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FILED

IN THE COURT OF COMMON PLEAS
ASHTABULA COUNTY, OHIO

2011 JAN -7 P 2: 11

STATE OF OHIO, ex rel.,
RICHARD CORDRAY
OHIO ATTORNEY GENERAL

Plaintiff,

v.

James W. Comp, et. al.,

Defendants.

Case No.

2011 CV 0025

Judge

Judge Gary L. Yost

CAROL A. MEAD
CLERK OF COURTS
COMMON PLEAS COURT
ASHTABULA CO, OH

CONSENT ORDER

The Complaint in the above-captioned matter having been filed, and Plaintiff, State of Ohio, by its Attorney General Richard Cordray ("Plaintiff") and Defendants, James W. Comp, Comp Dairy Farm, Ltd., and Comp Properties, Ltd. ("Defendants"), with advice of counsel, have consented to the entry of this Order.

NOW, THEREFORE, without trial of any issue of fact or law, and upon the consent of the parties hereto, it is hereby ORDERED, ADJUDGED, and DECREED as follows:

I. JURISDICTION AND VENUE

1. This Court has jurisdiction over the parties and the subject matter of this case pursuant to Ohio Revised Code ("R.C.") Chapter 903. The Complaint states a claim upon which relief can be granted against the Defendants pursuant to R.C. Chapter 903. Venue is proper in this Court.

II. PERSONS BOUND

2. The provisions of this Consent Order shall apply to and be binding upon the parties to this action, all subsequent owner(s) and/or operator(s), and all successors in interest to the Comp

Facility which is currently owned and operated by Defendants James W. Comp, Comp Properties, Ltd., and/or Comp Dairy Farm, Ltd., which is located at 3015 Allen Comp Road, Dorset, Ashtabula County, Ohio 44032 (“the Comp Facility”), and to their officers, agents, servants, employees, successors, and assigns, and those persons in concert or privity with them.

3. Defendants and successors in interest of the Comp Facility shall give at least thirty (30) days notice to the Ohio Department of Agriculture (“ODA”) Livestock Environmental Permitting Program (“LEPP”) before the sale or transfer of ownership of the facility.

4. Defendants shall provide a copy of this Consent Order to all successors in interest and/or any subsequent owner(s) and/or operator(s) of the Comp Facility.

5. No change in ownership or status of Defendants, including but not limited to any transfer of assets or personal property, shall in any way alter Defendants’ rights or obligations under this Consent Order. Defendants shall provide a copy of this Consent Order to any subsequent owner(s) or successor(s) prior to the transfer of Defendants’ ownership rights.

III. SATISFACTION OF LAWSUIT AND RESERVATION OF RIGHTS

6. Plaintiff alleges in its Complaint that Defendants Comp Properties, Ltd. and James W. Comp own the land where the Comp Facility is located. Plaintiff also alleges that Defendants James W. Comp, Comp Properties, Ltd. and Comp Dairy Farm, Ltd. have installed and operated a concentrated animal feeding facility at the Comp Facility without obtaining the required permit to install (“PTI”) and permit to operate (“PTO”) in violation of R.C. 903.02 and R.C. 903.03. Compliance with the terms of this Consent Order shall constitute full satisfaction of any civil liability by Defendants for all claims of violations alleged in the Complaint.

7. Nothing in this Consent Order shall be construed to limit the authority of the Plaintiff to seek any appropriate relief from persons other than the Defendants for claims or conditions

alleged in the Complaint. Nothing in this Consent Order shall be construed to limit the authority of the Plaintiff to bring any legal or equitable action against any person other than Defendants. Nothing in this Consent Order shall be construed to limit the authority of the Plaintiff to seek any appropriate relief against the Defendants or any other appropriate persons for claims or conditions not alleged in the Complaint, including violations that arose, continued, or occurred after the filing of the Complaint. Nothing in this Consent Order shall be construed to relieve the Defendants of their obligations to comply with applicable federal, state, or local statutes, rules, regulations, or ordinances. Nothing in this Consent Order shall be construed to limit the authority of the Plaintiff to take any action against any person, including the Defendants, to eliminate or mitigate conditions that may present a threat to the public health, welfare, or the environment. Nothing in this Consent Order shall be construed to limit the authority of the Plaintiff to enforce this Consent Order through a contempt action or to otherwise seek relief pursuant to the terms of the Consent Order for violations of the Consent Order.

8. This Consent Order in no way waives any defense afforded to Defendants by law in any contempt action brought by the Plaintiff. Finally, Defendants reserve all rights that they may have under Ohio's Rules of Civil Procedure.

IV. COMPLIANCE NOT DEPENDENT ON GRANTS OR LOANS

9. Performance of the terms of this Consent Order is not predicated on the receipt of any grant, loan, or funds from the federal or state government or private financial institution. In addition, performance of the terms of this Consent Order is not excused by the failure to obtain, or shortfall of any such grant, loan or funds, or by the processing of any applications for the same.

