

Company Name SCRA / AOAAAPrinted on **07/25/2013**Project SCRA Carbon Run AMD ProjectSite Name Strip Pit Pond @ Headwaters**AMDTREAT**

AMD TREAT

ANOXIC LIMESTONE DRAIN (ALD)

ALD Name Strip Pit Pond ALD

SIZING METHODS Select One

- | | | |
|-----------------------------|--------------|--|
| 1. Tons of Limestone Needed | 394 | ☐ ALD Based on Acidity Neutralization |
| 2. Tons of Limestone Needed | 1,319 | ☐ ALD Based on Retention Time |
| 3. Tons of Limestone Needed | 500 | ☒ ALD Based on Tons Limestone Entered |
| 4. Tons of Limestone Needed | 3,772 | ☐ ALD Based on Dimensions Entered |

- | | | |
|---------------------|----------------------|-------|
| 5. Retention Time | <input type="text"/> | hours |
| 6. Limestone Needed | 500 | tons |
| 7. Top Length ALD | <input type="text"/> | ft |
| 8. Top Width ALD | <input type="text"/> | ft |

☐ **Opening Screen Water Parameters**
Influent Water Parameters that Affect ALD

Calculated Acidity
 mg/L

Alkalinity
 mg/L

- ☒ Calculate Net Acidity (Acid-Alkalinity)
- ☐ Enter Net Acidity manually
- Net Acidity (Hot Acidity)
 mg/L

Design Flow
 gpm

Typical Flow
 gpm

Total Iron
 mg/L

Aluminum
 mg/L

Manganese
 mg/L

- | | | |
|--|---|---------|
| 9. System Life | <input type="text"/> | years |
| 10. Limestone Purity | <input type="text" value="85.00"/> | % |
| 11. Limestone Efficiency | <input type="text"/> | % |
| 12. % Void Space of Limestone Bed | <input type="text" value="43.00"/> | % |
| 13. Limestone Depth | <input type="text" value="4.00"/> | ft |
| 14. Density of Loose Limestone | 94.30 | lbs/ft3 |
| 15. Limestone Unit Cost | <input type="text" value="25.00"/> | \$/ton |
| 16. Limestone Placement Unit Cost | <input type="text" value="10.00"/> | \$/yd3 |
| 17. Soil Cover Depth | <input type="text" value="1.00"/> | ft |
| 18. Length to Width Ratio | Length <input type="text" value="4.00"/> Width <input type="text" value="1"/> | |
| 19. Excavation Unit Cost | <input type="text" value="5.50"/> | \$/yd3 |
| 20. Soil Replacement Unit Cost | <input type="text" value="5.00"/> | \$/yd3 |
| 21. Liner Unit Cost | <input type="text" value="2.50"/> | \$/yd2 |
| 22. Total Length of Effluent / Influent Pipe | <input type="text" value="200.00"/> | ft |
| 23. Unit Cost of Pipe | <input type="text" value="20.00"/> | \$/ft |

☒ 24. Clearing and Grubbing?

- ☒ 25a. Land Multiplier ratio
- ☐ 25b. Clear/Grub Acres

26. Clear and Grub Unit Cost \$/acre**ALD Sizing Summaries**

- | | | |
|--------------------------------|----------------|-------|
| 27. Top Width | 25.74 | ft |
| 28. Top Length | 102.97 | ft |
| 29. Limestone Surface Area | 2,651.1 | ft2 |
| 30. Limestone Volume | 392 | yd3 |
| 31. Excavation Volume | 490.9 | yd3 |
| 32. Clear & Grub Area | 0.09 | acres |
| 33. Liner Area | 737 | ft2 |
| 34. Theoretical Retention Time | 5.68 | hrs |

ALD Cost Summaries

- | | | |
|------------------------------|---------------|----|
| 35. Limestone Cost | 12,500 | \$ |
| 36. Excavation Cost | 2,700 | \$ |
| 37. Limestone Placement Cost | 3,927 | \$ |
| 38. PipeCost | 4,000 | \$ |
| 39. Liner Cost | 1,844 | \$ |
| 40. Clear and Grub Cost | 164 | \$ |
| 41. Soil Replacement Cost | 490 | \$ |

42. Total Cost **25,628** \$

Record Number 1 of 1