual test methods such as blanks, standards, and comparisons of internal lab test duplicate results. Problems with any of these items will be indicated in the report to the agency.

4. Internal Quality Control

Certified quality control samples will be run periodically with sample batches obtained from appropriate commercial sources, or the US EPA. Internal quality control will be addressed by disclosure of the laboratory's use of blanks, blind standards, matrix spikes and matrix spike duplicates, preparation of reagents, and laboratory duplicate or replicate analyses.

3.D. Actions

1. Corrective Actions

Corrective actions will be implemented by laboratories if the analytical or sampling method does not achieve plan objectives. Actions may entail re-sampling the waste stream and/or re-analyzing the fluid for a particular parameter, re-calibrating an analytical device, or other appropriate actions. Action levels will be taken in accordance with SW 846 or other approved EPA methods.

2. Reports to USEPA Region 5 and MDEQ

Reports to USEPA and MDEQ will contain results, data and sampling descriptions regarding the accuracy, completeness and repeatability of the reported analytical results. The report will contain a table that specifies the type of sample (blank, waste, etc.), sampling date, sampling location, analytical method, method detection limit and analytical result. The results of analyses and all accompanying data, including chain-of-custody forms, will be reported to USEPA with the next monthly operating report submitted to the agency after the receipt of the final sample analysis report from the laboratory. This submittal to the agency will typically be within sixty (60) days of the sampling event, unless prior arrangements have been made with the agency due to conditions beyond the control of the operator that prohibit such reporting.