V. PERMANENT INJUNCTION

10. Defendants James W. Comp, Comp Dairy Farm, Ltd., and Comp Properties, Ltd. are hereby permanently enjoined and ordered to immediately comply with the requirements of R.C. Chapter 903, the rules adopted under those laws, and the terms and conditions of permits issued by the Director of the ODA, including without limitation, all future permits or modifications, or renewals issued to any Defendant. All renewals, modifications, or changes to any permit(s) issued to any Defendant by the Director of the ODA and/or effective after the entry of this Consent Order shall be deemed to be incorporated in full and made an enforceable part of this Consent Order.

VI. OTHER INJUNCTIVE RELIEF

11. Defendants are enjoined to develop, submit, and, after ODA approval, implement a PTI and PTO for the Comp Facility. Defendants are to submit complete PTI and PTO applications by mail to ODA for review and approval. Defendants are prohibited from stocking more than 699 dairy cows and/or stocking more than 999 cattle other than dairy cows at the Comp Facility unless and until ODA approves and issues a PTI and PTO for the Comp Facility and ODA grants stocking approval for the Comp Facility. If Defendants fail to obtain a PTI and PTO approved and issued by ODA on or before March 15, 2011, Defendants are immediately required to reduce the design capacity of the Comp Facility to a total below 700 dairy cows and are immediately required to reduce the design capacity of other cattle, other than mature dairy cows, below 1000 cows at the Comp Facility. Each day after March 15, 2011 that the Defendants fail to reduce the design capacity as required in this Paragraph constitutes a separate violation of this provision, R.C. 903.02, and R.C. 903.03. For purposes of this Consent Order, "design capacity" has the same meaning as that in Ohio Adm. Code 901:10-1-01(X).

12. After obtaining written approval from ODA for the design, location, and environmental controls for a new stormwater/manure storage pond as a part of the PTI, Defendants are enjoined to construct a new stormwater/manure storage pond. After ODA issues the PTI and PTO, ODA approves the completion of the contaminated stormwater collection system, and the Defendants obtain approval from ODA for adequate manure storage capacity, Defendants may stock no more than 1,000 mature dairy cows until construction and approval for use of the new stormwater/manure storage pond pursuant to Ohio Adm. Code 901:10-2-01(B)(4) and this Consent Order has been granted. If construction and approval for use of the new stormwater/manure storage pond is not obtained by September 15, 2011, Defendants are immediately required to reduce the population to a total below 700 dairy cows and are immediately required to reduce the population of other cattle, other than mature dairy cows, below 1,000 cows at the Comp Facility. Each day after September 15, 2011 that the Defendants fail to reduce the population as required in this Paragraph constitutes a separate violation of this provision, R.C. 903.02, and R.C. 903.03.

13. Defendants shall comply with the terms and conditions of the August 2010 Hydrogeological Investigation Work Plan For Comp Dairy Farm, Ltd. ("Plan"), attached hereto as Exhibit A. Defendants shall also comply with the terms and conditions set forth in Paragraphs 14, 15, 16, 17, and 18 below even if these Paragraphs provide additional requirements beyond those set forth in the Plan.

14. Defendants shall submit an initial plan outlining the proposed groundwater monitoring system as part of the PTI and PTO. On or before March 15, 2011, Defendants shall determine the proposed location of each groundwater monitoring well in accordance with Paragraph 13

above; determine the actual direction of groundwater flow at the main Comp Facility and at the satellite manure storage pond; and submit preliminary groundwater direction results.

15. Defendants are enjoined to monitor groundwater at the three existing manure storage ponds and the new stormwater/manure storage pond at the Comp Facility. On or before May 15, 2011, Defendants are required to install a minimum of eight monitoring wells at the main Comp Facility and a minimum of three monitoring wells at the satellite manure storage pond after obtaining written approval from ODA for the design, location, and environmental controls for these groundwater monitoring wells. Defendants may use any properly located existing wells so long as Defendants obtain prior written approval from ODA as stated above.

16. Defendants shall monitor the groundwater at each well for total coliform and nitrates during at least three separate sampling events to determine whether contamination is present. Each sampling event shall take place at least 90 days after the prior sampling event and the third and final sampling event required by this Paragraph shall take place no later than December 15, 2011.

17. After Defendants complete the sampling events required in Paragraph 16 above, Defendants shall monitor and sample the groundwater at each well for total coliform and nitrates at a minimum of once every six months thereafter unless the sampling schedule is revised or suspended by a subsequent PTO issued by ODA.

18. The person responsible for conducting groundwater sampling required in Paragraphs 16 and 17 above shall be experienced and knowledgeable in the area of groundwater sampling and shall not be an employee of any Defendant. Defendants shall also provide a report of each sampling event that describes the methods, findings, and any concerns that the Defendants may have with the groundwater sampling results. This report shall be prepared by the person

responsible for conducting the groundwater sampling. Defendants shall promptly submit the results and report of each monitoring event for review, and Defendants shall also maintain a copy in the operating record of the Comp Facility. Defendants shall comply with any remedial action provided by ODA.

19. Defendants shall obtain written prior approval from ODA before manure is land applied on frozen and/or snow covered ground that is owned, operated, rented, leased, or controlled by the Defendants.

