Environmental GEO-Technologies, LLC

May 19, 2014

Ms. Lisa Perenchio
U. S. Environmental Protection Agency
Region 5
Underground Injection Control
77 West Jackson Boulevard (WU-17J)
Chicago, Illinois 60604-3590

Attention: Direct Implementation Section

RE: Well Cleaning

Dear Ms. Perenchio:

For your information Subsurface Technology, Inc. has been contracted by Environmental Geo-Technologies, LLC (EGT) for testing and cleaning of our Underground Injection Control Permitted Class I Disposal Wells No. MI-163-1W-C010, and MI-163-1W-C011, located at 28470 Citrin drive Romulus, MI 48174.

This testing and cleaning is being performed to maximize the operational flow rate of the wells within the allowable limits of our permits. Integrity of the injection string and the annulus system will be maintained during this process. This work will start on May, 20 of 2014 and follow the Subsurface Clean-Out Procedures attached to this document.

Thank you.

Environmental Geo-Technologies, LLC

John Frost

General Manager

cc: Mr. Richard Powals, Environmental Geo-Technologies
Mr. Tom Athans, Helicon Holdings

P 734-946-1000 F 734-946-1002 - 28470 Citrin Drive. Romulus, Michigan 48174
www.envgeotech.com

CLEAN-OUT PROCEDURES
ENVIRONMENTAL GEO-TECHNOLOGIES, LLC
WELL #1-12
ROMULUS, MICHIGAN

- Prepare and send notification and procedures to U. S. EPA Region 5 and MDEQ.
- Maintain normal annulus pressure during entire procedure. Surface pressure will not exceed permitted maximum allowable surface injection pressure.
- Remove east half of roof of Well #1-12 well house. Remove all walls that were supporting this roof section (by EGT).
- Spot two (2) 500 bbl frac tanks on asphalt roadway north of Well #2-12 (by EGT).

<u>Day 1 – Tuesday, May 20, 2014</u>

- Conduct safety talk and lay-out work details.
- Rig-up coil tubing unit of Well #1-12 with 1-3/4" tubing and all related equipment.
- Run coil tubing in well and jet with nitrogen water with foamer. Clean and drill out as much as possible to obtain original total depth (4645' KB measured depth). Care should be taken to avoid shocks resulting in damage to aged fiberglass injection string.
- Circulate out returns to frac tanks.
- Once hole is cleaned and conditioned, using coil spot approximately 850 gals of EDTA – Versean 100 while coming out of hole.

CLEAN-OUT PROCEDURES
ENVIRONMENTAL GEO-TECHNOLOGIES, LLC
WELL #1-12
ROMULUS, MICHIGAN
(Continued)

Day 2 – Wednesday, May 21, 2014

- Secure well for next 24-hours allowing EDTA to soak.

Day 3 – Thursday, May 22, 2014

- Rig up acid pumping equipment.
- Run coil into hole and prepare for acid stimulation.
- Acid stimulation to consist of the pumping of:

  3000 Gal 15% Hcl
  3000 Gal 12/3 Mud Acid

- Rig down coil tubing and acid equipment and secure site.
- Turn well back over to EGT.
- Write report.

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

REPLY TO THE ATTENTION OF:
WU-16J

MAY 23 2014

CERTIFIED MAIL 7009 1680 0000 7662 1373
RETURN RECEIPT REQUESTED

Mr. Tom Athans
Vice President
Helicon Holdings
28470 Citrin Drive
Romulus, Michigan 48174

CEASE INJECTION ACTIVITY

Re: Well #1-12, Wayne County, Michigan; U.S. Environmental Protection Agency Underground Injection Control Permit Number MI-163-1W-C010; Michigan State Number M452

Dear Mr. Athans:

This letter is to confirm your telephone message of May 22, 2014 in which you reported the loss of mechanical integrity for the injection well referenced above. You are hereby notified that this well must remain shut in until the requirements in the paragraph below are met. Continued injection is a violation of your permit, the Underground Injection Control regulations and the Safe Drinking Water Act.

Within 45 days from the date of this letter, you must satisfy the mechanical integrity requirements of Part I(H) of your permit. You should notify the EPA contact, Jeffrey McDonald, at (312) 353-6288, at least 30 days in advance to schedule the witnessing of the mechanical integrity test. The scheduling of the witnessing of the mechanical integrity test must go through the Region 5, Chicago office. Injection may not resume until you have met these requirements and received written authorization to resume injection.

You should be aware that violations of the Safe Drinking Water Act and Underground Injection Control regulations are subject to Administrative Orders which may include penalties of up to $187,500, civil penalties of up to $37,500 per day of violation, and criminal penalties of up to 3 years imprisonment and fines in accordance with Title 18 of the United States Code.

Sincerely,

for Stephen M. Jann, Chief
Underground Injection Control Branch

cc: Mark Snow, MDEQ

Richard Powals

From:	Tom Athans <tathans@heliconholdings.com>
Sent:	Tuesday, May 27, 2014 3:13 PM
To:	roy.stephen@epa.gov; jann.stephen@epa.gov; Batka, Allan
Cc:	jim@heliconholdings.com; 'Sofocles Papas'; 'Rick Powals'; jfrost@envgeotech.com; vugrinovichr@michigan.gov
Subject:	Annular Pressure Test
Attachments:	Annular Pressure Test 5 27 2014.pdf; EGT APT 1.pdf

Good afternoon Steve,

Concurrent with our earlier discussion regarding the Cease Injection Order dated May 23, 2014, attached is a copy of the Annular Pressure Test conducted today that was witnessed and certified by Jack Lanigan of the MDEQ. The test was successful and confirms continued internal mechanical integrity of Well #1. Attached please find the certification from MDEQ and the supporting computer charts generated from the test.

