APPENNDIX 8-C

IN-PLACE WELL ABANDONMENT PROCEDURE

APPENDIX 8-B
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INTRODUCTION

Bonnell Aluminum, Inc. (Bonnell) has prepared this In-Place Well Abandonment Procedure to direct well abandonment activities performed in support of Post Closure Care (PCC) Permit HW-087(D). Well abandonment activities will be conducted under the direction of a professional geologist or engineer registered in Georgia.

APPLICABILITY

This procedure applies to in-place well abandonment of environmental monitoring and remediation wells with flush mount or above grade surface completions. In-place well abandonment is applicable for wells with intact casings which were properly grouted during installation. Damaged or incorrectly installed wells should be abandoned using a different procedure.

REFERENCES

Well abandonment activities will be performed in general accordance with the following:

1. *Georgia Water Well Standards Act – O.C.G.A § 12-5-120 through 138*

2. Georgia Geologic Survey Circular 13 (Grouting and Plugging of Domestic Water Wells in Georgia)(Georgia Geologic Survey, 1988)

3. USEPA Region 4 SESD Design and Installation of Monitoring Wells, January 16, 2018 (SESDGUID-101-R2)

PROCEDURE

1. Excavate the area surrounding the protective well casing or flush mount vault in order to remove the protective casing, vault, and associated concrete.

2. Excavate area around well casing down to 3 feet below ground surface.

3. Cut casing at 3 feet below ground surface.

4. Prepare grout consisting of Type II Portland Cement or American Petroleum Institute Class A Cement with approximately 5 percent bentonite.

5. Lower a tremie pipe to the bottom of the well.

6. Pour or pump grout through the tremie pipe to the bottom of the well. Pouring or pumping grout directly into the top of the casing is not allowed.

7. Retract tremie slowly as grout fills the well screen and casing.

8. Continue pouring or pumping grout through the tremie pipe until undiluted grout is observed at the top of the casing.

9. Backfill the excavated area and restore the grade to match existing conditions, e.g. concrete, grass, etc.

WASTE MANAGEMENT

1. Groundwater displaced from the casing during grout injection shall be collected and containerized. Coordinate with the Environmental Manager for proper disposal.

2. Protective casings, vaults, concrete debris, etc. will be staged on-site for subsequent disposal. Coordinate with the Environmental Manager for proper disposal.

DOCUMENTATION

Well abandonment activities will be documented by preparing a Well Abandonment Record (attached) for each well abandoned.

Well Abandonment Record

BONNELL ALUMINUM

WELL NO.: _____

PROJECT NAME: _____

PROJECT NO: _____

FINISH DATE: _____

Name of Property Owner: _____

Address of Property: _____

Type of Well Installation Method: _____

_____

Date of Well Installation: _____

Original Purpose of Well Installation: _____

Total Depth of Well (measured from Top of Riser): _____

Top of Riser Height (above/below ground surface): _____

Well Diameter (nominal) and Material Type: _____

Screen Slot Size and Opening Type: _____

Screen Length and Backfill Material: _____

Depth to Water/Date (measured from Top of Riser): _____

Screened Formation or Aquifer Type: _____

Description of Well Abandonment Method: _____

Calculated Well Volume ($\prod r^2 L$ x 7.4805): _____

Type and Volume of Materials Used to Plug Well: _____

Riser and/or Screen Length Removed or Left in Place: _____

Drilling Contractor: _____ Driller's Name: _____

Additional Notes – Sketch of Monitor Well Location

Bonnell Representative (signature): _____

Professional Geologist/Engineer (signature) _____