20. The liquid manure storage or treatment facilities at the Comp Facility shall provide for a minimum of 221 days of liquid manure storage volume based on the design capacity approved in the PTO. The 221 days of liquid manure storage volume shall also account for any additional materials or wastes brought into the Comp Facility for use in a digester at the Comp Facility.

VII. SUBMITTAL OF DOCUMENTS, NOTICES, AND SUBMITTAL REVIEW

21. All documents required to be submitted and/or notices required to be given to the ODA LEPP under this Consent Order shall be submitted to:

Ohio Department of Agriculture
Livestock Environmental Permitting Program
Attention: Kevin Elder (or his successor)
8995 East Main Street
Reynoldsburg, Ohio 43068-3399

22. If ODA makes comments or requests revisions to the submittals required by this Consent Order, Defendants shall submit responses or revisions within thirty (30) days of receipt of comments or requests as identified above.

VIII. CIVIL PENALTY

23. Pursuant to R.C. 903.16, Defendants are ordered to pay to the State of Ohio a civil penalty of \$100,000 in two equal installments of \$50,000. The first \$50,000 payment shall be

made on or before July 31, 2011, and the second \$50,000 payment shall be made on or before December 31, 2011. The civil penalty shall be paid by certified check for the appropriate amount, made payable to "Treasurer, State of Ohio," delivered by mail or otherwise, to Karen Pierson, Paralegal, or her successor, Ohio Attorney General's Office, Environmental Enforcement Section, 30 East Broad Street, 25th Floor, Columbus, Ohio 43215.

24. In the event that Defendants fail to timely make the payments as set forth in Paragraph 23, any remaining balance of the total civil penalty shall then become immediately payable to the State in its entirety in addition to any interest accrued from the date of Defendants failure to timely make the payments as set forth in Paragraph 23 in accordance with the calculation method set forth in R.C. 5703.47.

IX. STIPULATED PENALTIES

25. In the event that Defendants violate Paragraph 11 by stocking more than 699 dairy cows and/or stocking more than 999 cattle other than dairy cows prior to (1) ODA approval and issuance of a PTI and PTO for the Comp Facility and/or (2) stocking approval for the Comp Facility from ODA, Defendants shall immediately and automatically be liable for, and shall pay a stipulated penalty of five thousand dollars (\$5,000) for each day that Defendants stock more than 699 dairy cows or stock more than 999 cattle other than dairy cows at the Comp Facility.

26. In the event that Defendants violate Paragraph 12 by stocking more than 1,000 dairy cows prior to written approval from ODA for the use of the new stormwater pond for the Comp Facility, Defendants shall immediately and automatically be liable for and shall pay a stipulated penalty of five thousand dollars (\$5,000) for each day that Defendants stock more than 699 dairy cows or stock more than 999 cattle other than dairy cows at the Comp Facility.

27. In the event that Defendants violate Paragraphs 11 and/or 12 by failing to comply with any requirement to reduce the design capacity and/or the number of dairy cows to a total below 700 dairy cows and to reduce the design capacity and/or the number of cattle other than dairy cows below 1,000 cows at the Comp Facility, Defendants shall immediately and automatically be liable for and shall pay a stipulated penalty of one thousand dollars (\$1,000) for each day that Defendants fail to reduce the design capacity and/or the number of dairy cows to a total below 700 dairy cows and to reduce the design capacity and/or the number of cattle other than dairy cows below 1,000 cows.

28. In the event that Defendants fail to meet any deadline or requirement contained in Paragraphs 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, or 20 except for those deadlines or requirements previously addressed in Paragraphs 25 through 27, Defendants shall immediately and automatically be liable for, and shall pay a stipulated penalty according to the following payment schedule:

(a) For each day of failure to meet a specified deadline or requirement, up to sixty (60) days, three hundred dollars (\$300) per day for each deadline missed or requirement not met;

(b) For each day of failure to meet a specified deadline or requirement, from sixty-one (61) days to one hundred and twenty (120) days, five hundred dollars (\$500) per day for each deadline missed or requirement not met;

(c) For each day of failure to meet a specified deadline or requirement, from one hundred twenty one (121) days to one hundred eighty (180) days, seven hundred fifty dollars (\$750) per day for each deadline missed or requirement not met;

(d) For each day of failure to meet a specified deadline or requirement, from one hundred eighty-one (181) days and over, one thousand dollars (\$1,000) per day for each deadline missed or requirement not met.

29. In the event that Defendants fail to meet any requirement, term, or condition of any permit issued by ODA to any Defendant, the Defendants shall immediately and automatically be liable for and shall pay a stipulated penalty according to the following payment schedule, in addition to any other penalty set forth:

(a) For each day of failure to meet a specified requirement, term, or condition up to sixty (60) days, three hundred dollars (\$300) per day for each deadline missed or requirement not met;

(b) For each day of failure to meet a specified requirement, term, or condition, from sixty-one (61) days to one hundred and twenty (120) days, five hundred dollars (\$500) per day for each deadline missed or requirement not met;

(c) For each day of failure to meet a specified requirement, term, or condition, from one hundred twenty one (121) days to one hundred eighty (180) days, seven hundred fifty dollars (\$750) per day for each deadline missed or requirement not met;

(d) For each day of failure to meet a specified requirement, term, or condition, from one hundred eighty-one (181) days and over, one thousand dollars (\$1,000) per day for each deadline missed or requirement not met.