If you require anything further, please contact me immediately.

We appreciate EPA's efforts in finding an expedient remedy to this matter and look forward to receiving EPA's authorization to recommence injection into Well #1.

Regards,

Tom Athans
Vice President
Helicon Holdings
28470 Citrin Drive
Romulus, Michigan 48174
(734) 946-1000 Office
(734) 946-1002 Fax

DEQ

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY – OFFICE OF GEOLOGICAL SURVEY

ANNULAR PRESSURE TEST

By authority of Part 615 or Part 625 of Act 451 PA 1994, as amended. Non-submission and/or falsification of this information may result in fines and/or imprisonment.

Permit Number: **M452 MI-163-1W-C0007**

Well name & No.: **EDS 1-12**

Surface location: **SW** 1/4 of **NW** 1/4 of **SE** 1/4, Section **12** T **03S** R **09E**

Name and address of permittee:
Environmental Geo-Technologies, LLC
28470 Citrin Drive
Romulus, MI 48174

Township: **Romulus** County: **Wayne**

Well type:
Part 615 ☐ Secondary recovery ☐ Brine disposal
Part 625 ☒ Waste disposal ☐ Solution mining

Date of test: 27 May 2014

Casing: **7" at 4080 feet**

Tubing: ~~4045~~ 4.5 inch fiberglass

Type of gauge: ROSEMOUNT 3003 1AFM5 inch face psi range S/N 0058973

Packer type/model: Guiberson Uni-Packer VI

Packer depth: 4066

New gauge ☐ Yes ☒ No
if no, enter date of test calibration 12/4/12

Type of non-corrosive liquid in the annulus: Diesel fuel & Brine

Average rate during injection

Maximum allowed injection pressure: **765 psi**

TEST DATA

Pressure readings (psig)

Time	Annulus	tubing	Time	Annulus	tubing
1:29 pm	911 psi				
1:34 pm	910				
1:44 pm	909				
1:54 pm	909				
2:04 pm	908				
2:14 pm	908				
2:24 pm	908				

Comments: observed change of 3 psi over 60 minutes well demonstrated internal mechanical integrity

Certification if witnessed by DEQ representative:

Signature of DEQ employee John C Lanigan Date 27 May 2014

Certification if not witnessed by DEQ representative: "I state that I am authorized by said owner. This report was prepared under my supervision and direction. The facts stated herein are true, accurate and complete to the best of my knowledge."

ature Date

MAIL TO: OFFICE OF GEOLOGICAL SURVEY
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
PO BOX 30256
LANSING MI 48909-7756

EQP 7606 (rev. 8/2004)

Environmental GEO-Technologies, LLC

May 28, 2014

United States Environmental Protection Agency
Region 5, WU-16J
77 West Jackson Blvd.
Chicago, Illinois 60604-3590
ATTN: UIC Branch, DI Section

Re: Written Report

Ladies & Gentlemen:

Environmental Geo-Technologies, LLC ("EGT") hereby timely [within five (5) working days] submits a Written Report (attached) in conformance with its UIC Injection Permit # MI-163-1W-C010, Part 1.E.12.d.3 for an occurrence on May 21, 2014 that was timely [within twenty-four hours] verbally reported to Mr. Allan Batka on May 22, 2014.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

We trust that you find this report satisfactory, however, if you have any questions or comments, please feel free to contact us.

Sincerely,

Richard J. Powals, P.E.
Chief Operating Officer

cc: J. Frost (EGT), T. Athans (HH)

att.

052814/rjpEGTEPAWell#1WrittenReport052814

MEMORANDUM

Date: 5/21/14

To: File

From: John Frost

RE: Annulus pressure drop from loose flange on wellhead # I

At 1:30 pm today during an injection into well # I there was a malfunction in the annulus system which resulted in a temporary loss of annulus pressure that exceeded the minimum differential pressure of 100 psi. This pressure loss was witnessed as it occurred by a deep well operator, and the injection was immediately halted for investigation. A spray of diesel fuel was found to be coming from a bolted flange above ground within secondary containment inside the wellhead # I building. The annulus pump emergency shut off switch was pressed to de-energize the annulus pump, and the valve was closed from the diesel fuel supply tank to the wellhead.

The flange that caused the pressure loss was found to have two loose bolts. Immediately these bolts were properly tightened and 10 gallons of diesel fuel were pumped into the diesel fuel supply tank so that the annulus system could be turned back on and pressurized. At 3:06 pm the annulus system on wellhead # I was tested by pressurizing to 303 psi without any additional fuel released by the tightened flange. The diesel fuel tank was then filled to 24 inches, which is the standard fill level, and the annulus system was pressurized to 851 psi and was able to maintain integrity.

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

REPLY TO THE ATTENTION OF:
WU-16J

MAY 28 2014

CERTIFIED MAIL: 7009 1680 0000 7675 6945
RETURN RECEIPT REQUESTED

Mr. Tom Athans, Vice President
Helicon Holdings
28470 Citrin Drive
Romulus, Michigan 48174

Re: Authorization to Inject into the #1-12 Well, U. S. Environmental Protection Agency Underground Injection Control Permit Number MI-163-1W-C010 in Wayne County, Michigan

Dear Mr. Athans:

The results of the mechanical integrity demonstration for the well referenced above have been reviewed and are satisfactory. Environmental Geo-Technologies is authorized to recommence injection into this well in accordance with permit conditions. If you have any questions regarding the above information, feel free to contact Stephen Roy by phone at (312) 886-6556 or email at roy.stephen@epa.gov.

Sincerely,

Stephen M. Jann, Chief
Underground Injection Control Branch

cc: Ray Vugrinovich, MDEQ