30. Any payment of stipulated penalties required to be made under this Section of the Consent Order shall be made by delivering by mail or otherwise, a certified check for the appropriate amount made payable to the order of "Treasurer, State of Ohio" to Karen Pierson,

Paralegal, or her successor, at Ohio Attorney General's Office, Environmental Enforcement Section, 30 East Broad Street, 25th Floor, Columbus, Ohio 43215 within thirty (30) days from the date of the failure to comply with this Consent Order. Defendants shall also state in writing the specific provision of the Consent Order that was not complied with and the dates of non-compliance. Payment of stipulated penalties and acceptance of such stipulated penalties by Plaintiff for specific violations pursuant to this Section of the Consent Order shall not be construed to limit Plaintiff's authority to seek additional relief pursuant to R.C. Chapter 903, or to otherwise seek judicial enforcement of this Consent Order.

X. RETENTION OF JURISDICTION

31. The Court will retain jurisdiction of this action for the purpose of enforcing and administering Defendants' compliance with this Consent Order.

XI. COURT COSTS

32. Defendants are ordered to pay the court costs of this action.

XII. ENTRY OF CONSENT ORDER AND FINAL JUDGMENT BY CLERK

33. Pursuant to Rule 58 of the Ohio Rules of Civil Procedure, upon the signing of this Consent Order by the Court, the clerk is directed to enter it upon the journal. Within three (3) days of entering the judgment upon the journal, the clerk is directed to serve upon the parties notice of the judgment and its date of entry upon the journal in the manner prescribed by Rule 5(B) of the Ohio Rules of Civil Procedure and note the service in the appearance docket.

XIII. SIGNATORIES

34. Each of the undersigned representatives for the parties represent that he/she is fully authorized to enter into the terms and conditions of this Consent Order and legally bind the respective Party to this document.

IT IS SO ORDERED.

Judge Gary L. Yost

DATE

JUDGE, COURT OF COMMON PLEAS
ASHTABULA COUNTY

APPROVED:

**RICHARD CORDRAY
OHIO ATTORNEY GENERAL**

Aaron S. Farmer

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Counsel for the Plaintiff

COMP DAIRY FARM, LTD.

James W. Comp

James W. Comp
Owner/Operator
Defendant

COMP PROPERTIES, LTD.

James W. Comp

James W. Comp
Owner/Operator
Defendant
JAMES W. COMP

James W. Comp

James W. Comp
Defendant

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Counsel for Defendants

EXHIBIT A

HYDROGEOLOGICAL INVESTIGATION WORK PLAN FOR

COMP DAIRY FARM, LTD.

DORSET, OHIO

1.0 INTRODUCTION/OBJECTIVE

This Hydrogeological Investigation Work Plan (HIWP) has been prepared by Germane Environmental Consulting, LLC (GEC), on behalf of Comp Dairy Farm, Ltd. (CDF). It has been prepared pursuant to a request from the Ohio Department of Agriculture (ODA) Livestock Environmental Permitting Program (LEPP) per the Permit to Install (PTI) application comments received by CDF. The exact comment is "Groundwater monitoring will need to be added for existing and proposed manure storage ponds".

The work described herein is consistent with standard investigation procedures used by consultants completing environmental site investigations. The tasks described are necessary to determine the baseline environmental conditions of the farm's groundwater in the vicinity of the farm's existing three manure ponds to confirm they have not historically impacted the local aquifer.

The purpose of this hydrogeological investigation is two-fold: 1) to evaluate the current groundwater conditions (baseline) and thereby determine if the existing

Hydrogeological Investigation Work Plan
Comp Dairy Farm, Ltd. – Dorset, Ohio
Revised August 2010

ponds are polluting the ground water and 2) provide a method to monitor the integrity of the manure ponds in the future.

The work embodied in this HIWP is based on the following objectives:

- Supplement the existing available chemical and geophysical information pertaining to environmental conditions at the farm,
- Supplement the existing available information pertaining to fate and transport mechanisms that influence the occurrence of potential constituents of interest in the study area,
- Identify potential exposure pathways, along with estimates of exposure and risk, to human health and the environment, if appropriate,
- Collect the environmental data necessary to implement a feasibility study and support corrective action assessment and remedy decision-making, if appropriate, and
- Collect information to evaluate if historic releases have occurred from the farm's three manure ponds.

2.0 SITE BACKGROUND

CDF desires to become an approved dairy farm under State of Ohio rules and regulations to operate with up to 1,200 adult cows. Any dairy farm with 700 or more adult animals must receive a Permit to Operate (PTO) and PTI from the Ohio Department of Agriculture (ODA) LEPP. A permit application was submitted in 2008 and comments from ODA were received by the farm owner, Mr. James W. Comp, Sr., in December 2008.

The farm's business address is 3015 Allen Comp Road in Dorset, Ohio in Ashtabula County. The main farmstead is located at the same address (see Figure 1 for the farm location).

All manure from the mature cows, including sawdust bedding, is handled as a liquid and stored in one of three permanent holding ponds. Two ponds are located at the Main Farmstead and the third, known as the "Satellite Manure Pond", is located about two miles northeast of the Main Farmstead on Footville-Richmond Road.

3.0 SITE GEOLOGY

The purpose of this HIWP is to outline the tasks required to install monitoring wells (MWs) at CDF's two manure storage locations. Previous subsurface investigations at the Main Farm have shown the subsoil's are primarily silt with some clay. In a 2007 study, soil scientists from NRCS predicted the soil contained too much silt to be used as a natural soil liner for a manure pond. Subsequent laboratory testing by The Dragun Corporation, Farmington Hills, Michigan and GEC has shown the soils have a remolded hydraulic permeability between 10^{-6} and 10^{-8} centimeters/second (cm/s).

Previous studies show the dairy farm lies in an area of lean clay glacial till. The glacial till is shallow, typically ranging from 11 to 14 feet below ground surface (bgs) before encountering the shale bedrock. The shale serves as an aquifer for the area and many private domestic wells in the area tap the shale as their groundwater source.

Generally, during past excavation and drilling events, the soils above the bedrock are dry. Therefore, all MWs installed under this Work Plan will be installed into the shale bedrock so water samples can be obtained for laboratory testing.

4.0 INVESTIGATION TASKS

4.1 Overview of Investigation Work

The scope of work described below uses a multiple lines of evidence approach to support potential corrective action decision making as recommended by the United States Environmental Protection Agency (USEPA). The following work will be conducted as part of this groundwater investigation:

- Geomorphology evaluation, historical and current land use, and evaluation of floodplain, riverbed form and channel features,
- Soil borings, including record of grain size and lithology observations,
- Monitoring well installation, including surveying of the well casing elevations and locations,
- Monitoring well sampling and measurement of groundwater elevations,
- Data analysis using screening-level and baseline ecological risk assessments (SLERA and BERA, respectively),
- Human health risk assessment (HHRA), and
- Report preparation.

4.2 Monitoring Well Installation

As shown in Figure 2, a total of three MWs are proposed to be installed at each of the two CDF locations initially. This work constitutes “Phase I” of the study; the goal of Phase I is to determine the actual groundwater flow direction for each area so that true upgradient and down gradient MWs can be installed at a later date to monitor each existing manure storage pond. For Phase I, the proposed well locations are as follows:

Hydrogeological Investigation Work Plan
Comp Dairy Farm, Ltd. - Dorset, Ohio
Revised August 2010

- Three wells will be located at the Main Farm on the east side of the stream, and
- Three wells will surround the Satellite Manure Storage Pond.

Figure 2 shows the approximate locations of these six wells. Actual monitoring well locations will be determined in the field by the supervising geologist considering overhead obstacles, buried utilities, and farmer input to avoid high traffic areas, snow plowing, etc. Wells will be set into bedrock at a depth sufficient to intersect the first water-bearing unit. Additional deep wells (set at a residential drinking water level depth) may be installed if vertical information is required to delineate potential impacts from the existing lagoons, but such efforts will not occur until written approval from ODA is received.

Following completion of installation of the first six MWs, the groundwater elevation of these wells will be measured and mapped to determine the actual groundwater flow direction. GEC will then recommend locations for future wells such that each existing manure pond will have at least one upgradient and two down gradient MWs. Any subsequent MWs installed will occur during "Phase II" of this study. Regardless of when the monitoring well is installed, it will follow the procedures listed below.

All monitoring wells will be installed using a truck-mounted drill rig using 6.25-inch hollow stem augers in accordance with the United States Environmental Protection Agency Monitoring Well Installation Standard Operating Procedure (SOP) #2048. A copy of this SOP is included in Appendix A. Augers will be advanced through the

Hydrogeological Investigation Work Plan
Comp Dairy Farm, Ltd. - Dorset, Ohio
Revised August 2010

unconsolidated layer until refusal at the surface of the bedrock, at which point the augers will be set as surface casing. Drilling will continue using air rotary methods (to allow for representative sampling of lithology and water content) as the boring is advanced. In accordance with Rule 901:10-2-03(A), the person responsible for conducting the geological exploration will be a professional engineer with technical support provided by a geologist under the direct supervision of Certified Professional Geologist.

For each soil boring installed, the soil type and depth will be observed and recorded, in accordance with Rule 901:10-2-03(A)(1) and (B)(2)(a), along with the water content. To ensure water samples can be collected from the MWs, they will be screened at least 5 feet into the saturated bedrock at an expected depth of approximately 30 feet bgs or less. The well construction will include a 10-slot, 2" diameter, schedule 40 PVC screen with 2" schedule 40 PVC casing to the surface. Screen length and depth will be determined in the field by the drilling contractor, the onsite geologist and the observed geology. If the bedrock is competent, an open hole will be left in the bedrock (i.e., no casing) as shown in Figure 3.

The annular space around the screen will be filled with sand pack suitable for 10-slot screens. The sand pack will be topped by a 1-foot interval of bentonite pellet seal, followed by bentonite grout to the surface. All MWs will be installed as stick-up wells with the steel-protective casing elevated above the surround grade level; protective bollards will be installed at all MWs to protect the steel riser.

Hydrogeological Investigation Work Plan
Comp Dairy Farm, Ltd. – Dorset, Ohio
Revised August 2010

Each monitoring well will include an outer protective casing, set in a concrete pad at the surface. The protective casing must have a telescoping or hinged cover and key padlock attached to minimize unauthorized entry and potential groundwater sabotage. Each protective casing/monitoring well will be protected by three, 3-inch diameter, bollards (concrete-filled guard post) extending a minimum of 3 feet above grade and set into a concrete filled hole a minimum of two feet deep.

Drillers will develop wells by surging and over-pumping until the water produced is clear. Purge water will be discharged to the surface. Drilling services will be provided by Chatfield Drilling, Inc., Greenville, Pennsylvania, an environmental drilling and licensed water well firm with bedrock drilling experience.

Any soil borings abandoned due to refusal and not included as part of the permanent groundwater monitoring program shall be abandoned. Abandonment will include filling the borehole with a bentonite grout to within 1 foot of the surface. The remaining 1 foot interval will be filled with topsoil and mounded at the surface to allow for settlement.

Logs for all borings and wells will be included in the final report, and will contain the following information:

- Soil types/descriptions according to the Unified Soil Classification System,
- Rock cuttings descriptions,
- Boring name,
- Location,

**Hydrogeological Investigation Work Plan
Comp Dairy Farm, Ltd. – Dorset, Ohio
Revised August 2010**

- Total depth,
- Drilling and abandonment method (if applicable),
- Method of sampling,
- Sample depth,
- Date of boring,
- Water level measurements,
- United States geological survey ground elevation, and
- Standard penetration number calculated in accordance with the method specified in the standard penetration test, ASTM D1586–84.

Waste produced during the investigation will be limited to cleaning wastes and disposable materials generated during field work. Potentially contaminated sediment, water, and Personal Protective Equipment (PPE) will be managed as residual waste and classified into two categories: (1) solid materials consisting of sediments, soil, sediment and soil samples left over from sampling activities or returned from the laboratory; damaged core tubes, used plastic and stainless steel liners, used PPE, and other materials used in the handling, processing and storage of sediment and soil; and (2) liquid wastes such as wastewater and aqueous samples. To the extent practical, these materials will be segregated and handled separately according to their classification.

If field conditions not anticipated by this HIWP are encountered then ODA will be immediately notified of the problem(s) and the recommended deviation. To minimize down-time in the field during the investigation's on-site activities, a request for verbal approval by ODA will be sought so that field efforts may continue without incurring a

Hydrogeological Investigation Work Plan
Comp Dairy Farm, Ltd. – Dorset, Ohio
Revised August 2010

second mobilization fee. Nonetheless, CDF recognizes written approval from ODA is required for the modification to be officially accepted. As a matter of record, the well installation driller/contractor will provide written confirmation of all changes discussed with ODA verbally within 10 (ten) working days of ODA's verbal approval.

4.3 Water Level Data Collection

For the six MWs installed during Phase I of this investigation the groundwater elevation will be measured on two different dates, separated by a period of two months. Two water level evaluation events are proposed before the report is completed for the following reasons:

- Allows well sampling during times of the year with different climatic conditions, and
- Permits two data sets to more precisely determine groundwater flow direction.

Water level measurements will be collected using an electronic water level indicator, similar to a Solinst Model 101 Water Level Meter, to the nearest 0.01 feet as measured from the north edge of the well riser.

The data collected from these two water level measurements will be used to determine the locations for additional monitoring well locations. It is possible the initial MWs used to determine groundwater flow direction may not be appropriately located for future use during the groundwater characterization study, known as "Phase II" of this farm investigation.

**Hydrogeological Investigation Work Plan
Comp Dairy Farm, Ltd. – Dorset, Ohio
Revised August 2010**

After the second groundwater flow measurement, groundwater flow maps will be generated and sent to ODA for review and comment in a short report. The locations of the Phase II MWs will be suggested in this report (a minimum of one upgradient and two down gradient wells are required for each manure pond). The final number of MWs needed to allow sampling of the groundwater at the Main Farm and Satellite Manure Pond is unknown until the Phase I tasks are completed.

4.4 Characterize Groundwater Concentrations

Characterization, or sampling, of the groundwater in the bedrock aquifer is necessary to determine if the groundwater is impacted. Sampling will also establish a baseline for noting changes in groundwater concentrations in the coming years.

Approximately two weeks after the Phase II MWs are installed and developed groundwater samples will be collected from each designated upgradient and down gradient monitoring well for each of the three existing manure storage ponds. The delay before sampling begins allows the groundwater conditions to return to "normal" following the disruptions of the well installation and development. Field parameters of the groundwater, including temperature, pH, DO, ORP, conductivity and turbidity, will be monitored and recorded while the well is purged, using low flow sampling techniques, as set forth in Puls and Barcelona, 1996. In addition, the groundwater elevation of all MWs will be measured prior to sampling. This will permit an evaluation of the changes in groundwater flow direction over a longer interval than the initial two measurements.

Hydrogeological Investigation Work Plan
Comp Dairy Farm, Ltd. – Dorset, Ohio
Revised August 2010

Low-flow sampling methodology is superior to the traditional method of purging a MWs of three well volumes from the well casing since it insures that true groundwater is being tested by the laboratory instead of water that was already in the casing. This assurance is possible because the water in the casing is continuously pumped at a low rate by a small electric pump (usually powered by a field vehicle's 12-volt system) while a number of field parameters are continuously sampled and evaluated for change. The parameters tested are temperature, pH, DO, ORP, conductivity, and turbidity and once stabilized one is confident the water being withdrawn from the monitoring well through the disposable poly tube is from the surrounding formation and not impacted from remaining in the well casing for a long duration.

Furthermore, since these MWs will be installed in bedrock and placed to intersect the uppermost water bearing zone, the yield from the MWs may be small. Removal of the standard three or fewer well-casing volumes may easily pump the well dry and not yield any samples for laboratory testing. Using the proposed low-flow sampling techniques is the best technique for this investigation.

Table 1 lists the analytical parameters for which the groundwater will be tested. All samples will be sent to the Brighton Analytical Laboratory, Brighton, Michigan, for testing. All reporting will comply with Laboratory Test Results and Analysis per Rule 901:10-2-03(D).

Table 1 – Proposed Water Sample Test Parameters

Parameter	Method Detection Limit (mg/L)	EPA Method
Nitrate	0.010	EPA 353.2
Coliform	N/A	EPA 1604
Total Dissolved Solids	N/A	Gravimetric
Specific Conductance	N/A	Field
pH	N/A	Field

If one or more of the MWs shows contamination, then additional MWs will be needed to determine the extent of groundwater contamination. In this case, a map showing the proposed additional monitoring well locations will be provided to ODA as part of a Remedial Action Plan (RAP) the farm will provide within 45-days after initial recognition of contamination. All wells installed due to discovery of groundwater contamination will be considered "Phase III" of this investigation and would be proposed in the RAP. Phase III field investigation activities will not begin until after completion of the final investigative report (see Section 6) for Phase II activities.

If the selected MWs do not show any contamination, then each well will be tested two more times (at three months intervals) to confirm that groundwater has not been impacted at both locations from past operation of the manure storage ponds.

**Hydrogeological Investigation Work Plan
Comp Dairy Farm, Ltd. – Dorset, Ohio
Revised August 2010**

Following completion of the third and final sampling event, a Phase II final report will be completed (see Section 6). Prior to submitting this final report ODA will be provided short summary letters and tables of all investigation work as it occurs, especially as it relates to further field work.

Note – nothing in this HIWP commits CDF to conduct additional groundwater sampling beyond the three sampling events discussed above. However, if a RAP is necessary, then additional groundwater sampling events will occur.

In addition, CDF recognizes groundwater testing of the designated Phase II MWs will be required twice yearly for the duration of the operation of the facility to satisfy ODA requirements. The purpose of this on-going sampling effort is to confirm all existing and proposed manure/stormwater ponds operate as designed (i.e, do not release nutrients to the local environment).

5.0 QUALITY ASSURANCE AND QUALITY CONTROL

Sample and data collection activities will be carried out in accordance with industry standard Quality Assurance (QA) and Quality Control (QC) procedures. The work outlined in this Work Plan will be completed following industry standard operating procedures (SOPs) that provide guidance for field documentation, sampling procedures, sample custody, analytical methods, and field and laboratory QA/QC procedures.

Any subcontractors hired to complete this investigation will be given a copy of the appropriate SOPs so they meet applicable requirements.

5.1 Data Quality Objectives

Data Quality Objectives (DQOs) are based on the premise that different data uses require different levels of data quality. Data quality refers to a degree of uncertainty with respect to precision, accuracy, representativeness, completeness, and comparability. Specific objectives are established to develop sampling protocols and identify applicable documentation, sample handling procedures, and measurement system procedures.

These DQOs are established for site-specific conditions, the objectives of the project, and based on the knowledge of available measurement systems.

Hydrogeological Investigation Work Plan
Comp Dairy Farm, Ltd. – Dorset, Ohio
Revised August 2010

A wide range of data quality is achieved through the use of various analytical methods. The following data quality levels are widely accepted as descriptions of the different kinds of data that can be generated for various purposes:

- Level I: Field screening or analysis using portable instruments (e.g., photo-ionization detector {PID}). Results are often not compound specific; however, results are available in real time. Depending on the analysis being performed and the instrumentation used, the results may be considered qualitative, semi-quantitative, or quantitative.
- Level II: Field analysis using more sophisticated portable analytical instruments (e.g., onsite mobile laboratory). There is a wide range in the quality of data that can be generated depending on the use of suitable calibration standards, reference materials, and sample preparation equipment. Results are available in real-time or typically within hours of sample collection.
- Level III: All analyses performed in an off-site analytical laboratory using USEPA-approved analytical methods other than the Contract Laboratory Program (CLP) Routine Analytical Service Protocols. These data are typically used for engineering studies (e.g., treatability testing), risk assessment, site investigations, and remedial design, and may be suitable for litigation/enforcement activities. Results are both qualitative and quantitative.
- Level IV: These data are generated using the USEPA CLP methods and supported by a rigorous QA program, supporting documentation, and data review procedures. These data are suitable for use in site characterizations, risk assessments, enforcement/litigation activities, and design of remedial alternatives.

**Hydrogeological Investigation Work Plan
Comp Dairy Farm, Ltd. - Dorset, Ohio
Revised August 2010**

For this investigation, Level III data quality packages will be obtained for laboratory chemical analysis and contain the necessary information to support data validation in accordance with USEPA guidelines.

Chemical analyses will be conducted in accordance with the most recent versions of USEPA SW-846 Test Methods for Evaluating Solid Waste, Physical and Chemical, USEPA Methods for the Analysis of Water and Wastewater, certain draft USEPA methodologies, or specialized analytical procedures that are recognized in environmental industry and have been published in peer-reviewed scientific literature.

6.0 HYDROGEOLOGICAL INVESTIGATION REPORT

The environmental sampling and water elevation monitoring results, and survey data generated during the Phase II investigation work will be compiled into a single report for ODA at the conclusion of the work. This report shall be known as the Hydrogeological Investigation Report. A complete description of data generation and reporting procedures is provided in Appendix B, Data Management Procedures. In summary, Level III data packages will be provided by laboratories and will contain information necessary to support independent data validation in accordance with USEPA guidelines (USEPA 2004, 2005b).

The completed Hydrogeological Investigation Report will include well logs of wells located within a minimum of 1,000 feet of the existing manure pond, manure lagoon, or manure structure per Rule 901:10-2-03(C)(1)(b) under investigation. Further, it shall include all of the following provisions, where applicable:

- Describe the regional hydrogeologic conditions, including regional and local geology and surface and groundwater conditions,
- Discuss the groundwater flow direction, groundwater velocity, 3-dimensional flow path within the aquifer, interconnection between aquifers, and existing groundwater quality. For groundwater not in an aquifer, determine that the hydraulic or other physical properties, or both, are such that the formation would not be considered an aquifer,
- Soil boring logs or other test methods to determine the composition of

Hydrogeological Investigation Work Plan
Comp Dairy Farm, Ltd. – Dorset, Ohio
Revised August 2010

subsurface materials, locate and determine the thickness of aquifers,

- Discuss interconnections between the on-site aquifer and other aquifers in the vicinity of the site,
- Horizontal hydraulic conductivity of the aquifer to allow calculation of groundwater flow velocity,
- Estimated vertical gradients within the aquifer – if water level data suggest vertical flow is occurring,
- Specific conductance as an indication of dissolved solids as measured during sampling,
- A general description of the geology of the surrounding area and how it relates to the geology and hydrogeology of CDF's Main Farm and Satellite Manure Pond sites, including formations used as water supplies in the area,
- A narrative description of the hydrogeologic data collected and interpretation of the laboratory data,
- Cross sections showing a two-dimensional representation of the geology of the site sufficient to reflect the site geology and hydrogeology,
- A map of the site, drawn to scale with a north arrow, which indicates the surveyed locations of any soil borings, observation and monitor wells, and test pits and other areas of physical testing and which has a groundwater contour overlay that indicates groundwater flow direction with a maximum contour interval of 1 foot. The top of well casings shall be surveyed and referenced to United States Geological Survey data accurate to 0.01 foot by a licensed land

Hydrogeological Investigation Work Plan
Comp Dairy Farm, Ltd. – Dorset, Ohio
Revised August 2010

surveyor or professional engineer licensed by the State of Ohio Board of Registration for Professional Engineers and Surveyors, and

- A map of the surrounding area that shows the direction of surface drainage and all of the following within 0.25 miles of the farmstead:
 - (A) Representative private water supply wells,
 - (B) All municipal water supply wells,
 - (C) Irrigation and disposal wells,
 - (D) Lakes,
 - (E) Ponds,
 - (F) Streams,
 - (G) Springs, and
 - (H) Wetlands.

If groundwater at the investigated site is deemed “contaminated” then the Hydrogeological Investigation Report will provide an estimated delineation of the portion of the aquifer contaminated and a description of each substance that exceeds the regulatory criteria. In this situation, it is expected ODA will require further information on the nature of contamination especially if the department determines there is a significant likelihood that the extent or magnitude of that contamination could affect neighboring property(ies) or water supply wells.

The Hydrogeological Investigation Report will be completed within 45 days following collection of the third monitoring well sampling event. The complete timeline for the projected project schedule is provided in the next section.

7.0 SCHEDULE

Completion of the initial tasks will proceed in accordance with the schedule provided below; other dates are contingent on AG and/or ODA negotiations.

Task Description	Approximate Completion Date
LEPP approval of Work Plan	September 2010
Confirm Completion Schedule	October 2010
Install "Phase I" MWs	TBD
Obtain first round of groundwater elevation measurements	TBD
Provide recommendations to ODA on additional Phase II monitoring well locations	TBD
Measure groundwater elevations second time	TBD
Receive LEPP approval of additional monitoring well location(s)	TBD
Install "Phase II" monitoring wells	TBD
Sample designated monitoring wells	TBD
2 nd and 3 rd monitoring well sampling events	TBD
Submit investigation report	TBD

Note: TBD = To be determined